BANKING SECRECY AND GLOBAL FINANCE

ECONOMIC AND POLITICAL ISSUES

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Preface

Is the era of banking secrecy over? Probably not. If you assume that banking secrecy is the result of market mechanisms, it is easy to discover that the worldwide demand for and supply of banking secrecy are likely to be relevant for a long time to come.

The bottom line of our book is that the growth of criminal and illegal activities systematically generates the demand for banking secrecy, while economic and political incentives can motivate national politicians and international banks to supply banking secrecy.

By applying the tools of economics and political economy, it is possible to show that, so far, international efforts to combat banking secrecy are likely to be ineffective, or at worst counterproductive. Banking secrecy is unlikely to be a disappearing phenomenon; it is more accurate to describe it as a dynamic variable with booms and busts that are motivated by the changing preferences both of the offshore and onshore policymakers. Banking secrecy is a like a tango: it takes two to dance it.

In order to analyze the economics and politics of banking secrecy, it is necessary to step over a methodological threshold. Traditionally, monetary and financial economics have focused on legal financial transactions, while the economics of crime – following Becker – has neglected financial aspects. Hence, the phenomena of banking secrecy, in which finance is related to illegal or criminal activities, has been caught between two stools.

Our aim is to study in a systematic way the financial transactions which are characterized by a very special purpose: namely, hiding the original criminal or illegal source of the flows involved.

In order to shed light on the economics and politics of banking secrecy, we aim to model the behavior and process of making dirty money appear clean. This necessitates a multidisciplinary approach, since the behavior and process of opaque banking, besides the economic aspects, involve features of regulation and political economy as well.

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Introduction

I.1 Is the era of banking secrecy over?

Is the era of banking secrecy over, as a G20 official document stated in 2009? Probably not. If you assume that banking secrecy is the result of market mechanisms – as we do in this book – it is easy to discover that the worldwide demand and supply of banking secrecy are likely to be relevant for a long time to come.

The bottom line is that the growth of criminal and illegal activities systematically generates the demand of banking secrecy, while economic and political incentives can motivate national politicians and international banks to supply banking secrecy. By applying the tools of economics and political economy, it is possible to show that, so far, international efforts to combat banking secrecy are likely to be ineffective, or at worst counterproductive. Banking secrecy is unlikely to be a disappearing phenomenon; it is more accurate to describe it as a dynamic variable with booms and busts that are motivated by the changing preferences both of the offshore and onshore policymakers. Banking secrecy is a like a tango: it takes two to dance it.

Banking secrecy is an evergreen issue in the national and international arenas. In the aftermath of the global financial crisis, the fight against bank secrecy has become a political priority in advanced countries, and there is international shame felt toward the so-called banking secrecy havens.

Often, international organizations, as well as national governments, do not have a strong legal commitment to imposing strict measures to prevent and combat banking secrecy. For that reason soft law practices, such as blacklisting, have been introduced. The aim of the soft law tools

is to put the investigated country under intense international financial pressure, using the "name and shame" approach. Under the "name and shame approach," institutional regulatory organizations and/or national governments disclose names of non-compliant countries and/or non-compliant banks to the public, and supplement the disclosure with a form of official opprobrium. This approach is increasingly applied in the international context to address policy coordination problems among national policymakers and regulators.

Policies against banking secrecy can negatively influence the financial sector. Suspicious financial transactions are increasingly under scrutiny by supranational organizations, national policymakers and regulators, as well as and international media. For a banking institution, participation in opaque financial transactions can at the very least create increasing reputational risks. Just to provide an example of the most recent and relevant episodes, it is worth mentioning that in 2012–2013 different international banks were investigated and/or alleged and/or fined for illicit financial transactions.

Just the possibility of some sort of international war against banking secrecy can cause deep changes in the normal course of the banking and financial activities, which affects a cornerstone of modern developments in the international financial markets: the "neutrality" of the capital exchanged there.

In fact, there is no doubt that, keeping all other factors equal, the increasing fluidity of international financial interchange in recent decades has heavily depended on the de-facto "neutrality" attributed to the origin and final destination of the capital handled in the markets. Capital, in other words, had neither nation, nor color, nor odor: increasingly, it has been "faceless" capital, moved exclusively by expectations of remuneration.

Nevertheless, in the context when the war against bank secrecy had become a worldwide priority, it was inevitable that authorities and public opinion – American and then international – would become extremely sensitive regarding the exact origin and destination of that capital. In other words, we can say without doubt that the years of capital neutrality are over.

The end of capital neutrality consequently implies that the principle of free circulation does *not* apply to all financial flows: if a given amount of capital is of criminal and/or illegal origin and/or destination, including the tax evasion flows, it must be blocked and intercepted.

From the economic analysis point of view, the end of capital "neutrality" poses an interesting dilemma: what kind of relationship

exists between the quest for efficient allocation of resources and safeguarding other public, but conflicting, goals?

In order to analyze the economics and politics of banking secrecy we have to step over a methodological threshold. Traditionally, monetary and financial economics have focused on legal financial transactions, while the economics of crime – following Becker – has neglected financial aspects. Hence, the phenomena of banking secrecy, in which finance is related to illegal or criminal activities, has been caught between the two stools.

Owing to this separate development in the two sub-disciplines of economics, economic theory has not successfully captured the key features of banking secrecy. This creates a particularly disturbing gap in the literature, since lately the financial side of crime has become accentuated in the public and political debate, especially because of terrorist financing and banking misconduct concerns.

Our aim is to study in a systematic way the financial transactions which are characterized by a very special purpose: namely, hiding the original criminal or illegal source of the involved flows. In this respect we clearly separate banking secrecy from banking privacy, and our attention is exclusively concentrated on the first issue.

By shedding light on the economics and politics of banking secrecy, we aim to model the behavior and process of making dirty money appear clean. It necessitates a multidisciplinary approach, since the behavior and process of money laundering, besides economic aspects, involve features of regulation and political economy as well. Our book is organized as follows.

I.2 Banking secrecy: economics and politics

What is banking secrecy and what are its economic and political drivers? In Chapter 1 we propose a simple approach to analyzing the economics of banking secrecy, going from micro to macro.

We define banking secrecy as the use of the monetary, banking and financial services to hide the sources and/or the destinations of a money flow in order to reduce the probability of its complete identification. In other words, banking secrecy is the device to implement money laundering operations via the financial system. Further, we assume that the level of banking secrecy depends on the demand and supply of such activity.

Having defined the key features of the economic demand for banking secrecy, we will examine the supply, which is based on the political

cost and benefit analysis of the policymaker that regulates the banking system.

Establishing the micro foundations of the phenomenon enables us to construct a macroeconomic framework to explain the overall aggregate effects of banking secrecy, which influence the final decisions of the policymaker with regard to being more or less compliant with international best practices.

Chapter 1 is organized as follows. In Sections 1.2 and 1.3 we set the microeconomic model of banking secrecy; this represents the foundation for developing the basic model that identifies the so called "white" macroeconomics of banking secrecy in Section 1.4, which studies the effects of laundering via banks on growth, employment and inflation. In Sections 1.5 and 1.6, the "black" macroeconomics of banking secrecy is presented; this stresses the polluting consequences of having opaque banking activity, which increases the income and wealth of illegal and criminal sectors. Section 1.7 concludes Chapter 1 by analyzing the relationships between legal economies, illegal sectors and banking secrecy: in other words, gray macroeconomics.

I.3 Banking secrecy, regulation and supervision

In Chapter 1 we highlight that the features of banking secrecy depend on how regulation and supervision are designed and implemented. In a world characterized by international best practices, a natural question arises: when a country decides to be compliant with these international codes, which is the best way to prevent and contrast banking secrecy?

In the last two decades, the design of the regulation and supervision put in place to deal with banking secrecy have been characterized by institutions of specialized agencies: the financial intelligence units (FIUs).

Chapter 2 presents the economics and politics of the FIUs, and highlights the importance of having a banking FIU: that is, a FIU which is already part of the overall banking supervisory architecture. Further, the effectiveness of a banking FIU depends on its governance, which has to be characterized by independence and accountability.

Chapter 2 is organized as follows. From Sections 2.2 to 2.5, we discuss the specialness of the financial industry in facilitating the money laundering phenomena, and then in Section 2.6 we formally explore the rationale of establishing a FIU, discovering our theoretical benchmark: the financial FIU (FFIU). In Sections 2.7 and 2.8, the benchmark is compared with the existing institutional models, which are described by

taking into account the overall evolution of supervisory regimes around the world, before and after the global financial crisis.

However, in Section 2.9 we discover that the evolution of FIUs across the world is still in a state of flux. Although nowadays the FFIU is still the most common framework, an empirical analysis of the FIUs' establishment shows a more nuanced reality; after the 2001 terrorist attack, the adoption of FFIU became unlikely. The governments seemed to prefer the law enforcement model of the FIU (LEFIU). Furthermore, the Appendix presents the state of the art regarding the present institutional features of 64 FIUs around the world.

I.4 Banking secrecy and international financial markets

While Chapter 2 is devoted to analyzing the behavior of the countries which wish to be compliant with the international effort to combat banking secrecy, it has been acknowledged that some countries act in a manner more consistent with the aim of addressing the risk of being non-compliant with the best international practices. What are the potential effects of the non-compliance attitude on international banking flows?

To answer this question, Chapter 3 starts by discussing the Lucas Paradox and the role of institutional quality, in order to solve the puzzle. Then we go behind the Paradox to analyze the relationships between banking secrecy, soft law and international capital flows, by investigating the conditions under which international regulation against banking secrecy can effectively provide incentives for an international bank to change its business decisions.

Chapter 3 is organized as follows. Section 3.2 introduces the Lucas Paradox, which highlights the lack of capital flows from rich countries to poor countries, a phenomenon that mainstream economics cannot explain. Section 3.3 shows that the Paradox can be explained by zooming in on the role of institutional quality. The channels through which institutional quality affects capital flows are empirically investigated in Section 3.4.

Section 3.5 goes behind the traditional explanation of the Lucas Paradox by concentrating its attention on international regulation to counteract banking secrecy, and its affect on the global capital markets. Section 3.6 concludes Chapter 3 by exploring new ways to prevent banking secrecy, and by analysing recent examples of beggar-thy-neighbor regulation through extra-territorial procedures.

1
Banking Secrecy: Economics and Politics

1.1 Introduction

It is only in recent times that economic analysis has focused on the financial aspects of illegal activities, and it is a topic which has thus far been completely absent in the academic literature. The basic theoretical reason lies in the absence of special treatment of monetary and financial aspects within the traditional Becker model. Furthermore, the complexity of the topic also creates the need to adopt a multidisciplinary approach by using cognitive instruments associated with different disciplines: economics, law, politics and social sciences.

In this part of the book we propose a simple approach to analyzing the economics of banking secrecy. We define banking secrecy as the use of the monetary, banking and financial services to hide the sources and/or the destinations of money flow in order to reduce the probability of its complete identification. In other words, banking secrecy is the device used to implement money laundering operations via the financial system. Furthermore, we assume that the level of banking secrecy depends on the demand and supply of such economic activity.

Our line of reasoning is organized as follows. Initially we deal with the microeconomics of banking secrecy. In particular, we analyze the demand and the supply of banking secrecy that is implemented through financial channels.

Attention to the study of banking secrecy has progressively increased as the importance of banking secrecy in the development of any law violation that generates revenues has been recognized. In fact, the conduct of any illegal activity may be subject to a special category of transaction costs, linked to the fact that the use of the relative revenues

increases the probability that the crime will be discovered and therefore the likelihood of incrimination.

Those transaction costs can be minimized through effective banking secrecy action, a means of concealment that separates financial flows from their origin. The specific economic function of this instrument is to transform potential income into effective purchasing power using banking operations.

Having defined the key features of the economic demand for banking secrecy we can examine the supply. The latter is based on the political cost and benefit analysis of the policymaker that regulates the banking system. Establishing the micro foundations of the phenomenon enables us to formulate a macroeconomic framework that explains the overall aggregate effects of banking secrecy: that is, the increase of both the hidden economy and the economic system as a whole.

Chapter 1 is organized as follows. In Sections 1.2 and 1.3 we set the microeconomic model of banking secrecy by discussing its theoretical and empirical features. The model represents the foundations for the basic aggregate framework, described in Section 1.4, which identifies the so-called "white" macroeconomics of banking secrecy and highlights the consequences of banking secrecy on growth, employment and inflation. In Sections 1.5 and 1.6 the "black" macroeconomics of banking secrecy is presented. Here we investigate the pollution caused by allowing effective opaque banking activity to take place; such activity increases the income and wealth of the illegal and criminal sector. Section 1.7 concludes this section by intertwining white and black macroeconomics and analyzing the relationships between the legal economy, banking secrecy and illegal sectors: in other words, gray macroeconomics.

1.2 Banking secrecy: microeconomics

First of all, we need a definition of banking secrecy that points out its peculiarity with respect to other economic activities involving accumulation and/or reinvestment:

> Banking Secrecy is any financial activity aimed to hide the origin and/or the destination of a flow of money in order to reduce the probability of its complete identification. Banking secrecy is the device to implement money laundering operations via the financial system, i.e. banking laundering.

The rationale of our definition is simple: given that the conduct of any hidden activity may be subject to a special category of transaction costs, which are linked to the fact that the use of relative revenues increases the probability of its discovery, those transaction costs can be minimized through an effective banking secrecy action, a means of concealment that separates financial flows from their origin and/or destination.

In other words, whenever a given flow of *potential* purchasing power – so-called because it cannot be used directly for consumption or investment as it is the result of illegal accumulation activity – is transformed into *actual* purchasing power, banking secrecy has occurred.

Obviously we acknowledge that secrecy can be obtained by using other channels, but we will focus on the banking and financial sectors because of their one common and very important feature: information asymmetry. Information asymmetry is crucial since it has endemically spread throughout the financial industry and, as a result, it has intertwined with the monetary nature of every exchange in modern economic systems.

Focusing our attention on the concept of costs' disclosure enables us to grasp not only the distinctive nature of this hidden economic activity but also its general features. The definition we have adopted maintains basic unity among three aspects which, according to other points of view, represent three different objects of banking secrecy action: the financial flows; the wealth and goods intended as terminal moments of those flows; and the principal actors, or those who have the wealth and goods at their disposal.

In our scheme of analysis there will always be an agent who, having committed a law violation that has generated accumulation of hidden proceeds, moves the flows to be laundered. By doing that, she/he (hereafter "he") subsequently increases her/his (hereafter "his") financial assets through investment in the legal sector, or reaccumulation in the hidden sector. The agent can be an individual or an organization.

In general, following the classic intuition à la Becker, we maintain that an economic agent's choice of whether or not to invest resources in hidden activities – of which banking secrecy is one – depends, ceteris paribus, on two peculiar variables, given the possible returns: the probability of being discovered and the related punishment costs.

Assigning a monetary utility to banking secrecy activity by giving it a unitary expression actually summarizes the values of a series of more general services; these services stimulate the growth of demand for banking secrecy services on the part of the agents accumulating

illegal resources which have to remain hidden. Banking secrecy, in fact, produces for its users:

1. An economic value, in the strict sense, by minimizing the expected discovery costs, transforming the liquidity derived from a wide range of hidden activities into purchasing power. In this way, banking secrecy performs the transformation function.

Transformation, in its turn, produces two more utilities for the agent, which are:

2. The possibility of increasing the agent's rate of penetration in the legal sectors of the economy through successive phases of investment; in other words, banking secrecy is a device to implement the investment function.
3. The possibility of increasing the degree to which the actors and organizations are integrated in the legal system as a whole; thus, banking secrecy facilitates the integration.

Having defined the demand for banking secrecy in the most general terms, we can investigate the features of the supply of banking secrecy, which depends prima facie on how the banking regulation and supervision are designed. Here we adapt a framework introduced and developed in Masciandaro (1999), (2005) and (2008).

While discussing the optimal characteristics of the financial rules aimed at promoting an influx of hidden funds into a given country, we will focus on the actions of a national policymaker in what we shall call a banking secrecy (BS) country.

Let us assume that our policymaker is aware that, given the existence of the international standards of anti-money laundering regulation,[1] potential demand for banking secrecy of a total amount equal to W exists on the part of one or more individuals and/or organizations.

It is worth noting that the micro foundations of the laundering market have recently been well described[2] by distinguishing the demand and the supply, and obtaining: a) the endogenous market clearing price, and b) a setting to evaluate different public policies against laundering through banks.

Now for the description of our framework, let us assume that the agent (i.e. an actor/organization involved in illegal activities) with his target

[1] Unger (2013) overviewed the history of anti-money laundering regulation.
[2] McCarthy et al. (2014).

linear value function *U* derives a certain flow of monetary income from illegal activities.

The illegal income can be used by taking into account two assumptions. The first assumption is that every choice implies a change of the probability that the revenue generating crime committed by the agent is detected. In other words, every use of the criminal money can influence the probability of crime detection (detection effect). Another assumption is that the detection effect can be different choice by choice. Putting it in another way, the standard approach, as used by Becker, is adopted.

The demand for laundering through banks emerges: the agent looks for a technique for laundering via banks that minimizes the detection effect, thus cleaning up the illegal income.

Now let us zoom in on the technique of laundering through a bank: the explicit supply of laundering services provided by a professional launderer. The supply of the laundering techniques is potentially appealing, given that an effective laundering operation will become the device for the beneficial owner – the illegal actor – to use his cleaned revenues for every kind of transaction (consumption/saving, investment). The pros of banking secrecy become evident.

But at the same time it cannot be considered a risk-free deal, since usually we have to suppose that an anti- laundering monitoring is in force. Therefore, it is likely that the laundering services are supplied by the bank at a price, which summarizes the cons of banking secrecy.

By using a bargaining model it is then easily possible to describe the choices of the two agents – the consumer and the provider of banking secrecy – in obtaining the price through the market clearing. Subsequently, the equilibrium can be modified by taking into account the possibility to implement three different public policies: (a) a change in the effectiveness of the overall anti-criminal policy; (b) a change in the effectiveness of the specific laundering policy; (c) a change in the effectiveness of the monitoring activity. The design of the three policies will depend on the policymaker's perception of his costs and benefits. Here our analysis comes in.

We analyze a situation in which the international market of banking secrecy is demand-driven, as it is likely to be in the real world, since every potential BS jurisdiction is a relatively small country. Furthermore, each country can become a BS jurisdiction, if its regulation is lax (i.e. it is below the settled international standards). The financial laxity is the differential between the country regulation and the international best practices, and it is 0 when the country is perfectly compliant.

Each BS country can define the optimal degree of its financial laxity and consequently determine its own optimal level of banking secrecy services. The design of the financial regulation represents the contractual device that determines the relationships between the country and the agents which demand banking secrecy.

In the model, the policymaker's choice of the optimal degree of financial laxity is assumed to be equivalent to the decision on the optimal supply level of banking secrecy services. An alternative view should be to consider the degree of regulation laxity as one of the possible instrumental variables in order to define the optimal supply of banking secrecy services. It is a fact, however, that the link between banking secrecy supply and other kinds of public policy is logically and empirically weaker. Furthermore, it should be easy to model the relationship between laxity and banking secrecy by considering other supplementary drivers – including, for example, random effects and lag effects.

The policymaker may decide to accommodate an amount of flow to launder equal to Y, where obviously $0 < Y < W$. As we have already noted in our simple model, the decision on the optimal level of banking secrecy services is equivalent to the choice of the optimal degree of financial laxity.

Defining the utility function of the policymaker as U, on the one hand, we can see that the expected utility from unlaundered flows is 0, whatever their amount is:

$$U(W - Y) = 0 \tag{1.1}$$

On the other hand, every laundered monetary sum can have a positive expected value for the policymaker, since the BS country can derive benefits from offering financial services which are characterized by the banking secrecy that the lax regulation produces.

For example, one might assume that the lower the national income, and at the same time the higher the proportion of that income is coming from the financial industry, the greater will be the propensity to offer banking secrecy services, keeping all other parameters equal. In general, let us define these expected national benefits as secrecy benefits.

Then the fact that the laundered flow, which we shall indicate with Y, has a positive expected profitability for the policymaker may be grasped by assuming that the monetary value B of this benefit is equal to:

$$B = mY \tag{1.2}$$

where $m > 0$ is the expected net rate of return on the banking secrecy services – that is, on the degree of laxity – offered by the BS country. The inflow of foreign capital can produce national revenues by increasing the activity of the financial industry and then through the traditional macroeconomic multiplier effects producing positive effects on the national product as a whole.

If the decisions to hide were cost free, it would be easy to see that $Y = W$, where Y is the amount of funds that the policymaker would gain by institutionalizing banking secrecy services via lax regulation. In the real world, the situation is not that simple.

First of all, a BS country may be subject to international reputational and regulatory costs, given its non-compliant attitude. In order to be more attractive, a country must make legislative and regulatory choices to become non-compliant with the international standards; this will increase its credibility as a BS country. These choices may have a reputational cost because being a BS country may result in negative backlashes: either in relation to capital, intermediaries and companies sensitive to integrity, or to international relations in general. In fact it is worth noting that there is a possibility that lax regulation may be as unattractive for some legal investors as over-regulation.

On top of that, we have to consider that the country's non-compliance with the international standards of anti-money laundering regulation can cause sanctions and penalties. We will address this issue in more detail below.

Secondly, a BS country must consider that money laundering can lead to the risk of strengthening internal illegal activities. Banking secrecy can be an appealing device for both foreign and national actors involved in illegal businesses; as a result, there may be national costs in offering banking secrecy.

The policymaker must consider the possibility that domestic social damage may occur because of the fact that the country is a possible growth engine for black and gray economies. It is important to note that, at the same time, the less the BS country registers the actual or potential presence of illegal activities, the lower the perceived national costs of banking secrecy are likely to be.

Summing up the overall cost C of offering banking secrecy for a BS country will consist of two addends.

First, let us assume that the international costs are proportional – according to a parameter $c > 0$ – to the amount of flow that is demanded to be laundered. Second, there will be a hidden economy cost and its

expected value rises as the laundered amount of money increases, for a multiple of the parameter $0 \leq \gamma \geq 0$.

Note that we are using two relevant assumptions in designing the policymaker objective function: (a) the national issues are relatively more important than the international ones; and (b) both of them can affect the regulation design in two opposite directions.

First of all we assume that for political–electoral reasons, the policymaker in the BS country – all other things being equal – is more sensitive to internal illegal activities which can directly affect the country's citizens than to the international costs, the effects of which are less perceptible to and direct on the citizens/voters.

Furthermore, we wish to take into account the fact that in some countries politicians wish to please the constituencies that directly or indirectly represent the hidden economy. In fact, in describing policymakers, we wish to consider the existence of two different approaches in modeling them: the benevolent player's approach and the politician's approach.

In the benevolent player's approach it is assumed that the policymaker's objective function is perfectly equal to its social one. In the politician's approach it is possible to explore two alternative views: the helping-hand view and the grabbing-hand view, which share a common premise.

According to the politician's approach, policymakers are politicians, which means that they are career-concerned agents motivated by the goal of pleasing voters in order to win elections. The main difference concerns which type of voters – general interest versus vested interest – they are trying to please.

This assumption means that merely delegating the specialized task to policymakers will not automatically produce the optimal social outcome if these policymakers can be subject to the risk of being captured. As we are focusing on the banking and financial industries, we highlight that every politician can be captured by private interests, in the sense that a policymaker who is supposed to be acting in the public interest can be dominated by vested interests of the existing incumbents in the industry that it oversees.

Therefore in a policy game in which the incumbent policymaker may please two different constituencies, we can identify two different types of government: the helping-hand (HH) policymaker versus the grabbing-hand (GH) policymaker. In general, the HH policymaker is a government that aims to maximize social welfare. The grabbing-hand

(GH) policymaker is also an elected politician, who must thus please the voters. However, let us consider the case of lobbies, which can influence the policymaker's choices. In contrast with the HH policymaker, the GH government tends to benefit only a small, but well-organized, interest group. The GH policymaker is captured by a specific interest group, whose support is considered fundamental for (re)election.

We can assume that, while common voters can only influence the policymaker through elections, the vested interest group can influence the policymaker through explicit or implicit contributions, which are significant enough to increase the chances of winning elections. In this case, the interested group's preferences become the fundamental variable in explaining the policy choices.

Summing up, the cost function of the policymaker can be described as follows:

$$C = cY + \gamma^2 Y \tag{1.3}$$

Lastly, in order to identify the overall banking secrecy costs, which the policymaker has to address, we must consider that the existence of a BS country is an increasing source of economic, political and social risks for the international community.

Therefore, when a non-compliant country decides whether – and to what extent – to establish a regulatory design that will offer banking secrecy services, it must consider that this activity bears risks: the international community might consider this action as a censurable policy, perhaps even prohibitive, and as such subject to sanctions and punitive countermeasures.

Let us suppose, therefore, that offering banking secrecy services may cause explicit international sanctions. The equivalent monetary value of sanctions is equal to S and the probability of being sanctioned by the international community for the action is equal to p.

The probability p can be defined as the degree of economic enforcement of the international sanction. Let us call costs associated with this risk the international sanction costs. In this way, we are able to reflect in our model the possibility that the international community may issue explicit sanctions against the BS country, in order to produce the so-called stigma effect: that is, a negative effect on the capital flows of the BS country when the sanctions are inflicted.

Let us also stress the fact that the nature and magnitude of the stigma effect is still a controversial issue.

The first theoretical and empirical discussion of the stigma effect as a controversial issue has been made in Masciandaro (2005). The study highlighted the fact that in the aftermath of September 11, 2001, the role of the lax financial regulation in facilitating the money laundering and terrorist financing phenomena had received growing attention.

Two interacting principles are commonly featured in the debate about the relationship between money laundering and regulation: (a) illegal financial flows are facilitated by lax financial regulation; (b) countries that adopt lax financial regulation do not cooperate in the international effort aimed at combating criminal finance (International Monetary Fund 1998, Holder 2003).

These two principles characterize the mandate of the Financial Action Task Force (FATF) for the prevention of money laundering and terrorism finance. On the one hand, to address the problems associated with criminal finance risks it is fundamental to develop legal standards for regulation. The FAFT standards (or recommendations) became the benchmark for measuring the degree of laxity of AML/CFT financial regulation in every country setting.

On the other hand, to monitor the compliance of countries with international standards and to face the problem of lack of international harmonization and coordination, the FAFT uses a list of specific criteria that are consistent with the standards, in order to determine the BLC jurisdictions; these are commonly described as blacklists (Alexander 2001, Masciandaro 2005, Verdugo Yepes 2011, Beekarry 2013).

The blacklist instrument represents the cornerstone of the international effort to reduce risks that some countries or territories became "havens" for criminal financial activities, which postulates the stigma effect: that is, the threat for listed countries to face a drop in the international capital flows and then an erosion of the BLC country's competitive advantages (Hampton and Christensen 2002).

But here the possibility of a stigma paradox comes into play. When focusing on the supply of regulation, different studies have noted that various jurisdictions, notwithstanding the blacklist threat, delay or fail to change their rules, which confirms their non-cooperative attitude (the reluctant friend effect).

Furthermore, despite the fact that most jurisdictions in the black list have enacted regulatory measures in an effort to be removed from it, it remains to be proved that a regulatory reform is sufficient to guarantee that a country has really changed its non-cooperative attitude, thus causing a decreasing appeal for black capital flows (the false friend

effect). The existence of the two consequences can diminish the stigma effect, producing stigma neutrality or the stigma paradox.

The theoretical analysis of the problem under discussion has developed an assumption that lax financial regulation might be a strategic dependent variable for national policymakers that are seeking to maximize the net benefits produced by any public policy choice. Therefore, given the structural features and endowments of their countries, some policymakers may find it profitable to adopt financial regulations which intensify and protect opaque financial flows, and therefore may choose de facto to be a BLC jurisdiction.

The potential incentives to be a BLC country have been empirically tested using cross-sectional tests, which have found that the probability of being a BLC jurisdiction can be linked to specific country features (Masciandaro 2006, Verdugo Yepes 2011, Schwarz 2011).

The rationale behind the decision to be a BLC country has been further explored from a theoretical point of view (Unger and Rawlings 2008, Gnutzmann et al. 2010). Recently also the interactions between the FATF and the national governments have been analyzed using a principal – agent framework (Ferwerda 2013).

The economics of the stigma effect has been deeply analyzed in Picard and Pieretti (2011). In this paper, the authors focus on the incentives of the banks located in a BLC country to comply with the anti-money laundering regulation. The blacklisting practice is interpreted as an international pressure policy applied to the BLC banks, and the stigma effect holds when the pressure policy gets strong enough.

More precisely, the stigma effect becomes effective when the reputational costs associated with the blacklisting procedures – which can harm the bank costumers – are higher than the anti-money laundering regulation compliance costs. In the model proposed by Picard and Pieretti, international policymakers first act efficiently and then they implement the optimal blacklisting pressure. In the real world, non-efficient policymakers are likely to exist. Therefore, the blacklisting pressure can be insufficient and as a result the BLC country will continue to attract financial flows, creating the stigma paradox.

The existence of the stigma paradox has been empirically demonstrated in Rose and Spiegel (2006). Using bilateral and multilateral data from over 200 countries with a gravity framework, the study analyzes the determinants of international capital flows. The authors find that it can produce beneficial effects for a country to be assigned the status of tax haven and/or money launderer by the international organizations.

Additionally, Foad (2012) identifies which countries have investors that benefit less from offshore financial centers (OFCs). He finds that countries with more economic freedom and low levels of corruption tend to be less attractive. The empirical analysis confirmed that the desire to circumvent national laws and regulations can be a driver for the shifting financial assets abroad.

The search for the impact of the blacklisting is also implemented in Kudrle (2008). Using ARIMA techniques on the sample of the blacklisted countries, the study analyzes the financial effects of entering and dropping out of the list. The results are inconclusive: all three effects – stigma effect, stigma paradox and stigma neutrality – can be found, at different times on the observed jurisdiction.

Recently Masciandaro (2013) analyzed the international financial flows of Latin America, in order to verify the existence and direction of the stigma effect. The work has tested if the Financial Action Task Force (FAFT) listing/delisting actions are effective "sticks and carrots" for the targeted countries in influencing their cross-border banking flows.

The tests focused on the 34 Latin American countries in the period 1996–2007, using annual panel data. The study finds evidence that the list in/list out mechanism can affect the banking inflows, provided that some conditions hold. The relevance of the stigma effect seems to depend on one side on the efficiency of the international capital markets and on the other side on specific features of the listed/delisted country: regulatory lightness, banking profitability, growth per capita.

Keeping in mind all the results described above, in our model we assume that the stigma effect holds, that is, that the international sanctions harm the policymakers' target function.

The monetary value of the damage S from sanctions against the banking secrecy must be at least equal to the value Y of the laundered flow. In reality, the damage from a sanction is likely to be a multiple, because of the value of the intangible damage related to such international sanctions. Therefore we can assume that the net amount of the international sanctions – that is, the amount which is equal to the difference between costs and benefits of the banking secrecy – is a multiple of the hidden volume, equal, for the sake of simplicity, to the square of that sum. In other words, we assume non-linearity in the international sanctions.

Finally, we should also consider that once financial laxity is formally sanctioned, the international community would apply the sanctions with a varying degree of severity, based on a political cost-benefit analysis of each national policymaker. In fact – as is usual in our way of

thinking – we have to consider that for some players of the international community the existence of the BS countries is not automatically a negative externality. The policymakers can be more or less benevolent, depending on how costly the presence of the BS countries is for their economy and/or for the constituencies that they wish to please.

Recent economic analyzes have pointed out that the existence of BS countries may have unintended positive effects for their neighbours, if they play the role of a competitive and efficient device. Rose and Spiegel (2006) have tested and confirmed the assumption that the OFC proximity is associated with a more competitive domestic banking system and greater overall financial depth. Furthermore, Hines (2010) has produced empirical evidence to show that tax havens, which are commonly associated with banking secrecy, contribute to financial market competition in high-tax countries, as well as to their investment and growth.

It is evident that the more the spillover effects of the BS countries are perceived by some onshore policymakers, the more their severity in applying or promoting international punishment of the BS countries is likely to be a variable rather than a constant feature of the international institutional environment.

Therefore, the speed and process of applying the punishment may be variable. It can be affected by national or international structural variables. The *severity* (or, if you wish, the degree of political enforcement) by which the sanctions are applied can be expressed by variations in the parameter *t*:

$$S = tY^2 \tag{1.4}$$

Thus, the dilemma of choice that each national policymaker faces is the following: if I, as policymaker, design lax regulations that are in favor of banking secrecy, and the international community does not sanction it, the benefit for my own BS country – net of the expected cost associated with reputation costs and national risks – is positive; if, on the other hand, the BS country is hit by explicit international sanctions, it will not only sustain the expected costs but will also be damaged by the international sanctions.

The game is between the policymaker and Nature, since we are working with the hypothesis of a small country. We will remove this assumption later on, when confirming all our results.

Having defined the terms of the situation, the policymaker is thus faced with the problem of deciding whether – and to what degree – to supply banking secrecy: that is, the problem of defining the optimal level of regulatory laxity, and therefore the degree of differentiation of the country's regulation, with respect to the international standards.

The optimal policy is not derived from any social utility function. It is the result of the policymaker's maximising process, based on its own political cost-benefits analysis. The policymaker's expected utility E can now be better specified as:

$$E(U) = u[(1 - p)(B - C) - p(C + S)] \tag{1.5}$$

But since we have defined $B = mY$ and $C = cY + \gamma^2 Y$, then the expression (1.5) becomes:

$$E(U) = u(1 - p)\{mY - cY - \gamma^2 Y\} - up\ (cY + \gamma^2 Y + tY^2) \tag{1.6}$$

The linear specification of the function of policymaker utility tells us that the policymaker is a risk-neutral agent. This utility function is consistent with our assumptions. In fact:

$$\frac{\partial E}{\partial p} = u\left[-mY + cY + \gamma^2 Y - \left(cY + tY^2 + \gamma^2 Y\right)\right]$$
$$= uY\left(-tY - m\right) = -uY\left(tY + m\right) < 0$$

$$\frac{\partial E}{\partial t} = -upY^2 < 0$$

$$\frac{\partial E}{\partial m} = u\left(1 - p\right)Y > 0$$

In other words, we find that the level of utility of the policymaker, and therefore of the BS country, declines if the probability of international sanctions and their severity increases. At the same time the level of utility increases while the expected return on the banking secrecy activity increases.

The policymaker must now determine the optimal level Y^* of banking secrecy – bearing in mind the maximum resources that are available to him – given that the potential demand for banking secrecy is equal to W.

Taking twice the derivative of the equation (1.6) with respect to the policymaker's decision – to observe the conditions necessary and sufficient for a maximum – we can determine the level of optimal banking secrecy, starting from:

$$\begin{aligned}\frac{\partial E}{\partial Y} &= u\left[(1-p)\left(m-c-\gamma^2\right) - pc - 2tpY - p\gamma^2\right] \\ &= u\left[(1-p)m - c - \gamma^2 + cp - cp - 2tpY\right] \\ &= -u\left(2ptY + c + \gamma^2 - m(1-p)\right)\end{aligned}$$

$$\frac{\partial^2 E}{\partial^2 Y} = -2upt < 0$$

Therefore we can elaborate the following results:

1. *Optimal banking secrecy*: it is possible to define the optimal level of banking secrecy, which depends – as we will see – on the lax regulation condition.

The policymaker function reaches its maximum at the point, when:

$$\frac{\partial E}{\partial Y} = 0$$

therefore:

$$(2ptY + c + \gamma^2 - m\,(1-p)) = 0$$

which gives us:

$$Y^* = \frac{m(1-p) - c - \gamma^2}{2pt} \tag{1.7}$$

Y^* represents the optimal level of banking secrecy services and it is equivalent to the optimal degree of financial regulation laxity. Let us observe that for $Y^* > 0$ $m(1-p) - c - \gamma^2 > 0$ must be true: that is, the factor of the expected benefit from the banking secrecy activity, considering the probability of avoiding international sanctions, has to be greater than the sum of the reputational and national cost factors.

Let us define this condition as the lax regulation condition. Note that the more powerful the constituencies who are in favor of the hidden economy ($\gamma < 0$), the more likely it will be that the laxity condition is satisfied.

In a country where the economic benefits of having opaque banking services are relevant – and/or the risk of being sanctioned are low, and/or having a hidden economy is not politically costly – banking secrecy is likely to be high.

It is also possible to define the critical value Y', that defines the limit beyond which it is definitely optimal for the policymaker to abstain from offering banking secrecy services. In fact, after a certain level the damage associated with the risk of being punished by the international community is so high that the expected utility becomes negative. In that case being a BS country would not be beneficial.

All other conditions being equal, this result depends on the non-linearity of the sanctions. In general this result highlights the importance of having an effective design for the international sanctioning mechanisms. In turn, the effectiveness of the sanctioning procedures is likely to depend on the number of countries that find it convenient to enforce the international agreement against banking secrecy.

The critical value Y' must, of course, be compared with the level of potential demand for resources to be hidden W. If $Y' < W$, then the amount of resources $(W - Y')$ will be excluded a priori by any offer of banking secrecy. If $Y' > W$, laundering is potentially beneficial to apply to all available resources. We must then determine the actual level Y'.

Let us see to what extent the value Y' corresponds:

$$E(U) = u\left[(1-p)\left\{mY - cY - \gamma^2 Y\right\} - p\left(cY + \gamma^2 Y + tY^2\right)\right]$$

$$E(U) = uY\left[(1-p)\left(m - c - \gamma^2\right) - cp - p\gamma^2 - tpY\right]$$

$$Y = 0$$

Therefore, $E(U) = 0$ when

$$Y' = \frac{\left[(1-p)\left(m - c - \gamma^2\right)\right] - cp - p\gamma^2}{tp} =$$

$$\frac{(1-p)m - c - \gamma^2 + \gamma^2 p - \gamma^2 p + cp - cp}{tp} = \frac{(1-p)m - c - \gamma^2}{tp}$$

Now we can discuss the relationships between the structural variables of the model and the optimal level of banking secrecy Y^*. Firstly, the optimal level of banking secrecy offered will be inversely proportional to the probability of international sanctions:

$$Y^* = \frac{m(1-p) - c - \gamma^2}{2pt} = \frac{1}{2}Y'$$

$$\frac{\partial Y^*}{\partial p} = \frac{-2mpt - 2t\left[(1-p)m - c - \gamma^2\right]}{(2pt)^2}$$

$$= \frac{-2mpt - 2tm + 2ptm + 2ct + 2t\gamma^2}{(2pt)^2}$$

$$= \frac{-2tm + 2ct + 2t\gamma^2}{(2pt)^2}$$

$$= \frac{(c + \gamma^2 - m)}{2p^2t} < 0$$

$$\frac{\partial^2 Y^*}{\partial p} = \frac{-4pt(c + \gamma^2 - m)}{4p^4t^2} = \frac{m - c - \gamma^2}{p^3t} > 0$$

Therefore, if we assume that $m > c + \gamma^2$ – that is, the marginal gain of banking secrecy is higher than its marginal costs – we find that the first derivative is negative, so the function decreases as the probability of detection increases and the concavity faces upward (i.e. the second derivative is greater than 0). This means that we can obtain a second result:

2. *Economic enforcement*: the optimal degree of banking secrecy increases as the degree of economic enforcement decreases.
   $Y^*(p) = 0$, which means that it intersects the x-axis at point:

   $$Y^* = \frac{m(1-p) - c - \gamma^2}{2pt} = 0$$

   which means:

   $$(1-p)m - c - \gamma^2 = 0 \Rightarrow m - pm - c - \gamma^2 = 0 \Rightarrow p = \frac{m - c - \gamma^2}{m}$$

and we can also say that for:

$$p \to 0 \quad Y^* \to +\infty$$

$$p \to 1 \qquad Y^* \to \frac{-c-\gamma^2}{2t}$$

As expected, when there are no costs of laxity to the BS country, that country will abstain from offering banking secrecy services ($Y^* = 0$) only when the international sanctions are absolutely certain ($p = 1$).

As p goes toward 0, the optimal level of laxity for the policymaker goes to infinity, $Y^* \to +\infty$. At the same time the policymaker has available a maximum demand of W, so it must stop with the curve on the probability level at the point where $Y^* = W$.

Let us then find the minimum possible value p can take (p_m), that is, the value at the point where $Y^* = W$:

$$Y^* = \frac{m(1-p_m)-c-\gamma^2}{2p_m t} = W$$

$$m - p_m m - c - \gamma^2 = 2Wp_m t$$

$$\Rightarrow 2Wp_m t + p_m m = m - c - \gamma^2$$

$$\Rightarrow p_m(2Wt + m) = m - c - \gamma^2$$

$$\Rightarrow p_m = \frac{m-c-\gamma^2}{2Wt+m}$$

Second, the laxity of the BS country is affected by the severity of the international community (i.e. its political commitment) in applying the sanction. Our third result is then:

3. *Political enforcement*: the optimal degree of banking secrecy increases as the level of political enforcement decreases.

$$Y^* = \frac{m(1-p)-c-\gamma^2}{2pt}$$

$$\frac{\partial Y^*}{\partial t} = \frac{-2p\left[m(1-p)-c-\gamma^2\right]}{4p^2t^2} < 0$$

Therefore Y^* decreases as t increases. When t tends to $+\infty$ the first derivative goes to 0. The overall political commitment of the international community will depend on how convenient it is for each national player to enforce the agreed mechanism of sanctions.

What we said about the case where $p = p_m$ also applies here. If, in fact, t goes to 0, we see that Y^* goes to $+\infty$. But this is impossible, because the maximum level of available illegal funds is W. Therefore we must also find the minimum value of t ($t - m$) which corresponds to the $Y^* = W$ condition;

$$Y^* = \frac{m(1-p) - c - \gamma^2}{2pt} = W$$

$$= \frac{m(1-p) - c - \gamma^2}{2pt_m} = W$$

$$\Rightarrow m(1-p) - c - \gamma^2 = 2Wpt_m$$

$$\Rightarrow t_m = \frac{m(1-p) - c - \gamma^2}{2Wp}$$

The laxity of the BS country will also depend on the profitability of the supply of banking secrecy services. Then:

4. *Banking secrecy profitability*: the optimal degree of banking secrecy increases as the level of national benefits increases.
   Given:

$$Y^* = \frac{m(1-p) - c - \gamma^2}{2pt}$$

It is a function of the type $Y = aX + b$ where $a = \frac{1-p}{2pt}$ and $b = \frac{-c - \gamma^2}{2pt}$

$$\frac{\partial Y^*}{\partial m} = \frac{(1-p)}{2pt} > 0$$

It is worth noting that from:

$$Y^* = \frac{m(1-p) - c - \gamma^2}{2pt} = 0$$

$$\Rightarrow m(1-p)-c-\gamma^2=0$$

$$\Rightarrow m=\frac{c+\gamma^2}{(1-p)}$$

we obtain:

$$Y^{*}=\frac{m_{\max}(1-p)-c-\gamma^2}{2pt}=W$$

$$m_{\max}=\frac{2Wpt+c+\gamma^2}{(1-p)}$$

The banking secrecy will therefore be positive if the profitability lies in the range of $[m_m, m_{\max}]$. Each policymaker can evaluate the macroeconomic benefits in being a BS country; higher gains influence the optimal level of banking secrecy supply.

We can now analyze the relationship between the reputation costs of banking secrecy and its optimal supply.

5. *International shame*: the optimal degree of banking secrecy increases as the level of international reputation costs decreases.
   As one might expect, the relationship is inverse and equal to:

$$Y^{*}=\frac{m(1-p)-c-\gamma^2}{2pt}$$

   where $Y^{*}(c)$ is a straight line of the type $Y = -aX + b$
   If the reputation costs are extremely high, then $Y^{*} = 0$. Let us see for what value of c:

$$Y^{*}=\frac{m(1-p)-c_{\max}-\gamma^2}{2pt}=0$$

$$\Rightarrow \frac{m(1-p)-c_{\max}-\gamma^2}{2pt}=0$$

$$\Rightarrow m(1-p)-c_{\max}-\gamma^2=0$$

$$\Rightarrow c_{\max}=m(1-p)-\gamma^2$$

$$\frac{\partial Y^*}{\partial c} = \frac{-1}{2pt} < 0$$

$$Y^* = \frac{m(1-p) - c - \gamma^2}{2pt} = W$$

$$\frac{m(1-p) - c_m - \gamma^2}{2pt} = W$$

$$\Rightarrow m(1-p) - c_m - \gamma^2 = 2Wpt$$

$$\Rightarrow c_m = m(1-p) - \gamma^2 - 2Wpt$$

Last, the laxity of the BS country also depends on the national spillover of the banking secrecy activity, summarized by the parameter γ:

6. *National spillover*: the optimal degree of banking secrecy increases as the level of the national costs decreases

$$Y^* = \frac{m(1-p) - c - \gamma^2}{2pt}$$

$$Y^* = \frac{m(1-p) - c - \gamma^2}{2pt} = 0 \Rightarrow \gamma_{\max} = \sqrt{\left[m(1-p) - c\right]}$$

$$\frac{\partial Y^*}{\partial \gamma} = \frac{-\gamma}{pt} < 0$$

$$\frac{\partial^2 Y^*}{\partial^2 \gamma} = \frac{-1}{pt} < 0 \qquad \text{if} \qquad \gamma = 0 \Rightarrow Y^* = \frac{m(1-p) - c}{2pt}$$

As the national costs increase, the propensity of the BS country to offer banking secrecy services decreases, and vice versa: if the policymaker tolerates or likes the national hidden economy, banking secrecy is likely to be high. As usual, we can also determine the maximum and minimum values of the parameter γ to which the minimum and maximum of the optimal laxity instituted by the policymaker correspond:

$$Y^* = \frac{m(1-p) - c - \gamma^2}{2pt} = W$$

$$\Rightarrow m(1-p) - c - \gamma^2 = 2Wpt$$

$$\Rightarrow \gamma^2 = m(1-p) - c - 2Wpt$$

$$\Rightarrow \gamma_{\min} = \sqrt{\left[m(1-p) - c - 2W\right.}$$

At the end of the day, our story is based on two pillars. First, that a country will become a BS country if the lax regulation condition holds: that is, the benefits of banking secrecy outweigh its costs.

Second, all other things being equal, in the cost and benefit analysis that the policymaker implements the way that the international standards are designed and implemented is crucial. The costs of being lax can influence the asymmetry between the costs and benefits of offering banking secrecy, which is fundamental in explaining the attitude of a country toward offering more or less banking secrecy.

1.3 Banking secrecy: empirics

In this section we analyze the empirical implications of the framework developed in the previous section, using the results obtained in Masciandaro (2005). To test our model, we concentrate our attention on the case of the offshore financial centers (OFCs). The offshore financial centers are those jurisdictions which specialize in providing financial services to residents in other jurisdictions (Powell 2006) and supplying banking secrecy through lax regulation. In other words, the OFCs can be considered a special case of BS countries.

To perform the empirical analysis, the following logic has been developed: gains and losses of being an OFC country are expected variables for the policymaker. But the expectations of policymakers, given their personal goals, are likely to be influenced by structural, economic and institutional variables, which may vary from country to country. Therefore OFC status is neither deterministic nor completely random. The national economic and institutional endowment can determine, other things being equal, the policymakers' expected gain or loss for a specific jurisdiction status (path dependency). Therefore, the OFC status can be considered the dependent variable in a path dependence framework.

In order to test the path dependence hypothesis, it is crucial to identify the policymaker's preferences. Furthermore, the economic agents have no information on the true preferences of the policymaker: his optimal lax regulation, which defines his optimal supply of banking secrecy, is a hidden variable.

The first approach to shedding light on the policymaker's preferences would be the narrative approach. According to this, official documents would be interpreted as a gauge of the policymaker's choices. However this approach has a severe drawback: when there is substantial room for differences between the policymaker's announcements and its true preferences, the first cannot be used as a proxy for the latter. In the

case of banking secrecy, discrepancies between announcements and true preferences are likely to occur.

The second approach – which has been adopted here – is to consider the policymaker's actual choices in determining their jurisdiction status (factual approach) a proxy of its preferences. The factual approach has already been used in Masciandaro and Portolano (2004) and Masciandaro (2005).

At each point in time, we observe the policymaker's decision to maintain or change the jurisdiction status, through his choice of the level of laxity. In other words, we consider that policymakers face discrete choices.

The empirical analysis that is consistent with these discrete choices, involves the assumption of the existence of unobservable policymaker's utilities *Uij*, where each *Uij* is the utility received by the *i*th national policymaker from the *j*th level of non-compliance with the international standards. Since the utility *Uij* is unobservable, we represent it as a random quantity, assuming that it is composed of a systematic part *U* and a random error term ε. Furthermore, we assert that the utilities *Uij* are functions of the attributes of the different levels of lax regulation.

Combining the two hypotheses, we have a random utility framework for the unobservable lax regulation variable. As usual, we assume that the errors εij are independent for each national policymaker and institutional alternative, and they are normally distributed with a mean of 0 and variance equal to 1. The assumption of independence implies that the utility derived by one national policymaker is not related to the utility derived by any other national policymaker, and that the utility that a policymaker derives from the choice of a given level of laxity is not related to the utility provided by the other alternatives.

In the factual approach, the first crucial issue is the measurement of the policymaker's choices of jurisdiction status. This is the definition of the dependent variable – that is, the status of the OFC jurisdiction. It is worth mentioning that the factual approach has the drawback that the institutional measurements are subjective. However, the subjectivity in the interpretation is also present in the narrative approach.

In order to assess the relationship – if any – between the OFC status and its drivers, a probability model of alternative country status as a function of structural, economic and institutional variables has been estimated.

Since the optimal degree of lax regulation consistent with the policymaker's utility is an unobservable variable, we have to use a proxy for it. The status of being offshore or onshore country can be used as such a proxy. As the country status is a qualitative variable, the estimation of a model for such a dependent variable necessitates the use of a specific technique. The binary model technique should be applied.

Let y be the policymaker's choice variable, which is equal to 0 if the policymaker's country is an onshore country, and equal to 1 if it is an offshore country. The empirical model for y, conditional on a set of K explanatory variables x, can be derived from a latent variable model. In order to test this relationship, let us assume that the unobserved variable (i.e. the optimal degree of non-compliance y^*), is determined by equation (1.8):

$$y^* = \lambda' x + \varepsilon \tag{1.8}$$

where ε is a random disturbance uncorrelated with the regressors, and λ is a $1 \times K$ vector of independent variables. The latent variable y^* is unobserved, but the choice of each national policymaker to define the jurisdiction status is observed.

Estimation proceeds by maximum likelihood, assuming that ε is normally distributed across country observations with mean and variance of ε normalized to 0 and 1. This model can be estimated with a logit model or with a probit model.[3]

Which model can be tested? Given the framework developed in the above theoretical section, a policymaker finds it beneficial to become an OFC country if, describing it in terms of the policymaker's objective function, the expected economic benefits from offering offshore services (banking secrecy) are greater than the relative expected costs associated with the national costs, the international cost of reputation losses, and the possibility of sanctions by the international community.

Therefore, the greater the sensitivity of a country to the benefits, and the lower its sensitivity to the related costs, the greater will be the probability that it will become an OFC country that supplies banking secrecy.

In other words, we can examine the conditions under which becoming an OFC jurisdiction can be convenient for a given country. What are the historical,[4] geographical, institutional, and economic features that increase the probability that a given country will become an OFC? In general we are concerned on the one hand with the features of OFC

[3] The logit model differs from the probit model only in the cumulative distribution function that is used to define choice probabilities. The maximum likelihood estimations were carried out by a packaged-ordered probit and ordered logit commands in STATA. For the sake of completeness we present both the probit and the logit results, given that, as usual, there is little basis for choosing between probit and logit models.

[4] The Netherlands Antilles has been an OFC since 1940. In the 1960s of a number of small island economies, such as Barbados, the Bahamas, the British Virgin Islands and the Cayman Islands, emerged as OFCs; see Gilligan (2004).

countries that help to support the exchange between those jurisdictions, and on the other hand the capital owners of the onshore jurisdictions that favor banking secrecy.

(a) First, the policymaker can choose the offshore status in response to the economic structure of its own country. If a country has relatively scant physical resources to spend in international trade, designing a lax regulation should be a source of national benefit; we know that the optimal degree of banking secrecy increases as the level of national benefits increases. Therefore it is more likely that the country will become an OFC jurisdiction.

In choosing a proxy for national benefit it is better to avoid the use of financial variables, in order to minimize endogeneity problems.[5] The expected sign of the relationship between OFC status and resource endowment is negative.

(b) Second, the policymaker can find it convenient to choose the OFC status if the country already has the necessary institutional endowment. The civic capital endowment is a necessary element that helps to strengthen the relationship between the OFC jurisdiction and its non-resident customers.

The civic capital endowment is a sort of contractual device that is used to reinforce the OFC jurisdiction's commitment toward the onshore capital. The financial attractiveness of an OFC country depends on its effectiveness in protecting property rights. Without such an institutional endowment, a country aspiring to become an OFC jurisdiction has to build it up, addressing costs which are likely to reduce the expected national benefits of being an OFC country. When looking for indicators of institutional endowment, it is once more convenient to avoid any regulatory variable, in order to avoid endogeneity risks.[6]

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[5] Here the approach adopted in Masciandaro (2006) contrasted with Masciandaro and Portolano (2004) and Masciandaro (2005), which performed the analysis of the determinants of being an OFC jurisdiction using as an explanatory variable the foreign banking deposits.

[6] On this point we contrast with the work of Rose and Spiegel (2006), which analyzed the determinants of being an OFC using institutional indicators for tax havens and money launderers – which are based on regulation features – as well as indexes of regulatory and supervisory quality. Other things being equal, the use of these potentially biased variables could explain the fact that Rose and Spiegel find that political stability, and the common law root, have little consistent effect.

Therefore, the higher the existing civic capital, the lower the political investment costs to build it. The expected sign of the relationship between OFC status and social capital endowment is positive.

(c) Third, the policymaker can find OFC status advantageous if its country has social characteristics that shield it, to some extent, from the risks of terrorism and/or organized crime; this reduces the expected pollution costs of having a lax financial regulation. We demonstrated that the optimal degree of banking secrecy increases as the level of crime pollution decreases. The expected sign of the relationship between OFC status and crime pollution risk indexes is negative.
(d) Finally, a policymaker will choose the OFC status if he is relatively indifferent to the international reputation costs. We stressed that the optimal degree of banking secrecy increases as the level of international reputation costs decreases. The expected sign of the relationship between OFC status and international reputation sensitivity indexes is negative.

Now, to perform the empirical analysis it is necessary to have a definition of an OFC country (Table 1.1). The first possibility is to use an institutional (or onshore-made) definition. Different international organizations – the IMF, the OECD, the Financial Stability Forum – have each, over time, provided OFC classifications that partially overlap, based on different criteria.[7] These classifications share a common feature: their source – that is, the international organizations which represent the so-called onshore perspective on regulatory compliance issues.[8]

The second possibility is to adopt a market (or offshore-made) definition. In this respect it is possible to benefit from "The International Financial Centres' Yearbook" (IFCY) data set, which is collected by an independent agency. An important feature of this dataset is that a country is classified as an OFC if – and only if – its own central authorities have approved it. The IFCY classification is particularly consistent with our methodology, as it is based on the policymakers' decisions to be a country that offers offshore services. In any case, in the tests we will also take into account the institutional definitions.

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[7] For more details see Rose and Spiegel (2006).

[8] The nature of the international organizations raised the question of their legitimacy: it has been contended that the major motivation for the fact that advanced economies monitor and assess the banking regimes of OFCs, via organizations such as the OECD or the IMF, is an increasing concern for losses of revenue due to the tax management strategies of high net-worth individuals or companies; for a discussion see Gilligan (2004), and also Harvey (2006).

We start with the market definition, assuming that the OFCs are all the countries and territories grouped in the International Financial Centres' Yearbook (IFCY).[9] Using a worldwide data set on 222 countries (Table 1.1) we have a set of 39 OFCs[10] on which to perform logit analyses. The dependent variable is the binary variable FOC equal to 1 for the 30 offshore jurisdictions, and 0 otherwise.

Indicating the expected signs, the estimated equation is as follows:

$$(BinaryFOC)_i = \alpha_0 + \alpha_1 (LaU) + \beta_1 (PoS) + \beta_2 (CoL)_i - \beta_3 (CrP) + \varepsilon_t$$

with i denoting the country, with $I = 1, \ldots, 222$

The independent variables are the following[11]:

1. *LaU* = *unproductive landuse factor*[12] is an indicator of potential national benefits, given that it signals a low resources endowment;
2. *PoS* = *political stability factor*[13] is an indicator of national endowment (i.e. saving on investment costs);
3. *CoL* = *common law factor* is an indicator of national endowment. Binary variable for the law factor.[14] This is a dummy variable that indicates the common law root, an indicator of actual national endowment (i.e. saving on investment costs);
4. *CrP* = *Crime pollution factor*[15] is an indicator of national costs. Variable for the crime pollution factor, source of national cost.

[9] The IFCY 2006–2007 classified 41 centers and territories. We collected data on 39 FOCs (see Table 1.1).

[10] Given the 41 FOCs of the IFCY 2006, the two missing centers are Labuan and Madeira.

[11] The correlation matrix for the variables is in Table 1.2.

[12] Unproductive landuse: this entry contains the percentage shares of total land area for two different types of unproductive land use: (1) *forests and woodland* – land under dense or open stands of trees; (2) *other* – any land type not specifically mentioned among the productive land use (arable land : land cultivated for crops that are replanted after each harvest, such as wheat, maize and rice; permanent crops – land cultivated for crops that are not replanted after each harvest, such as citrus, coffee, and rubber; permanent pastures – land permanently used for herbaceous forage crops, such as urban areas). *Source*: Central Intelligence Agency, World Facts Book, 2006.

[13] Kaufmann et al. (2003) and subsequent updating. See World Bank. In the cases of overseas territories (12 on 200) we postulated the same political stability of the mother country. In the case of the Vatican we used the maximum value of stability (2.5).

[14] Beck et al. (2001), La Porta et al. (1997). The binary variable takes value 1 if the country adopts a common law jurisdiction, 0 otherwise.

[15] Organized crime index: binary variable = 1 if there is drug production and/or drug markets in the country, 0 otherwise (*Source*: CIA, 2006). The size of the drug

Table 1.1 Countries' sample: offshore* and onshore

Afghanistan	Estonia	Maldives*	Sweden
Albania	Ethiopia	Mali	Switzerland
Algeria	Falkland Islands	Malta*	Syria
Andorra	Faroe Islands	MARSHALL ISLANDS*	Taiwan
Angola	Fiji	Martinique	Tajikistan
Anguilla	Finland	Mauritania	Tanzania
American Samoa	France	Mauritius*	Thailand
ANTIGUA & BARBUDA*	French Polynesia	Mexico	Timor, East
Argentina	Gabon	Micronesia	Togo
Armenia	Gambia	Moldova	Tonga
ARUBA*	Georgia	MONACO*	Trinidad & TOBAGO*
Australia	Germany	Mongolia	Tunisia
Austria	Ghana	MONTSERRAT*	Turkey
Azerbaijan	Gibraltar*	Morocco	Turkmenistan
Bahamas*	Greece	Mozambique	Turks and Caicos*
Bahrain*	Grenada	Myanmar	Tuvalu
Bangladesh	Guadaloupe	Namibia	Uganda
Barbados*	Guam	Nepal	Ukraine
Belarus	Guatemala	Netherlands	United Arab Emirates
Belgium	Guernsey*	Netherlands Antilles*	United Kingdom
Belize*	Guinea	New Caledonia	Uruguay
Benin	Guinea-Bissau	New Zealand	USA
Bermuda *	Guyana	Nicaragua	Uzbekistan
Bhutan	Haiti	Niger	Vanuatu*
Bolivia	Honduras	Nigeria	Vatican
Bosnia	Hong Kong	North Korea	Venezuela
Botswana	Hungary	Norway	Vietnam
Brazil	Iceland	Oman	Wallis & Futuna
British Virgin islands*	India	Pakistan	Western Samoa
Brunei*	Indonesia	Palau	Yemen
Bulgaria	Iran	Palestinian Territory (Gaza Strip)	Yugoslavia
Burkina Faso	Iraq	Panama*	Zambia
Burundi	Ireland	Papua New Guinea	Zimbabwe
Cambodia	Isle of Man*	Paraguay	
Cameroon	Israel	Peru	
Canada	Italy	Philippines	
Cape Verde	Jamaica	Poland	
Cayman Islands*	Japan	Portugal	

(*Continued*)

Table 1.1 Continued

Central African Rep.	Jersey*	PUERTO RICO*
Chad	Jordan	Qatar*
Chile	Kazakhstan	Reunion
China	Kenya	Romania
Colombia	Kiribati	Russia
Comoros Islands	Kuwait	Rwanda
Congo Republic	Kyrgyz Republic	San Marino
Congo, Democratic Republic of	Laos	Sao Tomé and Principe
COOK ISLANDS*	Latvia	Saudi Arabia
Costa Rica	Lebanon	Senegal
Cote d'Ivoire	Lesotho	Seychelles*
Croatia	Liberia*	Sierra Leone
Cyprus*	Libya	Singapore*
Czech Republic	Liechtenstein*	Slovak Republic
Cuba	Lithuania	Slovenia
Denmark	Luxembourg	Solomon Islands
Djibuti	Macau	Somalia
Dominica	Macedonia	South Africa
Dominican Republic	Madagascar	South Korea
Ecuador	Malawi	Spain
Egypt	Malaysia	Sri Lanka
El Salvador		St Helena
Equatorial Guinea		ST KITTS & NEVINE*
Eritrea		St Lucia*
		St Pierre & Michelon
		St Vincent & GrenADINE*
		Sudan
		Surinam
		Swaziland

market dimension is evidently an indirect and imperfect indicator of the organized crime problem. At the same time, the drug market has given organized crime its massive resources. We used also a terrorism and organized crime index: we built this variable by summing two separate variables for each country: organized crime dummy = 1 if there is drug production and/or drug markets in the country, 0 otherwise (*Source*: CIA); Normalized terrorism indicator = average number of terrorist episodes in the country (years 1968–91)/max average number of terrorist episodes in a country (1968–91); the terrorism indicator therefore ranges from 0 to 1 (*Source*: Blomberg et al. 2002). Consequently, our index ranges from 0 to 2.

Table 1.2 Correlation matrix, main variables

	Offshore	**Landuse**	**Polstab**	**Common**	**Crime**	**Imfquota**	**English**	**Indyear**	**Area**	**Finlat**
Offshore	1.0000									
Landuse	0.2198	1.0000								
Polstab	0.2969	0.2804	1.0000							
Common	0.4085	0.2255	0.1187	1.0000						
Crime	–0.3097	0.0605	–0.1256	–0.2113	1.0000					
Imfquota	–0.1713	0.0924	0.0919	–0.1146	0.3638	1.0000				
English	0.3641	0.2126	0.1184	0.6464	–0.2079	–0.0961	1.0000			
Indyear	0.1139	–0.0697	–0.1898	0.1853	–0.2019	–0.3330	0.1817	1.0000		
Area	–0.1442	–0.0672	–0.1003	–0.0371	0.2222	0.4601	–0.0008	0.0023	1.0000	
Finlat	–0.0118	0.0201	–0.0784	0.2317	–0.2494	–0.1740	0.1795	0.1720	0.0287	1.0000

The results in Table 1.3 signal that the probability of being an OFC jurisdiction depends on the specific endowments of the country concerned. The higher the level of political stability, and the lower the degree of crime pollution, the more this probability increases. This is also the case when the jurisdiction adopts the common law. Furthermore, a low resource endowment has a weak effect on the likelihood of being an OFC.

To check the robustness of the results obtained, it is possible to modify the dependent variable by using the institutional definition of OFC jurisdiction[16] (37 countries). The two groups of OFCs are listed in Table 1.4. The two variables are correlated (see Table 1.10 where the correlation coefficient is 0.54). Table 1.5 reports the logit estimates. All the results are confirmed except that of the pollution crime effect. The inverse relationship between OFC status and crime-pollution risk still holds, but it is not statistically significant.

Furthermore, it is possible to use one more variable (core definition) listing of the 21 OFCs classified both in the market group and in the institutional group (Table 1.4). The market variable and the core variable are highly correlated (the correlation coefficient is 0.79). All the results are confirmed and now the land-use variable also becomes significant (Tables 1.5 and 1.6).

The market definition and the institutional definition share two common features. First of all, in using a binary variable we are assuming that the policymaker does not select the level of regulation laxity, but simply decides between the two statuses: onshore or offshore jurisdiction, which means offering or not offering banking secrecy.

If we think that the policymaker chooses a level of offshore-service supply, we can try to set a different level of offshore attitude for a given country. If we have an indicator of OFC attitude, the model can be estimated with an ordered logit model or with an ordered probit model. Second, each binary variable depends on one source of information only: market (offshore) evaluation or (onshore) institutional evaluation.

The solution to the first problem is to build up an indicator of OFC attitude. Using the institutional sources, an offshore attitude index is created, thus implementing a two-stage process.

First stage: for each country a check is made as to whether it has been a member of both OECD and FATF (strong onshore attitude, or minimum

[16] Rose and Spiegel (2006) build up an OFC classification by gathering data from three sources: FSF (2000), IMF (1999) and Errico and Musalem (1999).

Table 1.3 Logit estimates with FOC (market definition) as the dependent variable

Variables	**Coef.**	**Std. err.**	***P > z***
LaU	0.0095569	0.0080062	0.233
PoS	1.096989	0.3517264	0.002***
CoL	1.86047	0.4591024	0.000***
CrP	–2.120518	0.6577499	0.001***
Constant	0.6292888	3.100557	0.000***
Number of obs	222		
LR chi2(4)	69.22		
Prob > chi2	0.0000		
Log likelihood	–65.416408		
Pseudo R2	0.3460		

Note: ***indicates statistical significance at 1 percent; **indicates statistical significance at 5 percent; *indicates statistical significance at 10 percent.

Table 1.4 Offshore financial centres: market definition and institutional definition

Countries	**Market definition**	**Institutional definition**	**Core definition**
Andorra		X	
Antigua and Barbuda	X		
Aruba	X	X	X
Bahamas	X	X	X
Bahrain	X	X	X
Barbados	X	X	X
Belize	X	X	X
Bermuda	X	X	X
British Virgin Islands	X	X	X
Brunei	X		
Cayman Islands	X	X	X
Cook Islands	X		
Costa Rica		X	
Cyprus	X	X	X
Dominica		X	
Dubai	X		
Gibraltar	X	X	X
Guernsey	X	X	X
Hong Kong		X	
Isle of Man	X	X	X
Israel		X	
Jersey	X	X	X
Kuwait		X	
Labuan (*)	X		
Lebanon		X	
Liberia	X	X	X

(*Continued*)

Table 1.4 Continued

Countries	Market definition	Institutional definition	Core definition
Liechtenstein	X	X	X
Macau		X	
Malaysia		X	
Madeira (*)	X		
Maldives	X		
Malta	X	X	X
Marshall Islands	X	X	X
Mauritius	X	X	X
Monaco	X	X	X
Montserrat	X		
Morocco		X	
Netherlands Antilles	X	X	X
Oman		X	
Panama	X	X	X
Philippines		X	
Puerto Rico	X		
Qatar	X		
Russia		X	
St Kitts & Nevis	X	X	X
St Lucia	X		
St Vincent & Grenadines	X		
Samoa	X		
Seychelles	X		
Singapore	X	X	X
Trinidad & Tobago	X		
Turks & Caicos Islands	X	X	X
United Arab Emirates		X	
Uruguay		X	
Vanuatu	X		

Note: (*) = asterisks represent countries which are not in our sample.

Table 1.5 Logit estimates with FOC (institutional definition) as the dependent variable

Variables	Coef.	Std. err.	*P* > *z*
LaU	0.0047249	0.007288	0.517
PoS	0.5158044	0.2332191	0.027**
CoL	1.01468	0.3858897	0.009***
CrP	–0.3583456	0.401685	0.372
Constant	–2.244937	0.5051029	0.000***
Number of obs	222		
LR chi2(4)	20.33		
Prob > chi2	0.0004		
Log likelihood	–94.543619		
Pseudo R2	0.097		

Note: ***indicates statistical significance at 1 percent; **indicates statistical significance at 5 percent; *indicates statistical significance at 10 percent.

Table 1.6 Logit estimates with FOC (core definition) as the dependent variable

Variables	Coef.	Std. err.	*P* > *z*
LaU	0.0190513	0.0098211	0.052**
PoS	0.6708841	0.3701601	0.070*
CoL	1.453721	0.5081013	0.004***
CrP	–1.465348	0.6630337	0.027**
Constant	–3.92522	0.7705489	0.000***
Number of obs	222		
LR chi2(4)	39.09		
Prob > chi2	0.0000		
Log likelihood	–58.58876		
Pseudo R2	0.2501		

Note: ***indicates statistical significance at 1 percent; **indicates statistical significance at 5 percent; *indicates statistical significance at 10 percent.

level of offshore attitude[17]) (Table 1.7), or if it has been listed in any of the three types of OFC lists: the Financial Stability (FSF) list,[18] the OECD list,[19] the FATF list[20] (Table 1.8). Basically, the degree of offshore attitude depends on the amount of times the country is present in three different blacklists (this number ranges from 0 to 3).

Second stage: numerical values are assigned to each level of offshore attitude: 0 if a country shows a strong onshore attitude, 1 if a country doesn't show a strong onshore attitude and at the same time it hasn't been in any of blacklists; 2, 3 and 4 if a country has been present in

[17] In this first step we do not consider membership of the FSF, where the country representation is small and heterogeneous. The FSF has a total of 40 members comprising: chairman (1), representatives of national authorities (25), international financial institutions (6), international regulatory and supervisory groupings (6) and committees of central bank experts (2). Of the national authority representatives: the G7 member countries each supply three (from their treasury, central bank and financial supervisory agency); and Australia, Hong Kong, Netherlands and Singapore each supply a single representative. At the end of the day, only nine countries that are already OECD and FATF members are FSF members too. We will use this information below.

[18] In May 2000 the FSF grouped the jurisdictions it considered to have significant offshore financial activities into three categories, based on perceptions of their quality of supervision and degree of regulatory cooperation. We consider the countries listed in Group III (lowest quality).

[19] The OECD produced two lists (May 2000, April 2002). See OECD (2000, 2001, 2002).

[20] From June 2000 to February 2006 the FATF produced seven annual lists. See FATF (2000) and the subsequent reports.

Table 1.7 Onshore attitude: data sources

Countries	FSF	OECD	FATF
Australia	X	X	X
Austria		X	X
Belgium		X	X
Canada	X	X	X
Czech Republic		X	
Denmark		X	X
Finland		X	X
France	X	X	X
Germany	X	X	X
Greece		X	X
Hungary		X	
Iceland		X	X
Ireland		X	X
Italy	X	X	X
Japan	X	X	X
Luxembourg		X	X
Mexico		X	X
Netherlands		X	X
New Zealand		X	X
Norway		X	X
Poland		X	
Portugal		X	X
Slovak Republic		X	
South Korea		X	
Spain		X	X
Sweden		X	X
Switzerland		X	X
Turkey		X	X
United Kingdom	X	X	X
United States	X	X	X

one, two, or three blacklists,[21] respectively. Table 1.9 shows the offshore attitude index (OAI).

Taking the offshore attitude index as a dependent variable, it is possible to solve the second problem. Since we have used both institutional and market information to construct the indicator, it is simple to check, for each country, whether it is present in what we called the market list of OFCs (Table 1.4), adding 1 if the answer is positive, 0 otherwise. In

[21] In the case of Luxembourg (member of OECD and FAFT, but also listed in the OECD tax havens list) the OAI is 1.

Table 1.8 Offshore attitude index: data sources

Countries	FSF list	OECD list	FATF list
Andorra		X	
Anguilla	X	X	
Antigua and Barbuda	X	X	
Aruba	X	X	
Bahamas	X	X	X
Bahrain		X	
Barbados		X	
Belize	X	X	
Bermuda			
British Virgin Islands	X	X	
Brunei			
Cayman Islands	X	X	
Cook Islands	X	X	X
Costa Rica	X		
Cyprus	X	X	
Dominica		X	X
Dubai			
Egypt		X	
Gibraltar		X	
Grenada		X	X
Guatemala			X
Guernsey		X	
Hungary			X
Hong Kong			X
Isle of Man		X	
Indonesia			X
Israel			X
Jersey		X	
Kuwait			
Labuan (*)			
Lebanon	X		X
Liberia	X	X	
Liechtenstein	X	X	X
Luxembourg		X	
Macau			
Malaysia			
Madeira (*)			
Maldives		X	
Malta			
Marshall Islands	X	X	X
Mauritius	X		
Myanmar			X
Monaco		X	
Montserrat		X	

(*Continued*)

Table 1.8 Continued

Countries	FSF list	OECD list	FATF list
Morocco			
Nauru	X	X	X
Niue (*)	X	X	X
Netherlands Antilles	X	X	
Nigeria			X
Oman			
Panama	X	X	X
Philippines			X
Puerto Rico			
Qatar			
Russia			X
St Kitts & Nevis	X	X	X
St Lucia	X	X	
St Vincent & Grenadines	X	X	X
Samoa	X	X	
Seychelles	X	X	
Singapore			
Trinidad & Tobago			
Turks & Caicos Islands	X	X	
Ukraine			X
United Arab Emirates			
Uruguay			
Vanuatu	X	X	

Note: (*) = asterisks represent countries which are not in our sample.

this manner it is possible to obtain an overall offshore attitude index (OOAI). Table 1.9 shows the overall offshore attitude index, while the correlation matrix of the offshore indicators is presented in Table 1.10. From a descriptive point of view let us stress that the pure institutional definition displays no high correlation with other OFC indexes.

Using the two offshore attitude indexes for the regressions, the crime pollution effect and the law effect are confirmed, while the land-use variable has the right sign, but the coefficient is not statistically significant (Tables 1.11 and 1.12). The political stability factor exhibits the wrong sign and/or no robustness of the effect.

In the multinomial ordered models, the impact of a change in an explanatory variable on the estimated probabilities of the highest and lowest of the order classifications – in our case the maximum level of offshore attitude and the onshore status – is unequivocal: if β_j is positive,

Table 1.9 Offshore attitude indexes

Countries	Offshore attitude index	Overall offshore attitude index	Overall onshore offshore attitude index
Afghanistan	1	1	3
Albania	1	1	3
Algeria	1	1	3
Andorra	2	2	4
Angola	1	1	3
Anguilla	3	3	5
American Samoa	1	1	3
Antigua & Barbuda	3	4	6
Argentina	1	1	3
Armenia	1	1	3
Aruba	3	4	6
Australia	0	0	0
Austria	0	0	1
Azerbaijan	1	1	3
Bahamas	4	5	7
Bahrain	2	3	5
Bangladesh	1	1	3
Barbados	2	3	5
Belarus	1	1	3
Belgium	0	0	1
Belize	3	4	6
Benin	1	1	3
Bermuda	1	2	4
Bhutan	1	1	3
Bolivia	1	1	3
Bosnia	1	1	3
Botswana	1	1	3
Brazil	1	1	3
British Virgin Islands	3	4	6
Brunei	1	2	4
Bulgaria	1	1	3
Burkina Faso	1	1	3
Burundi	1	1	3
Cambodia	1	1	3
Cameroon	1	1	3
Canada	0	0	0
Cape Verde	1	1	3
Cayman Islands	3	4	6
Central African Rep.	1	1	3
Chad	1	1	3
Chile	1	1	3
China	1	1	3

(*Continued*)

Table 1.9 Continued

Countries	Offshore attitude index	Overall offshore attitude index	Overall onshore offshore attitude index
Colombia	1	1	3
Comoros Islands	1	1	3
Congo Republic	1	1	3
Congo, Democratic Republic of	1	1	3
Cook Islands	3	4	6
Costa Rica	2	2	4
Cote d'Ivoire	1	1	3
Croatia	1	1	3
Cyprus	3	4	6
Czech Republic	1	1	1
Cuba	1	1	3
Denmark	0	0	1
Djibuti	1	1	3
Dominica	3	3	5
Dominican Republic	1	1	3
Ecuador	1	1	3
Egypt	2	2	4
El Salvador	1	1	3
Equatorial Guinea	1	1	3
Eritrea	1	1	3
Estonia	1	1	3
Ethiopia	1	1	3
Falkland Islands	1	1	3
Faroe Islands	1	1	3
Fiji	1	1	3
Finland	0	0	1
France	0	0	0
French Polynesia	1	1	3
Gabon	1	1	3
Gambia	1	1	3
Georgia	1	1	3
Germany	0	0	0
Ghana	1	1	3
Gibraltar	2	3	5
Greece	0	0	1
Grenada	3	3	5
Guadeloupe	1	1	3
Guam	1	1	3
Guatemala	2	2	4
Guernsey	2	2	5
Guinea	1	1	3
Guinea-Bissau	1	1	3

Table 1.9 Continued

Countries	Offshore attitude index	Overall offshore attitude index	Overall onshore offshore attitude index
Guyana	1	1	3
Haiti	1	1	3
Honduras	1	1	3
Hong Kong	1	1	3
Hungary	2	2	3
Iceland	0	0	1
India	1	1	3
Indonesia	2	2	4
Iran	1	1	3
Iraq	1	1	3
Ireland	0	0	1
Isle of Man	2	3	5
Israel	2	2	4
Italy	0	0	0
Jamaica	1	1	3
Japan	0	0	0
Jersey	2	3	5
Jordan	1	1	3
Kazakhstan	1	1	3
Kenya	1	1	3
Kiribati	1	1	3
Kuwait	1	1	3
Kyrgyzstan	1	1	3
Laos	1	1	3
Latvia	1	1	3
Lebanon	3	3	5
Lesotho	1	1	3
Liberia	3	4	6
Libya	1	1	3
Liechtenstein	4	5	7
Lithuania	1	1	3
Luxembourg	1	1	2
Macau	1	1	3
Macedonia	1	1	3
Madagascar	1	1	3
Malawi	1	1	3
Malaysia	1	1	3
Maldives	2	3	5
Mali	1	1	3
Malta	1	2	4
Marshall Islands	4	5	7
Martinique	1	1	3

(*Continued*)

Table 1.9 Continued

Countries	Offshore attitude index	Overall offshore attitude index	Overall onshore offshore attitude index
Mauritania	1	1	3
Mauritius	2	3	5
Mexico	0	0	1
Micronesia	1	1	3
Moldova	1	1	3
Monaco	2	3	5
Mongolia	1	1	3
Montserrat	2	3	5
Morocco	1	1	3
Mozambique	1	1	3
Myanmar (Burma)	2	2	3
Namibia	1	1	3
Nauru	4	4	6
Nepal	1	1	3
Netherlands	0	0	1
Netherlands Antilles	3	4	6
New Caledonia	1	1	3
New Zealand	0	0	1
Nicaragua	1	1	3
Niger	1	1	3
Nigeria	2	2	4
North Korea	1	1	3
Norway	0	0	1
Oman	1	1	3
Pakistan	1	1	3
Palau	1	1	3
Palestinian Territory (Gaza Strip)	1	1	3
Panama	4	5	7
Papua New Guinea	1	1	3
Paraguay	1	1	3
Peru	1	1	3
Philippines	1	1	4
Poland	1	1	2
Portugal	0	0	1
Puerto Rico	1	2	4
Qatar	1	2	4
Reunion	1	1	3
Romania	1	1	3
Russia	2	2	4
Rwanda	1	1	3
San Marino	1	1	3
Sao Tomé and Principe	1	1	3

Table 1.9 Continued

Countries	Offshore attitude index	Overall offshore attitude index	Overall onshore offshore attitude index
Saudi Arabia	1	1	3
Senegal	1	1	3
Seychelles	3	4	6
Sierra Leone	1	1	3
Singapore	1	2	4
Slovak Republic	1	1	2
Slovenia	1	1	3
Solomon Islands	1	1	3
Somalia	1	1	3
South Africa	1	1	3
South Korea	1	1	2
Spain	0	0	1
Sri Lanka	1	1	3
St Helena	1	1	3
St Kitts & Nevine	4	5	7
St Lucia	3	4	6
St Pierre &Michelon	1	1	3
St Vincent & Grenadine	4	5	7
Sudan	1	1	3
Suriname	1	1	3
Swaziland	1	1	3
Sweden	0	0	1
Switzerland	0	0	1
Syria	1	1	3
Taiwan	1	1	3
Tajikistan	1	1	3
Tanzania	1	1	3
Thailand	1	1	3
Timor, East	1	1	3
Togo	1	1	3
Tonga	1	1	3
Trinidad and Tobago	1	2	4
Tunisia	1	1	3
Turkey	0	0	1
Turkmenistan	1	1	3
Turks and Caicos	3	4	6
Tuvalu	1	1	3
Uganda	1	1	3
Ukraine	2	2	4
United Arab Emirates	1	1	3
United Kingdom	0	0	0
Uruguay	1	1	3

(*Continued*)

Table 1.9 Continued

Countries	Offshore attitude index	Overall offshore attitude index	Overall onshore offshore attitude index
United States	0	0	0
Uzbekistan	1	1	3
Vanuatu	3	4	6
Vatican	1	1	3
Venezuela	1	1	3
Vietnam	1	1	3
Wallis & Futuna	1	1	3
Western Samoa	3	4	6
Yemen	1	1	3
Yugoslavia (Serbia)	1	1	3
Zambia	1	1	3
Zimbabwe	1	1	3

Table 1.10 Correlation matrix, OFC indicators

	offshore	offross	offcore	offatt	totoffatt	onoffat	totonoat
offshore	1.0000						
offross	0.5451	1.0000					
offcore	0.7966	0.7228	1.0000				
offatt	0.6552	0.5038	0.5739	1.0000			
totoffatt	0.8150	0.5520	0.6846	0.9696	1.0000		
onoffat	0.5581	0.4582	0.4835	0.9254	0.8815	1.0000	
totonoat	0.7275	0.5239	0.6117	0.9395	0.9457	0.9753	1.0000

for example, it means that an increase in the value of x_j increases the probability of having strong OFC status. This status is more likely if the degree of crime pollution lowers and if the jurisdiction adopts the common law.

Furthermore, it is useful to use all available information to further enrich the indexes, assuming also that the choice of a given country to be an onshore jurisdiction can be affected by how many memberships the country has with regard to other international organizations – the FSF, the OECD and the FATF – and promoting the name and shame approach (this number ranges from 0 to 3 as well) (Table 1.7).

Now it is easy to assign numerical values to each level of offshore propensity in the following way: 0, 1 and 2 if a country is a member of

Table 1.11 Ordered logit estimates with OAI index

Variables	Coef.	Std. err.	*P* > *z*
LaU	0.0089733	0.0060733	0.140
PoS	–0.3083917	0.1594458	0.053**
CoL	1.143847	0.340719	0.001***
CrP	–1.468349	0.3429843	0.000***
Number of obs	222		
LR chi2(4)	41.95		
Prob > chi2	0.0000		
Log likelihood	–208.93514		
Pseudo R2	0.0912		

Note: ***indicates statistical significance at 1 percent; **indicates statistical significance at 5 percent.

Table 1.12 Ordered logit estimates with OOAI index

Variables	Coef.	Std. err.	*P* > *z*
LaU	0.0082135	0.0058699	0.162
PoS	–0.1845479	0.1553643	0.235
CoL	1.290667	0.3325079	0.000***
CrP	–1.487754	0.333671	0.000***
Number of obs	222		
LR chi2(4)	49.08		
Prob > chi2	0.0000		
Log likelihood	–236.29629		
Pseudo R2	0.0941		

Note: ***indicates statistical significance at 1 percent.

three, two or one international forums; 3 if a country is neither a forum member nor present in any blacklist; 4, 5 and 6 if a country has been present in one, two, or three blacklists, respectively. Additionally, if a country is present in the market list of OFCs we add 1, and we add 0 otherwise. Table 1.9 shows the overall onshore offshore attitude index (OOOAI). For the model with the last attitude index as dependent variable, all the previous results are confirmed (Table 1.13).

Finally, it is possible to capture the possible effect of the international forums' accusations in determining the policymakers' decisions by testing the following equation:

$$(BinaryFOC)_i = \alpha_0 + \alpha_1 (LaU) + \beta_1 (PoS) + \beta_2 (CoL)_i - \beta_3 (CrP) - \gamma_1 (Ibs) + \varepsilon_t$$

Table 1.13 Ordered logit estimates with OOOAI index

Variables	Coef.	Std. err.	$P > z$
LaU	0.0081296	0.0058157	0.162
PoS	–0.2648776	0.1525893	0.083**
CoL	1.362092	0.3362281	0.000***
CrP	–1.628895	0.3326206	0.000***
Number of obs	222		
LR chi2(4)	56.44		
Prob > chi2	0.0000		
Log likelihood	–266.56866		
Pseudo R2	0.0957		

Note: ***indicates statistical significance at 1 percent; **indicates statistical significance at 5 percent; *indicates statistical significance at 10 percent.

where the new independent variable is the following:

5. *Ibs* = *International blame sensibility* (*IBS*) *factor* can be an indicator of reputational costs sensitivity. For each country we use the IMF members' quotas as proxies of the developed country level.[22]

The results in Table 1.14 confirm that the probability of being an OFC jurisdiction depends on specific country endowments. This probability tends to be higher when: the level of political stability is higher, the country's international voice is lower, and when the jurisdiction adopts the common law. The land-use variable and the degree of crime pollution are not statistically significant in this specification, although the relationship signs are the right ones.

To check the robustness of the results, the institutional and the core definitions of an OFC jurisdiction have been used (Tables 1.15 and 1.16).

[22] Each member country of the IMF is assigned a quota, based on its relative size in the world economy. Various economic factors are considered in determining changes in quotas, including GDP, current account transactions, and official reserves. Among other things, the quota determines a country's voting power in IMF decisions. Therefore this variable can have a twofold meaning: (a) membership strength (voice) in the main international financial forum, which we consider to be a proxy of the international sanction sensibility; (b) level of economic development, given the direct relationship, for each country, between IMF quota and GNP (in our sample the correlation index is 0.94). On (a) the variable is logically better than an IMF membership variable (binary variable = 1 if a country is a member, 0 otherwise); on (b) the variable is preferable to the classical indicator of economic development – GNP per capita – for endogeneity reasons. Furthermore, we use one more indicator of international blame sensitivity (see below).

Table 1.14 Logit estimates with international blame sensibility

Variables	**Coef.**	**Std. err.**	*P* > *z*
LaU	0.0079926	0.0081181	0.325
PoS	1.14543	0.3688544	0.002***
CoL	1.879699	0.4662643	0.000***
CrP	–0.8671785	0.7562294	0.252
Ibs	–4.08239	2.416596	0.091*
Constant	–2.879099	0.6546416	0.000**
Number of obs	222		
LR chi2(5)	75.50		
Prob > chi2	0.0000		
Log likelihood	–62.273119		
Pseudo R2	0.3774		

Note: ***indicates statistical significance at 1 percent; **indicates statistical significance at 5 percent; *indicates statistical significance at 10 percent.

Table 1.15 Logit estimates with (institutional) OFC definition

Variables	**Coef.**	**Std. err.**	*P* > *z*
LaU	0.0048146	0.0073155	0.510
PoS	0.5663579	0.2376353	0.017***
CoL	1.042261	0.3909649	0.008***
CrP	–0.0060774	0.4532607	0.989
Ibs	–0.4809502	0.3838007	0.210
Constant	–2.266541	0.5139565	0.000***
Number of obs	222		
LR chi2(5)	23.19		
Prob > chi2	0.0003		
Log likelihood	–93.113929		
Pseudo R2	0.1107		

Note: ***indicates statistical significance at 1 percent.

Table 1.16 Logit estimates with (core) OFC definition

Variables	**Coef.**	**Std. err.**	***P*** > *z*
LaU	0.0177903	0.0098909	0.072*
PoS	0.7325415	0.3911322	0.061*
CoL	1.472575	0.5164422	0.004***
CrP	–0.2132174	0.7880595	0.787
Ibs	–4.387184	2.836849	0.122
Constant	–3.744326	0.79984	0.000***
Number of obs	222		
LR chi2(5)	44.76		
Prob > chi2	0.0000		
Log likelihood	–55.752043		
Pseudo R2	0.2864		

Note: ***indicates statistical significance at 1 percent; **indicates statistical significance at 5 percent; *indicates statistical significance at 10 percent.

All the results are confirmed except the international blame sensitivity effect, which is not statistically significant. Finally, using the three offshore attitude indexes, we find that all the key independent variables, except for the political stability effect, have statistically and economically significant effects (Tables 1.17, 1.18 and 1.19).

How to interpret the empirical results? In the theoretical section we argued that when a country is able to internalize the benefits and to externalize the costs associated with financial laxity, it is more likely to become a BS country because it has built up a long-term relationship with foreign capital. This ability to establish a stable relationship depends on a country's specific characteristics, which can be regarded as the credible contractual devices that will govern the relationship. We tested our theoretical results using the OFCs sample.

The first contractual device for an OFC jurisdiction seems to be its dependence on income generated by the supply of offshore services. A country which has a level of income that is dependent on the laxity in financial regulation will be committed to offering banking secrecy services.

In this respect, other than the natural endowment variables,[23] the direct relationship between a country's OFC attitude and international blame sensitivity, can be interpreted as signals of the presence of such a device.[24] A country might need to fight vigorously in order to preserve its level of income, or, as it has been suggested, it would never be forced to depend on "sugar and tourism."[25] Countermeasures taken by the onshore community may drive it to aggressively defend its position, and to be insensitive to international accusations. This relationship holds whatever the hypothesis on the policymaker's behavior.

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[23] Other than the unproductive land factor we can test other indicators of national endowment. First of all a land factor that considers the country total area was used. Then it was checked for an openness factor, taking into consideration the country's coastline (for the 42 landlocked countries the default value was 10 km). Finally, it an openness land factor was proposed by multiplying the land factor with the openness factor. In all three cases, the expected sign of relationship with the OFC status was negative. The expectations were confirmed.

[24] This was used as alternative indicator of international blame sensitivity an international organization membership (IOM) index: for each country we calculated the number of full memberships of international organizations. The expected sign of the relationship with the OFC status is negative: the regressions (Table 1.18 reports only the logit ones) confirmed that the IOM index replicates the IBS Factor.

[25] Harvey (2006).

Table 1.17 Ordered logit estimates with OAI index

Variables	Coef.	Std. err.	*P* > *z*
LaU	0.0108839	0.006347	0.086*
PoS	–0.1919811	0.1688437	0.256
CoL	1.278912	0.347233	0.000***
CrP	–0.7653881	0.3716534	0.039**
Ibs	–1.360489	0.3139658	0.000***
Number of obs	222		
LR chi2(5)	80.44		
Prob > chi2	0.0000		
Log likelihood	–189.68865		
Pseudo R2	0.1749		

Note: ***indicates statistical significance at 1 percent; **indicates statistical significance at 5 percent; *indicates statistical significance at 10 percent.

Table 1.18 Ordered logit estimates with OOAI index

Variables	Coef.	Std. err.	*P* > *z*
LaU	0.0098848	0.0060928	0.105*
PoS	–0.0598355	0.1647227	0.716
CoL	1.426736	0.3377216	0.000***
CrP	–0.8047397	0.361051	0.026**
Ibs	–1.376541	0.3113482	0.000***
Number of obs	222		
LR chi2(5)	89.15		
Prob > chi2	0.0000		
Log likelihood	–216.26166		
Pseudo R2	0.1709		

Note: ***indicates statistical significance at 1 percent; **indicates statistical significance at 5 percent; *indicates statistical significance at 10 percent.

Table 1.19 Ordered logit estimates with OOOAI index

Variables	Coef.	Std. err.	*P* > *z*
LaU	0.0102991	0.0060204	0.087*
PoS	–0.1653118	0.1613776	0.306
CoL	1.453313	0.3390438	0.000***
CrP	–0.9431159	0.3592867	0.009***
Ibs	–1.587365	0.2988194	0.000***
Number of obs	222		
LR chi2(5)	112.37		
Prob > chi2	0.0000		
Log likelihood	–238.60841		
Pseudo R2	0.1906		

Note: ***indicates statistical significance at 1 percent; **indicates statistical significance at 5 percent; *indicates statistical significance at 10 percent.

A stable political environment seems to be another possible commitment device. A banana republic would face huge difficulties in making a credible commitment not to switch course in the middle of the contract. For example, the mere threat that a coup d'état might at any moment overthrow the current regime makes the commitment non-credible. This commitment device seems to be relevant if the policymaker simply chooses between the two states of offshore or onshore jurisdiction.

Application of the common law tradition seems to be a strong institutional device as well. The law and finance literature[26] proves the existence of a strong relationship between market-oriented financial systems and common law jurisdictions. It has been maintained that English law provides better support for individual private operations, while French and German codes are characterized more by State dominance. Therefore, a common law framework can be more consistent with the arm's length relationships that characterize the global financial markets, whatever the hypothesis on the policymaker's behavior.

Other structural endowments that could be considered as commitment devices have been tested as well: English language,[27] former colony status,[28] geographical location.[29] These variables are not statistically significant, despite the fact that they exhibit the right signs.

Finally, a low level of crime seems to be a robust commitment device. The policymaker must consider the possibility that domestic social damage – and subsequent political costs – might occur, since the country

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[26] Among others, La Porta et al. (1997).

[27] A binary variable that takes value 1 was used if the country's official language is English, 0 otherwise. The expected sign of the relationship between offshore attitude and English language is positive.

[28] For each country it has been used as an indicator – albeit not perfect – of former colony status the year of independence. When the territory is not independent the default value was the 2006 year. The expected sing of the relationship between offshore attitude and independence year is positive.

[29] Rose and Spiegel 2006 claimed that geography plays a significant role in the determination of financial cross-border flows. Given the geographical coordinates of the three main financial centers – London, New York and Tokyo – three indicators of geographical position were proposed for each country: a financial latitude index, measuring the minimum absolute distance from a financial latitude band (upper limit: London 54 N; lower limit: New York 34 N, given that Tokyo = 36 N); a financial longitude index, taking the minimum value, given the absolute distance from London (2 W), New York (97 W), Tokyo (138 E); an overall geographical index, taking the product: financial latitude index * financial longitude index. In all three cases the expected sign of the relationship with the OFC status is negative (proximity).

could be used as a growth engine for criminal organizations. It is obvious that the less the OFC country registers the actual or potential presence of criminal or terrorist organizations internally, the lower the perceived costs of crime, and the higher the OFC status credibility.

All in all, the empirical exploration of the supply drivers of offshore services shows that the specific features of a given country are likely to be crucial.

This suggests to us that, in designing international policies that aim to reduce banking secrecy – a field where reputation is one of the main weapons – policymakers have to be very cautious in taking initiatives that may affect the reputation of the agents involved. There is a high risk of false "negative" cases: that is, cases of including countries in a discriminating list without stable and consistent roots. The costs of such an error appear to be large: not only for the countries involved, but also for the reputation of the list itself.

The existence of very deep-rooted incentives to be a BS country suggests that the international effort to create a level playing field is more likely to be achieved using a cooperative game between offshore and onshore jurisdictions, rather than a crude name and shame approach.

If the name and shame approach does not influence the policymakers' cost-benefit analysis, it will be ineffective, and the regulatory gap will remain stable. If the BS countries, on one side, gain from the growth of the foreign financial flows and yet, on the other side, are relatively immune to the crime pollution costs and insensitive to the international organizations' blame, they will simply perceive the global surveillance programmes as discriminatory practices.

As a consequence, the BS countries are less likely to be cooperative, thus confirming their reputation for having a lax attitude. This will mean that the regulatory gap remains a stable equilibrium outcome, and will increase the likelihood of the false and reluctant friend effects.

1.4 Banking secrecy: white macroeconomics

In Section 1.2 we explored the micro foundations of banking secrecy and in Section 1.3 we commented on empirical tests of our assumptions, using the OFC jurisdictions as a proxy for BS countries.

Given an international demand for hiding flows, we asserted that the supply of banking secrecy depends on the choices of national policymakers regarding the design of financial regulation, taking into account the potential benefits and costs of being more or less compliant with international best practices.

The policymaker weighs the pros and cons of offering banking secrecy, which we capture using, respectively, the parameter m – the benefits of expanding the banking flows and then the "white" aggregate demand via secrecy – and the parameter γ – the relevance of having a national "gray" economy leveraged by the secrecy, which can be in turn a positive or negative incentive for the policymaker, depending on the political and economic features of the country concerned.

How to go ahead with the analysis of the macro effect of banking secrecy? For the sake of simplicity we can split our discussion. First, we start with an economy without the gray sector.

To study the white macroeconomics of banking secrecy we can modify Masciandaro (2000) and use a small open economy framework with perfect flexible exchange rates, capital mobility, and at the same time with imperfections in the markets for goods and services, and in the labor markets as well. We assume a medium-term perspective: that is, we assume that inflation, output growth, and employment can change, while the capital stock is fixed.

All the variables are flows, which are expressed as rates of growth that can assume either positive or negative values. The key macroeconomic endogenous variables are the output growth and the inflation rate. Those variables are obtained from the usual equilibrium mechanism, given the key features of both the aggregate supply and the aggregate demand.

The supply side – that is, the *AS curve* – is basically a price equation based on the markup approach. The bottom line is that inflation can depend on three different drivers: the market of inputs, which means labor markets, given that the capital stock is fixed; the market of outputs, considering the level of competition in the markets of goods and services; uncertainty (i.e. randomness), including exchange rate shocks.

Therefore the inflation path depends on three components: costs (wages), firm market power, and random shocks:

$$\pi = \omega + \left(\frac{M_t - M_{t-1}}{M_{t-1}} \right) + u$$

where π = rate of inflation; ω = wage growth; M_i = markup level in a given year; i and u = uncertainty distribution, which is the distribution of random shocks that can assume positive or negative values and are normally distributed with a mean of 0 and variance equal to 1. Uncertainty produces more inflation, if we assume that each risk-averse

agent makes decisions in order to secure his wealth and/or income situation. With:

$$\frac{M_t - M_{t-1}}{M_{t-1}} = \frac{M_t}{M_{t-1}} - 1 = (\mu - 1)$$

the value $(\mu - 1)$ becomes an indicator of the degree of competition; $\mu > 0$ represents the ratio of the markup levels between two years (i.e. the rent factor). Whatever the measurement of market power, we can assume that $M_i \geq 1$ through normalization. Then:

$$\pi = \omega + (\mu - 1) + u \tag{1.9}$$

The stability of the market power of the firms – which is $M_{t-1} = M_t$ – means lower inflation rates, as well as increases in the competition, which is $M_{t-1} > M_t$.

Therefore, if other things are equal, and given the level of competition (which depends on the antitrust policies) and the uncertainty, we can say that supply-driven inflation depends on the labor market conditions.

In the labor market the market clearing price depends on the level of employment, given the role of institutional factors (e.g. the unions' power). Assuming sticky prices, we have:

$$w = bn \tag{1.10}$$

where w is the growth of nominal wages, n is the employment growth and $b \geq 1$ is the parameter, which captures the role of institutions. We call parameter b a rigidity factor: lower values of b mean higher flexibility of the labor market clearing prices. The labor market price depends on the growth rate of the employment, which can be fixed, taking into account the features of the aggregate production function.

The production growth depends on both employment growth and growth of capital (à la Cobb–Douglas):

$$y = \alpha n + \beta k \tag{1.11}$$

With $k = 0$ – that is, a medium run horizon – the key relationship between output and employment is identified (α = labor productivity factor). Therefore the relationship between the growth rate of employment and output growth becomes (with $\varepsilon = 1/\alpha$):

$$n = \varepsilon y$$

The parameter ε represents the role of technological obsolescence and/or lack of innovation. We can call this parameter the inefficiency factor: lower values of ε mean higher efficiency of the production of goods and services.

In general, the aggregate demand growth (i.e. the AD curve) depends, as usual, on real and monetary drivers: that is, changes a in the demand for goods and services – including the balance of payment unbalances – and changes in real money growth (changes in money minus inflation). We assume that the real multiplier and the monetary multiplier have the same value. It is obvious that this assumption is made just for the sake of simplicity, given that explicit introduction of heterogeneous multipliers would not change the general results.

Now we have to capture the effect of banking secrecy on aggregate demand. The bottom line is that banking secrecy can increase the appeal of the national banking system by increasing its dimension as well as its profitability. Thus, banking secrecy can have a positive net macro effect on the demand for goods and services. Therefore, any regulatory change which increases laxity is likely to represent good news for the economy. We assume that change in the aggregate demand is related to banking secrecy shocks through the parameter l:

$$Y = a + (m - \pi) + l \tag{1.12}$$

In other words, we assume that increasing levels of banking secrecy can have a net effect because they change the aggregate demand pattern. We capture the link between banking secrecy and residents' utility through higher levels of consumption, as, for example, it is modeled in Brevik and Gartner (2005) and (2006). Taking into account the overall effect on real and monetary components and including exchange rate movements, a higher level of banking secrecy increases the aggregate demand.

Now we have all the information to obtain the equilibrium level of both output y^* and inflation π^*:

$$y^* = \frac{(a + m + l) + 1 - (\mu + u)}{\gamma} \tag{1.13}$$

$$\pi^* = \frac{(a + m + l)(\gamma - 1) + (\mu + u) - 1}{\gamma} \tag{1.14}$$

where:

$$\gamma = (b\varepsilon + 1) > 1$$

Given the equilibrium values of output growth and inflation, we can calculate the effects of changes in banking secrecy by using the output banking multiplier (OBM) and the inflation banking accelerator (IBA), where:

$$OBM = \frac{\partial y^{**}}{\partial \bar{l}} = \frac{1}{\gamma}$$

$$IBA = \frac{\partial \pi^{**}}{\partial \bar{l}} = \frac{(\gamma - 1)}{\gamma}$$

Given a banking secrecy change, OBM and IBA, respectively, measure the effect of it on output and inflation. The values of the OBM and the IBA are useful in calculating the *sacrifice ratio*: that is, the ratio between the inflation costs and the output gains. The sacrifice ratio SR – that is, the price in terms of inflation for having more growth – is equal to:

$$\frac{IMM}{OMM} = (\gamma - 1) = b\varepsilon$$

The SR depends on: the rigidity factor (less competition in the labor markets increases SR); and the inefficiency factor (less productivity means greater SR). In other words, more efficient and competitive markets reduce the inflation costs related to output growth when banking secrecy changes. Lower SR means a higher level of the parameter m in the policymaker optimization choices discussed in Section 1.2.

All in all, higher banking secrecy can produce a higher level both of national income and wage rates. The result coincides with the conclusions reached in Brevik and Gartner (2005) and (2006).

Our model captures in a simple way the empirical evidence on the relationship between banking secrecy and macro performances. For example, it has been shown that tax havens, which are commonly associated with bank secrecy, exhibited faster economic growth rates between 1982 and 2006 (Hines 2010). Furthermore, higher OFC-related capital inflows seem to have a positive effect on economic growth, as covered by Gonzales et al. (2013); Gonzales and Schipke (2013); and Schipke (2013).

1.5 Banking secrecy: black macroeconomics

Now we can analyze the black macroeconomics of banking secrecy by using the framework introduced by Barone and Masciandaro (2011).The bottom line of this model is that banking secrecy can be a powerful

device in strengthening the role of the illegal and criminal sectors in a given economic system.[30]

To define a macro model of the accumulation–laundering–investment process of the players involved in illegal and criminal activities – already described at the micro level in Section 1.2 – we focus on the behavior of a general black sector, which derives its income from a set of non-legal activities and that, under certain conditions, must launder the income to invest it. We highlight the role of banking secrecy as an overall accelerator of the black sector's income and wealth.

Let us assume that in a given economic system there is a black sector that controls an initial volume of liquid funds *ACI* – the result of illegal activities of accumulation. Let us further assume that, at least for part of those funds, there is a need for laundering through banks. Without separating these funds from their illicit origin, and given the expected burden of punishment, they have less value. Laundering activity via banks is therefore needed and welcomed.

In order to highlight the general nature of the analysis, we claim that the demand for banks' laundering services could be created by distinguishing the different potential components of a criminal sector according to their primary illegal activity: by organized crime in the strict sense, by white collar crime, or by crime associated with political corruption, also considering the relative crossover and commingling.

Each laundering phase has a cost for the black sector. This cost is equal to the price of the banking secrecy supply. The price of the banking secrecy service – all other conditions being equal – will depend on the costs of the various techniques for laundering through banks.

Let us assume that in the banking secrecy markets the black sector is a price taker and that the cost of laundering through banks, *cR*, is proportional to the amount of the illicit funds. Defining the costs by *c*, both regulatory and technical, we can write:

$$cR = cACI \tag{1.15}$$

If the first laundering phase is successful, the black sector may spend and invest the remaining liquid funds, $(1 - c)\gamma ACI$, in both legal economic activities (investment) or illicit activities (reaccumulation).

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[30] Ferwenda (2013) reviewed the potential negative effects that laundering can have economically, socially and politically; Groot (2013) discussed whether laundering can be considered a victimless crime; Levi (2013) analyzed the most important predicate crime for laundering. Krieger and Meierrieks (2013) studied the relationships between laundering and terrorism finance.

The hiring of professional banking launderers – with their explicit or implicit fees – is a well-documented phenomenon. These operators use their expertise to launder illegal proceeds. In general, the professionals may be witting or unwitting accomplices, but, in either case, to build up of the overall procedure is costly.

We assume that in general the banking secrecy procedures are costly for the black sector; however, it is well known that, for example, the criminal groups can participate in legal banking businesses as well, in order to conceal their illegal proceeds, and that these businesses can produce profits. As it will be evident below, the smaller the banking secrecy costs are, the greater the accelerator effect is.

The black sector spends the first part of the laundered liquidity, equal to d, on consumer goods. The second portion is invested in the legal sectors of the economy, for an amount of f, and then the third portion, equal to q, is reinvested in illegal markets (given, of course, $d + f + q = 1$).

On one side, share of illegal funds needs to be spent: minimizing incrimination risks comes at a price, so the black sector has to pay this price. On the other side, we assume that a share of dirty money is reinvested in the illegal market without concealment. For example, in all illicit services, cash is, by definition, the currency of choice, running in a closed circuit separate from the legitimate markets.

The black sector makes investment choices according to the classical principles of portfolio theory, indicating with $q(r, s)$ the amount of laundered funds reinvested in illegal activities; with r, the actual expected return on the illegal reaccumulation; and with s, the relative risk. Finally, we can assume that the reaccumulation of funds in the illegal sector requires the black sector to launder only part, thus indicating with the positive parameter, y, the portion of illegal reaccumulation that requires laundered liquidity.

The black sector reinvests both clean and dirty money and then a new flow of illegal liquidity is created. The illegal revenues are characterized again by incrimination costs, which generate a new demand for banking secrecy services. It is therefore equal to:

$$(1 + r)(1 - c)^2 qy^2 ACI \tag{1.16}$$

The crucial assumption is that both the lawful investment and part of the unlawful reaccumulation require financing with clean cash. This assumption can either be supported by the presence of rational, informed agents who provide the supply of services to the black sector for the illegal reaccumulation, or by rationality of the criminal himself, who wishes to minimize the probability of being discovered.

Repeating infinite times the demand for banking secrecy services, which each time encounter a parallel supply, and taking into account that the values of the parameters introduced remain constant, the total amount of financial flow generated by laundering activity via banks, *AFI*, is equal to:

$$AFI = \frac{yACI(1-c)}{1-yq(1-c)(1+r)} = mACI \tag{1.17}$$

with $0 < c, q, y < 1$.

The flow *AFI* represents the overall financial wealth generated by the laundering activity via banks, and *m* can be defined as the accelerator of the model. By doing comparative statics exercises, it is easy to show that the amount of liquidity laundered increases as the price of the banking secrecy service declines:

$$\frac{\partial AFI}{\partial c} = -\frac{ACIy}{\left[1-qy(1-c)(1+r)\right]^2} < 0 \tag{1.18}$$

The dynamics of the amount of reaccumulation of laundered cash in illegal activities depends on expected profits, in terms of return and risk:

$$\frac{\partial AFI}{\partial q} = \frac{(1-c)^2(1+r)ACIy^2}{\left[1-qy(1+r)(1-c)\right]^2} > 0 \tag{1.19}$$

If the expected actual return on the reaccumulation in illegal activities rises, then we observe an increase in *AFI*:

$$\frac{\partial AFI}{\partial r} = \frac{(1-c)^2 ACIqy^2}{\left[1-qy(1-c)(1+r)\right]^2} > 0 \tag{1.20}$$

If the initial volume of illegal proceeds increases, the *AFI* increases as well:

$$\frac{\partial AFI}{\partial ACI} = \frac{y(1-c)}{\left[1-qy(1-c)(1+r)\right]} > 0 \tag{1.21}$$

The optimal share of the initial volume of illegal revenues that require cleaning has a positive effect on *AFI*:

$$\frac{\partial AFI}{\partial y} = \frac{(1-c)ACI}{\left[1-qy(1+r)(1-c)\right]^2} > 0 \tag{1.22}$$

Therefore, the more effective the banking secrecy action, the greater the cash flow available to the black sector for reinvestment, both illegal and legal.

Now we will analyze the volume of investment in the legal sector. It is noteworthy that the legal investment may grow as the banking secrecy supply becomes more effective, because it helps to camouflage the illegal activities within the economic system. Using *ARL* to indicate the total flow of legal investments and r_l – the average rate of return – we get:

$$ARL = \frac{f(1-c)(1+r_l)yACI}{1-yq(1-c)(1+r)} \tag{1.23}$$

So the total investment flow *ART* – illegal and legal – made possible by the laundering activity via banks is equal to:

$$ART = ARI + ARL = \frac{(1-c)\left[q+f(1+r_l)\right]yACI}{1-yq(1-c)(1+r)} \tag{1.24}$$

where

$$ARI = \frac{q(1-c)yACI}{1-yq(1-c)(1+r)} \tag{1.25}$$

Expression (1.25) grasps the central role of banking secrecy in favoring the overall growth of revenues for the black sector. Thanks to laundering, the illegal players are able not only to consume and spend but, more importantly, to input capital into the legal and illegal circuits of the economy. Furthermore, the more successful and profitable the investments, the more the illegal players increase their strength, which raises their influence in the overall economy.

Returning to the initial expression (1.17), if the banking secrecy accelerator is stable, changes in the initial revenues from the illegal activities of accumulation will have a more than proportional effect on the volume of funds laundered. The maximum multiplying effect is reached when the costs are negligible ($c = 0$), while at the same time all the proceeds from the illegal activities must be laundered ($\gamma = 1$). In this case, the degree of expansion of the volume of activity *AFI* produced by laundering – which coincides with the maximum flow of liquidity available for reinvestment – is equal to:

$$AFI_{max} = \frac{ACI}{1 - q(1+r)} \tag{1.26}$$

Up to now, the connection between the illegal profits and the financial accumulation made through banking secrecy services has been described using a static framework. How to deal with the time dimension of the problem, which means that the different stages – laundering through banks, illegal reinvestment and legal investment – cannot be perfectly overlapped? A different model can be used to shed light on the same intuition, but in a dynamic context. Here, for the sake of simplicity, we assume that all the reinvestments in the illegal markets are made using dirty money.

Let us consider again that in a given country, or region, the black sector is involved in illegal activities, and it gains an aggregate monetary profit of K_0.

We assume that the gray sector launders at least a fraction, $0 \leq \gamma < 1$, of its illegal profits, while the rest is reinvested in illegal markets. We also assume that each laundering operation has a cost for the black sector, which is represented by the price of banking secrecy services.

The variable C represents the overall cost of banking secrecy procedures. The process of laundering through banks takes one period. The net value of laundered money available to the black sector is:

$$W_0 = (1 - C)\gamma K_0 \tag{1.27}$$

A portion f of these assets is invested in the legal markets, while the remaining $(1 - f)W_0$ is spent on consumption goods. Laundering through banks is the channel through which the illegal profits are funneled into the legitimate economic sector for business investments or for sustaining the lifestyle of the illegal players. The real and financial sectors are used for reinvestment of criminal proceeds.

In the second period, the value of legal financial assets, which are the result from the legal investment, is equal to:

$$L_1 = fW_0 (1 + r_l) \tag{1.28}$$

where r_l is the legal rate of return. In the meantime, the share of illegal revenues $(1 - y)K_0$, which was reinvested in the illegal market in the first period, yield the overall illegal return:

$$K_1 = (1 - y)K_0 (1 + r_i) \tag{1.29}$$

Afterwards, the legal assets come from two sources: the share of starting illegal capital, which was laundered in the first period and then invested in the legal sector in the second period; and the share of illegal capital, which was directly reinvested in the illegal market in the first period and then laundered to be used in the legal economy in the second period. Therefore, in general, the case we have is:

$$L_n = f(1 + r_l)(L_{n-1} + W_{n-1}) \tag{1.30}$$

where

$$W_n = (1 - C)yK_n \tag{1.31}$$

and

$$K_n = (1 - y)K_{n-1}(1 + r_i) = (1 - y)^n K_0 (1 + r_i)^n. \tag{1.32}$$

Let us assume that every period lasts time interval h. Therefore the difference (ΔL) between two successive steps is given by:

$$\Delta L = f(1+r_l)\left[L(t)-L(t-h)\right] + f(1+r_l)y(1-C)K_0(1-y)^t(1+r_i)^t \left[\frac{(1-y)^h(1+r_i)^h-1}{(1-y)^h(1+r_i)^h}\right]$$

$$\frac{\Delta L}{h} = f(1+r_l)\frac{\left[L(t)-L(t-h)\right]}{h} + f(1+r_l)y(1-C)K_0(1-y)^t(1+r_i)^t \left[\frac{(1-y)^h(1+r_i)^h-1}{h(1-y)^h(1+r_i)^h}\right]$$

$$\lim_{h\to 0}\frac{\Delta L}{h}\Rightarrow\frac{dL}{dt}=f\left(1+r_l\right)\frac{dL}{dt}+f\left(1+r_l\right)yK_0\left(1-C\right)\left(1-y\right)^t\left(1+r_i\right)^t\log\left[\left(1-y\right)\left(1+r_i\right)\right]$$

$$\frac{dL}{dt}=\frac{f\left(1+r_l\right)}{1-f\left(1+r_l\right)}yK_0\left(1-C\right)\left(1-y\right)^t\left(1+r_i\right)^t\log\left[\left(1-y\right)\left(1+r_i\right)\right]$$

given

$$F=\frac{f\left(1+r_l\right)}{1-f\left(1+r_l\right)}yK_0\left(1-C\right)$$

we have

$$\int_0^t\frac{dL}{d\tau}d\tau=F\int_0^t\left[\log\left(1-y\right)+\log\left(1+r_i\right)\right]\left(1-y\right)^\tau\left(1+r_i\right)^\tau d\tau$$

The overall amount of the legal assets of the gray sector is equal to:

$$L\left(t\right)=F\left[\left(1-y\right)^t\left(1+r_i\right)^t-1\right]$$

Equation (1.33) is relevant when it is a monotonic increasing function of *t* for:

$$r_i>\frac{y}{1-y}$$

and for:

$$f<\frac{1}{1+r_l}$$

Now we can go on with describing the costs of the banking secrecy procedure, in order to disentangle the role of regulation. We simply assume that the cost (C) of laundering through banks, which is time-independent, consists of two parts: the first one is the technical cost (C_0) of procedures that involve laundering through banks, and the second corresponds to the cost (R) created by anti-banking-secrecy regulation.

We assume that the latter component depends on the laxity attitude index δ – that is, the attitude of every national policymaker to be compliant with the international standards that we have already discussed in the previous sections – and that the functional relation could even be made more complicated. Nevertheless, we propose that δ has only small variations, therefore we could consider, in the first approximation, that this contribution depends linearly on it:

$$C = C_0 + R \quad \text{with} \quad 0 \le C < 1$$
$$R = C_1 (1 - \beta\delta),\ 0 < C_1 < 1 \quad \text{and} \quad 0 < \beta < 1;\ \delta \ge 0$$

where C_0 is the cost of the technology required to launder through banks and R depends on the effectiveness of anti-banking-secrecy regulation. Technology is becoming a facilitator of illegal activities, particularly for laundering through banks. At the same time, restrictive anti-banking-secrecy regulation can force the black sector to invest a great deal of energy and resources in diversification. We can assume that the former is a fixed cost, $0 \le C_{0,}$ with different money laundering methods.

< 1, while the latter is a variable cost, that depends on an index which measures the country's attitude to be lax in its anti-banking-secrecy regulation (δ index).The parameter β is a normalizing factor.

We can rewrite Equation (1.33) as:

$$L(t) = \frac{f(1+r_l)}{1-f(1+r_l)} yK_0 \left\{1 - \left[C_0 + R(\delta)\right]\right\}\left[(1-y)^t (1+r_i)^t - 1\right]$$

or:

$$L(t) = \frac{f(1+r_l)}{1-f(1+r_l)} yK_0 \left\{1 - \left[C_0 + C_1(1-\beta\delta)\right]\right\}\left[(1-y)^t (1+r_i)^t - 1\right]$$

At a time $t = n$, we will have:

$$L(n) = \frac{f(1+r_l)}{1-f(1+r_l)} yK_0 \left\{1 - \left[C_0 + C_1(1-\beta\delta)\right]\right\}\left[(1-y)^n (1+r_i)^n - 1\right] \quad (1.34)$$

The ratio between overall legal wealth and initial illegal profits represents the banking secrecy accelerator.

Given an initial volume of illegal profits, the more effective the process of laundering through banks, the more legal assets there are available to the black sector, owing to the laundering – that is, the illegal reinvestment mechanism. The dynamic model shows how the banking secrecy mechanism empowers the illegal players.

The model can be used to explore the possible effects of banking secrecy regulation on the total amount of legal assets held by the black sector. It shows that the costs of procedures involved in laundering through banks depend on the effectiveness of the banking secrecy regulation, given that the legal regulation and its enforcement increase the transaction costs.

In this respect, it is crucial to understand time by time and country by country if the incumbent policymaker considers the growth of the black sector a political cost or gain – that is, if the optimal value of the parameter γ is negative or positive.

If the black sector's straightness is perceived as a toxic factor, every improvement in the effectiveness of the anti-banking-secrecy regulation – given its cost – will produce a decrease in the multiplier of laundering through banks, and therefore an increase in the overall public benefits.

Following this line of reasoning it is evident that, in the long run, the goal of regulation must be to eliminate the accelerator effect; in other words, the optimal value of the accelerator should be zero.

At a steady state, the accelerator cannot be less than zero. In fact, if the overall legal wealth is negative, this means that laundering activity through banks destroys economic value. But if procedures involved in laundering through banks are ineffective, the likely consequence is that the black sector will progressively change its behavior – for example, in terms of the proportion of illegal revenues to be laundered, the share of reinvestment in the illegal economy and its diversification – in order to avoid the destruction of value. It is well-recognized that every illegal player implements countermeasures to avoid detection and prosecution by the law.

1.6 Banking secrecy and black economy: empirics

In the following section, by using the theoretical framework presented above, we present estimates of the amount of legal capital that the illegal sector, through laundering, in several regions of the world.

The analysis will be performed via simulation studies, in order to evaluate the level of penetration of legal markets by criminal organizations.

The issue is relevant if we think about the significant negative economic and social effects that crime can have on its victims and their economic predicaments.

As correctly pointed out by Barone and Masciandaro (2008), most literature on laundering effects is pure speculation, or it is based on figures that are either wrongly cited, misinterpreted or just invented. And it is evident that the figures describing the amount of money being laundered underestimate the phenomenon. A systematic review essay by Unger and Rawlings (2008) asserted that there are only two potentially useful empirical sources, which are potentially useful:

i. The International Monetary Fund's (IMF) estimates (Tanzi (1996) and (1997); Quirk, (1996) and (1997)): The IMF estimates ML at between 2 percent and 5 percent of world GDP; furthermore, they estimated that an increase of 10 percent in money laundering produced a 0.1 percent reduction in the annual GDP. The same indication was provided in a 1998 speech by Michel Camdessus, at that time IMF Managing Director, in which he maintained that the estimated number of money laundering transactions make up between 2 percent and 5 percent of global GDP. Unfortunately, IMF sources have never explained how they got these figures.
ii. Walker's estimates (Walker 1999, 2007, Walker and Unger 2009): Walker had estimated that the amount of money being laundered in the world was equal to 2.85 trillion dollars, which was about 4 percent of world GNP (US ML: 1.3 trillion per year). A revised Walker model (Unger and Rawlings 2008) has been used to estimate the money laundering flows in the Netherlands (Walker's result = 18 billion dollars; Unger's result is from 8.6 to 14.8 billion dollars, considering Dutch criminal money only, while 30 billion dollars are laundered in or though the Netherlands every year). Again, Walker's methodology was characterized by low disclosure. The Dutch authors (Unger and Rawlings 2008) noted that when they tried to reproduce Walker's estimations, it appeared that he used "tacit knowledge" and "feeling" to calibrate his model.[31]

Therefore both the IMF model and Walker's estimates were not easy to replicate. We share the opinion of Schneider and Windischbauer

[31] Brettl (2013) offered different ways of estimating the risk to a country presented by laundering, thus emphasizing the role of cash, as Ardizzi et al. (2013).

(2008) that these kinds of results are scientifically risky, since it is difficult to replicate them and to prove their correctness.[32] After these two pioneering efforts, four additional estimates of money laundering activity were provided:

iii. Argentieri et al. (2008): the authors presented a methodology for constructing a money laundering series for Italy (1980–2001). The estimates were based on a theoretical model which gave the result that money laundering accounts for approximately 9 percent of GDP;
iv. Schneider and Windischbauer (2008) made an attempt to quantify the volume and development of money laundering activities in 20 highly developed OECD countries. In the years 1994–1995, the volume of laundered money was 554 billion dollars and increased up to 742 billion dollars from 2002 to 2003. On a worldwide basis, 1.038 billion dollars are estimated to have been laundered from the drug crime business only in 2005. The authors acknowledged that these figures were very preliminary.

Schneider and Windischbauer (2008) used DYMIMIC estimation, where the volume of money laundering was treated as a latent variable. The estimation procedure uses various reasons for increased laundering (i.e. various criminal activities) and indicators (confiscated money, prosecuted persons, etc.) to get an estimation of the latent variable. However – as the authors explicitly stressed – one great difficulty was that one got only a relative estimation value for the size and development of money laundering and other estimations of absolute values had to be used in order to transform/calibrate the relative values obtained through DYMIMIC estimation into absolute ones.

v. Chong and Lopez de Silanes (2006): the authors produced a systematic effort to assess the volume of money laundering around the world, using six different methodologies as proxies for money laundering to estimate the main sources of illegal revenue that had to be laundered. The first three measures they calculated, were indirect proxies for money laundering since they had measured the underground economy as the discrepancy between the official (or

[32] In general the data's plausibility causes a problem when analyzing all the illegal markets: for estimates of the illegal drugs markets see, among others, Reuter and Greenfield (2001) and Blickman (2003).

declared) value of a macro series and its actual (or estimated) value. Furthermore, since these macro estimates of money laundering had potential measurement problems, the authors complemented these figures with subjective indicators from opinion surveys. For three proxies of the underground economy, the size of ML ranges from 19 (15) percent to 31 (32) percent of GDP for the average (median) country in the world.

vi. Ardizzi et al. (2013): the authors propose a model of cash-in flows on current accounts; they use as proxies for the money laundering flows two indexes of the diffusion of the criminal economy related to both illegal trafficking and extortion. The model is tested on Italian data, using a panel of 91 provinces over the period from 2005 to 2008. According to their estimation results, the money laundering phenomenon accounts for approximately 7 percent of GDP.

If getting figures on the world money laundering industry is hard and the estimates are weak, estimating the economic effects of such crime is even more difficult. Unger and Rawlings (2008) did the first systematic research on the effects of money laundering. They distinguished the direct effects of the crime – losses for the victims and gains for the perpetrators – from the indirect effects, both economic (real and financial) indirect and social, as well as disentangling short-term effects from long-term effects. They classified 25 different effects of money laundering: on business activities, relative prices, consumption, saving, taxes, output, employment, growth, and so on. Unfortunately, their classification is just a qualitative one.

A quantitative estimation is presented by the Chong and Lopez de Silanes paper (2006). They estimated the impact of regulation and enforcement on money laundering. In particular, their results show that a two-point standard deviation increase in the efficiency of the legal system is associated with a decrease in money laundering that ranges from 10.85 percent to 14.1 percent, depending on the definition of money-laundering volume. Also, according to Chong and Lopez de Silanes, money laundering regulation has a statistically significant impact on money laundering itself.

Therefore, given the current situation, our aim is to comment on the results of a dynamic model that can be used for simulation and – more importantly – testing of different hypotheses and data.

Crime can take many forms and can have a major influence on the well-being of victims, who may suffer financially, physically, psychologically and emotionally. In the meantime, the fear of crime can affect

people and restrict their lives in many ways. Crime can also result in significant economic costs, such as the provision of law enforcement services and correction services, as well as in costs for businesses and households, either as a consequence of crime or as the implementation of preventive measures.

The simulation shown in the following pages starts by estimating the amount of legal capital produced by criminal organizations in several regions of the world, in the case of those criminal organizations that launder dirty money at home. In the analysis, the different levels of anti-money laundering regulation in every region have been considered.

The second step is to illustrate the amount of legal capital produced by criminal organizations, if they decide to launder illegal revenues in foreign regions. Finally, some simulation results are commented on, in order to highlight how the laundering accelerator has been modified by changes in the parameters of the model.

The simulations – performed by Barone and Masciandaro in 2011 – can be described as follows. Starting from the initial criminal activity that produces dirty profits, the laundering process allows – given its costs – reinvestment of such capital in the legal sector of the economy, thus minimizing the risk of prosecution. The share which is destined for the illegal sector further produces dirty revenues that have undergone the laundering process. The laundering cycle is therefore in motion and each step – provided that no obstacles hinder the process – contributes to an increase in the legal assets held by the criminal sector.

Simulations can determine the value of legal assets held by the criminal sector in different regions. The simulations used the very scarce data available that is transparent regarding the assumptions made on crucial parameters. It is worth noting that the simulations are the product of the theoretical model. They can be replicated, or improved, using different, more effective data and/or assumptions, or countered by implementing alternative theoretical frameworks.

The parameters of the simulations can be specified as follows:

(a) Initial illegal revenues K_0: this has been used as an estimate of the initial illegal profits – that is, net revenues from the underground economy. The choice of the overall underground economy is consistent with the definition of laundering activity used in the theoretical model. As we extensively commented in the above section, the demand for laundering is potentially generated by the revenues of any activity characterized by the probability of being discovered, and consequently prosecuted. The broadest definition of underground economy

(Schneider 2007) includes all illegal deeds that fit the description of classical crimes, such as burglary, robbery and drug dealing.

However, in order to produce a conservative simulation, only criminal revenues that are the proceeds of a specific and relevant crime have been considered. It has been highlighted that since drug trafficking (opium, heroin, morphine, cocaine, cannabis herbs and resin, ATS, ecstasy) is the main activity that produces illegal funds, revenues from it have to be laundered.

On several occasions it has been confirmed that drug trafficking remains a priority in criminal markets.[33] The starting point is the value of the global illicit drug market at the retail level (in billion US dollars), subdivided regionally, as reported in UNODC (2005).

To figure out the initial level of illegal profits, the information that the highest profits that have been made in the passage from wholesale to retail markets, and that most of the gross profits have been made in the industrialized world, has been used. Of the total value-added of the illicit drug industry, 76 percent is generated in the retail markets of industrialized countries.[34] These figures have been used to approximate the level of profits made by criminal organizations.

(b) The share of illegal net revenues to be laundered, y: Walker (2007) estimated that the percentage of drug proceeds that were laundered ranges from 50 percent to 100 percent, depending on the country where the money was laundered. Unger (2007) pointed out that, according to the analysis of Smekens and Verbuggen (2004), the share of illegal money which had to be laundered was equal to 70 percent of the initial capital for crimes related to drug trafficking, while for other minor crimes, like theft, burglary, robbery, and so on, the portion was smaller. However, since the analysis is focused on the illegal capital coming from drug trafficking, the parameter is assumed to be equal to an average between Walker's and Smekens's data: that is, equal to 70 percent.

(c) The rates of return r_i (illegal) and r_l (legal)[35]: in the drug markets the rate of return can reach 600 percent for heroin, while the added value

[33] Europol (2006, 2007, 2008, 2009).

[34] United Nations (2005).

[35] The launderer can invest in capital markets to wash dirty money, however he prefers assets such as bonds, and security with low risk, in order to minimize the probability of losing money (see Unger 2007).

of the cocaine market can be as high as 100 percent.[36] To create a conservative simulation, it has been assumed that an average illegal rate of return equals to 250 percent. With regard to r_l, the legal rate or return is assumed to be equal to 5.2 percent.[37]

(d) The share of reinvestment *f*: the portion *f* of laundered money reinvested in the legal market amounts to 89 percent. This percentage has been obtained using data from Unger (2007) on the share of laundered money that is spent in consumption, and which is equal to 11 percent.[38]

(e) The cost of money laundering *C*: the illegal profits can be laundered at home or abroad. The choice depends on the costs of money laundering procedures. If such costs are lower in the home region than abroad, the criminal players will decide to launder domestically, otherwise they will opt for abroad.

The whole cost of money laundering *C* includes the technical cost (C_0) paid to the launderer, plus the cost of anti-money laundering regulation (*R*). For the few cases analyzed by Reuter and Truman (2004), the value of C_0 – that is, money laundering technical costs, ranges from 5 percent to 15 percent of the money that should be laundered, depending on the primary crime committed. For the money laundering of the proceeds from drug traffic and the commission claimed by launderers amounts to between 7 percent and 10 percent. In the simulations, C_0 has been assumed to be equal to 0.10.[39]

The cost *R* is inversely related to an index of anti-money laundering laxity δ, such that the cost of money laundering increases when the parameter δ decreases. The relationship is $R = C_1 (1 - \beta\delta)$ where C_1 is equal to 0.8 while β amounts to 0.4.

The parameters C_1 and β are calibrated in order to avoid extreme cases: that is, to avoid *C* being equal to 100 percent – if there is no money laundering – or to 0 percent – if the money laundering constitutes a free lunch. We assume that *C* ranges between a lower level of 10 percent and an upper limit of 90 percent.

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[36] Unger (2007).

[37] The value was obtained by estimating the average of the policy interest rates for advanced and emerging countries. For this purpose BIS data, and data from the national central banks of several countries, has been used.

[38] See Unger (2007), p. 152.

[39] Famous launderers were: Stephen Saccoccia, in 1993, who laundered between 200 million and 750 million US dollars, charging to his clients a commission of 10 percent; German Cadavid who laundered 50 million to 60 million UK pounds, charging to his clients a commission of 7 percent; and others, such as Robert Hirsch, Richard Spence, Harvey Weinig: see Reuter and Truman (2004) pp. 35–40.

In the best-case scenario for criminal organizations, when anti-money laundering regulation is very lax (see, e.g. the offshore attitude index of the Caribbean, which is equal to 2.29), R is equal to 0, but criminals still have to pay the technical cost, C_0. In the worst case (when there is strict regulation with an attitude index equal to 0, as it is for North America), will pay the highest possible cost, which is equal to 90 percent.

Finally, in order to determine the parameter δ, the index of laxity on money laundering for several countries of the world – as proposed by Masciandaro (2008) – has been used. After grouping all countries in the regions they belong to, the weighted average of the index[40] for the region is calculated.

Given the equation $L(t)$, it is possible to estimate, for different regions in the world, the amount of legal financial assets produced by criminal sectors when they launder dirty money domestically.

It is worth noting that at time 0 there is no money laundering activity, so that the legal capital is equal to 0 for all regions. While the time-horizon expands, the level of legal capital increases and criminal organizations increasingly penetrate the legal economic system. For each region, after five years (2004–2009) the value of legal assets is equal to:

$$L(5) = \frac{0.89(1+0.052)}{1-0.89(1+0.052)} 0.7K_0 \left\{1-\left[0.10+0.8(1-0.4\delta)\right]\right\} \left[(1-0.7)^5 (1+2.5)^5 - 1\right]$$

Considering a time horizon of five years, the laundering accelerator – that is, the ratio between the total legal assets and the initial illegal revenues – ranges from 0.28 to 2.37, according to the level of anti-money laundering regulation adopted by each destination region.

For example: in the case of Eastern Europe, where the initial dirty money (K_0) is equal to 15.62 billion US dollars, and the offshore attitude index δ is equal to 1.5, the legal capital produced by money laundering amounts to 25.75 billion US dollars, with an accelerator of 1.65.

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[40] In Masciandaro (2008) an offshore attitude index (or laxity index) is proposed, using a two-stage process. First stage: each country was checked as to whether it was a member of both OECD and FATF (strong onshore attitude, or minimum level of offshore attitude) or whether it was listed in each of the three types of OFC list: the Financial Stability (FSF) list, the OECD list, the FATF list. The degree of offshore attitude will depend on the number of times a country is country is present on the three different blacklists (this number ranges from 0 to 3). Second stage: numerical values were assigned to each level of offshore attitude: 0 if a country shows a strong onshore attitude, 1 if a country doesn't show a strong onshore attitude, but, at the same time, it wasn't in any blacklist; 2, 3 and 4 if a country was present respectively in one, two or three blacklists. For more details, see Masciandaro (2008).

Regions with more effective anti-money laundering regulation exhibit smaller accelerators. In Western and Central Europe, and North America, the accelerators are equal to 0.93 and 0.28, respectively, after five years. In these cases money laundering procedures can become more effective in a longer horizon. For example, in the Western and Central European regions the accelerator becomes greater than 1 (1.17) after six years, while for the North American region it takes 15 years.

When money laundering procedures are not effective, criminal organizations can change their strategy by moving the laundering process abroad. Therefore, the theoretical model can be used to estimate the amount of legal capital produced by criminal organizations when they decide to launder illegal revenues in foreign regions.

For the second round of simulations, the focus is shifted to Europe and United States: the main share of dirty money comes from North America (Canada, Mexico and United States), which accounts for 44 percent of the world's total drug sales at the retail level, followed by Europe (33 percent).

With regard to North America – a region characterized by severe anti-money laundering regulation with an offshore attitude index (δ_H) equal to 0 – criminal organizations can choose to launder abroad. Given the equation $L(t)$, and the profits of organized crime in North America, and if criminals launder at home, the legal assets produced by money laundering activity with a time horizon of five years are equal to:

$$L(5) = \frac{0.89(1+0.052)}{1-0.89(1+0.052)} 0.7K_0 \left\{1-\left[0.10+0.8\left(1-0.4\delta_H\right)\right]\right\}$$
$$\left[(1-0.7)^5(1+2.5)^5-1\right]$$
$$L(5) = 2.84K_0\left(0.10+0.32\delta_H\right) = \text{US\$ bn } 30.6$$

Alternatively, North American criminal organizations can launder their money in more convenient regions, such as the Caribbean region, which comprises territories that include the Bahamas, British Virgin Islands, Cayman Islands, and St Kitts and Nevis.

After substituting the offshore attitude index with the index of the Caribbean region (δ_F), the level of illegal profits of North America the flow of legal assets becomes:

$$L(5) = \frac{0.89(1+0.052)}{1-0.89(1+0.052)} 0.7K_0 \left\{1-\left[0.10+0.8\left(1-0.4\delta_F\right)\right]\right\}$$
$$\left[(1-0.7)^5(1+2.5)^5-1\right]$$

The legal assets produced by money laundering activity can therefore range from the lowest value of 177.51 billion US dollars, when dirty money is laundered in Eastern Europe (a region characterized by an offshore attitude index equal to 1.5), to an upper limit of 254.8877 billion US dollars, when the destination region is the Caribbean.

Focusing on Europe, for a five-year horizon and for the criminal organizations of Western and Central Europe, the money laundering accelerator is less than 1 at home, and it means that laundering activities might be cheaper abroad.

When the cleaning operation is undertaken – for example, in Eastern Europe – legal assets amount to:

$$L(5) = \frac{0.89(1+0.052)}{1-0.89(1+0.052)} 0.7K_0 \left\{1-\left[0.10+0.8\left(1-0.4\delta_F\right)\right]\right\}$$
$$= \left[(1-0.7)^5 (1+2.5)^5 - 1\right] 2.84K_0 \left(0.1+0.32\delta_F\right) = 2.84(66)$$
$$\left[0.1+0.32(1.5)\right] = \text{US\$ bn } 108.72 \text{ (0.67\% of the EU 2009 GDP);}$$

However, if the criminal sector chooses South Eastern Europe as their "washing machine," it gains an amount of legal capital equal to 71.5 billion US dollars (0.44 percent of European GDP in 2009).

The situation is different for the criminal organizations of South Eastern Europe and Eastern Europe:

- in South Eastern Europe, legal assets, produced by home money laundering, are equal to:

$$L(5) = \frac{0.89(1+0.052)}{1-0.89(1+0.052)} 0.7K_0 \left\{1-\left[0.10+0.8\left(1-0.4\delta_H\right)\right]\right\}$$
$$= \left[(1-0.7)^5 (1+2.5)^5 - 1\right] = 2.84K_0 \left(0.1+0.32\delta_H\right) = 2.84(2.88)$$
$$\left[0.1+0.32(0.88)\right] = \text{US\$ bn } 3.13 \text{ (0.02\% of the EU 2009 GDI}$$

- in Eastern Europe they are equal to:

$$L(5) = \frac{0.89(1+0.052)}{1-0.89(1+0.052)} 0.7K_0 \left\{1-\left[0.10+0.8\left(1-0.4\delta_H\right)\right]\right\}$$
$$= \left[(1-0.7)^5 (1+2.5)^5 - 1\right] \; 2.84K_0 \left(0.1+0.32\delta_H\right) = 2.84(11.87)$$
$$= \left[0.1+0.32(1.5)\right] \text{ US\$ bn } 19.55 \text{ (0.11\% of the EU 2009 GDP)}$$

What is the total world value of legal assets produced by the money laundering industry in favor of criminal organizations? The profits of the whole drug industry were calculated UNODC (2005) to be equal to 244.273 billion US dollars. After a time horizon of five years, and assuming an offshore attitude index level of 1.1 (the mean value of the indexes for all regions), the legal assets held by criminal organizations in 2009 were equal to:

$$L(5) = \frac{0.89(1+0.052)}{1-0.89(1+0.052)} 0.7K_0 \left\{1-\left[0.10+0.8\left(1-0.4\delta_H\right)\right]\right\}$$
$$= \left[\left(1-0.7\right)^5\left(1+2.5\right)^5-1\right]\ 2.84K_0\left(0.1+0.32\delta_H\right) = 2.84\left(244.273\right)$$
$$= \left[0.1+0.32\left(1.1\right)\right]\ \text{US\$ bn } 313.57 (\ 0.54\% \text{ of the 2009 world GDP}),$$

with an accelerator equal to 1.28. Let us assume that the money laundering technology is fixed. Then it is evident that the size of the accelerator depends on the features of the anti-money laundering regulation.

In this respect, it is crucial to assume, all other things being equal, that the cost of money laundering depends on the effectiveness of the anti-money laundering regulation, given that the legal norms and their enforcement increase the transaction costs.

Therefore, we can assert that every improvement in the effectiveness of anti-money laundering regulation causes a decrease in the accelerator, and consequently in the value of money laundering activity, which corresponds to an increase in overall public welfare.

The proposed simulations can also be used to explore the possible effects of regulation on the total amount of legal assets held by organized crime. For example, in the case of Europe, it is possible to calculate the public benefits – that is, the increasing criminal costs – by eliminating the multiplier effect.

In order to reduce the multiplier value from 1.65 to 1, the costs of money laundering have to be increased from the supposed 32 percent (3.8 billion US dollars) obtained when the laxity index is equal to 1.5, to 78 percent of illegal profits (9.5 billion US dollars), with a laxity regulation index equal to 0.78. Therefore the cost variation ΔC is 5.45 billion US dollars. The corresponding public benefits are equal to 7.71 billion US dollars.

In conclusion, the simulations further highlight the relevance of the economic, although highly toxic, value which can be potentially generated by laundering activities all around the world.

The demand for laundering can originate in the revenues of any illegal and criminal activity in all the regions. The more concentrated the supply of laundering by the financial industry, the more important the role that banking secrecy plays in the overall money laundering mechanism.

1.7 Banking secrecy: gray macroeconomics

In order to conclude our analysis, it is necessary to intertwine white and black macroeconomics. In the present section we will make use of a classic income–expenditure model in order to examine the macroeconomic effects produced by the presence of criminal actors in both the legal and illegal sectors – that is, gray macroeconomics. Our aim is to analyze the relationships between legal economy, banking secrecy and illegal sectors.

To study the gray macroeconomics of banking secrecy we use the framework – proposed by Masciandaro (2000) – that assumes a short-term perspective in which the supply curve of our economic system is perfectly flat. Just for the sake of simplicity, we assume that our economy is closed: that is, only the internal illegal sector can use banking secrecy to implement laundering operations; it will be evident that by relaxing our assumptions the general conclusions we reach remain valid.

We assume that aggregate demand is built upon private consumption of legal, as well as illegal, goods and services. As a first step, the illegal sector is characterized by agents exclusively committed to criminal, and in general illegal, productive and distributive activities – whereas in the legal sector, agents are exclusively committed to legal activities.

Equation (1.35) sets legal income Y to be equal to the demand, expressed by private legal operators in terms of consumption and investment goods (respectively C and I), plus the government expenditure for goods and services G, plus the demand flow, K_c, coming from illegal operators. In addition, we must subtract from the total value of the product those illegal goods and services X_c, provided to legal operators by illegal agents.

$$Y = C + I + G - X_c + K_c \tag{1.35}$$

where

$$C = cY_d \qquad 0 < c < 1 \tag{1.36}$$

$$Y_d = Y - T - \overline{Z} \tag{1.37}$$

$$T = tY \qquad 0 < t < 1 \tag{1.38}$$

$$I = \overline{I} \tag{1.39}$$

$$G = \overline{G} \tag{1.40}$$

$$X_c = xY - \overline{R} \qquad 0 < x < 1 \tag{1.41}$$

$$K_c = wbY_c \qquad 0 < b, w < 1 \tag{1.42}$$

$$Y_c = X_c + \overline{Z} \tag{1.43}$$

As expressed in equation (1.36), the consumption expenditure C for legal goods by legal operators is a function of disposable income Y_d. The slope of the consumption curve c therefore indicates the legal operators' marginal propensity to consume legal goods. Disposable income Y_d is obtained by subtracting the value of illegal distribution activities Z and net tax revenues T from the total value of legal income Y (see equation (1.37)).

For the sake of simplicity, the demand for investment goods I, as well as the government expenditure G, are assumed to be independent from income and are held constant.

The demand for illegal goods by legal operators is directly related to income Y and inversely to Z, where Z indicates the State's ability to hold back crime (see equation (1.41)). In analogy with equation (1.2), x expresses the legal operators' marginal propensity to consume illegal goods.

The variable Y_c is criminal agents' income obtained from illegal production and distribution activities, respectively X_c and Z. However, such income does not have immediate purchasing power within the legal economy and must be laundered first in order to conceal its illegal source. Here the economic function of laundering comes in.

Therefore, only a fraction w of Y_c (see equation (1.42) is actually turned into effective purchasing power on legal markets at the end of the laundering process. Parameter w can be then considered as an index of the effectiveness of anti-laundering regulation: the higher w is, the more effective the regulation is.

Finally, the demand flow K_c expressed by criminal operators is assumed to be the function of Y_c by means of parameters w and b (where b indicates their propensity for consumption). The equilibrium income is then equal to:

$$Y^* = \frac{\overline{AD}}{1 - c(1-t) + x(1-wb)} \tag{1.44}$$

$$\overline{AD} = \left[\overline{I} + \overline{G} + (1 - wb)\overline{R} + (wb - c)\overline{Z}\right]$$

$$m = \frac{1}{1 - c(1 - t) + x(1 - wb)}$$

As a second step, we introduce the so-called legal–illegal economy within the analytical framework adopted above.

Our definition of the "legal–illegal economy" can be synthesized by a few different assumptions, concerning the behavioral patterns followed by economic operators. We can now identify illegal operators among agents who are mainly devoted to illegal economic activities, but can also be involved in the production of legal goods and services. On the other hand, agents in the legal sector are eligible for being occasionally involved in illegal production and distribution activities.

Let us look at what happens to the set of equations of the income–expenditure model already presented.

The introduction of the legal–illegal economy implies that only a fraction α of the consumption expenditure for illegal goods is actually directed toward illegal producers:

$$Y = \beta C + \overline{I} + \overline{G} + w(1 - \alpha)X_c - \alpha X_c + K_c \qquad (1.31')$$

$$Y_d = Y - T - \alpha\overline{Z} + w(1 - \alpha)\overline{Z} \qquad 0 < \alpha < 1 \qquad (1.33')$$

$$K_c = wb\alpha\left(X_c + \overline{Z}\right) + b(1 - \beta)C \qquad (1.38')$$

$$Y_c = \alpha\left(X_c + \overline{Z}\right) + (1 - \beta)C \qquad 0 < \beta < 1 \qquad (1.39')$$

The same can be said about fraction β of the consumption expenditure for legal goods with respect to legal producers.

Therefore, the total expenditure capacity of the legal economy turns out to be modified as it appears in equation (1.35′): only a part of the expenditure capacity destined for the production of legal goods and services remains within the legal economy, while a fraction $w(1 - \alpha)$ of that expenditure capacity flows out toward the legal economy.

In order to express the criminal sector's income Y_c (see equation (1.43′)), we must now add the fraction of income coming from legal production $(1 - \beta)C$, as well as taking into account fraction α, which comes from illegal production and distribution activities. The same ratio underlines the new equations for disposable income Y_d and for the

demand component (i.e. the expenditure capacity) K_c expressed by the criminal sector.

The new equilibrium income can be written as:

$$Y^*_{\alpha,\beta} = \frac{\overline{AD}_{\alpha,\beta}}{1 - c\left[\beta + b(1-\beta)\right](1-t) + x\left[\alpha(1-wb) - w(1-\alpha)\right]} \tag{1.40'}$$

$$\overline{AD}_{\alpha,\beta} = \overline{I} + \overline{G} + \overline{R}\left[\alpha(1-wb) - w(1-\alpha)\right] + \overline{Z}\left\{wb\alpha - \left[\alpha - w(1-\alpha)\right]c\left[\beta + b(1-\beta)\right]\right\}$$

$$m_{\alpha,\beta} = \frac{1}{1 - c\left[\beta + b(1-\beta)\right](1-t) + x\left[\alpha(1-wb) - w(1-\alpha)\right]} \tag{1.45}$$

given the following inequality:

$$c[\beta + b(1-\beta)](1-t) > x\,[\alpha(1-wb) - w(1-\alpha)] \tag{1.46}$$

If condition (1.46) is satisfied, the multiplier $m_{\alpha,\beta}$ will be bigger than 1. In this case, a variation in either investment or government expenditure will be absorbed relatively more by the legal than by the illegal economy, ensuring that the traditional multiplying effect on legal income takes place.

The adoption of a legal–illegal economic framework modifies the multiplying effect of legal agents' marginal propensity to consume legal goods, owing to the new distributive asset of income which comes from legal activities of production. From this perspective the following condition is expected to hold:

$$c\,[\beta + b\,(1-\beta)](1-t) < c\,(1-t) \tag{1.46}$$

Condition (1.46) states that the entry of illegal agents into legal productive activities, causes a reduction in the multiplier and subsequently a decrease in legal equilibrium income. The economic implication is that only a fraction b of the income resulting from legal productive activities carried out by illegal operators, and a fraction β of those carried out by legal agents, are actually flowing into the legal economy in the form of expenditure capacity.

Let us also consider how the multiplying effect of parameter x (the marginal propensity to consume illegal goods) changes:

$$x\alpha\,(1-wb) - xw\,(1-\alpha) < x\,(1-wb) \tag{1.47}$$

In comparison with the previous case, the multiplying effect of x undergoes some variation, according to the new distribution of illegally produced income. Once it has completed the laundering process, fraction $[xw(1 - \alpha)]$ of such income – which relates to the legal operator – is re-introduced into the legal economic system in the form of expenditure capacity. Leaving apart the portion $[x\alpha(1 - wb)]$ of laundered income used by illegal agents to buy legal goods, only fraction α is subtracted from the total value of legal income.

Equation (1.47) shows how the entry of legal operators into the illegal sector increases the multiplier and therefore the equilibrium level of legal equilibrium.

Therefore, if we set $Y = GNP$, we can conclude that the inclusion of the illegal sector into national income accounts actually causes an increase of the GNP value.

In summary, the introduction of the legal–illegal economy pushes in two opposite directions by increasing and decreasing the level of legal income at the same time. Comparing the multipliers m and $m_{\alpha,\beta}$ we find that:

$$m_{\alpha,\beta} > m$$

if

$$w < \frac{c(1-t)\left\{1-\left[\beta + b(1-\beta)\right]\right\} - x(1-\alpha)}{x\left[(1-\alpha - b(1-\alpha)\right]} \tag{1.48}$$

The component on the right-hand side of equation (1.48) can be either positive or negative depending on the sign of the numerator. While the denominator is negative, the sign of the numerator is positive or negative whether it is $c(1 - t)\{1 - [\beta + b(1 - \beta)]\} > x(1 - \alpha)$ or $c(1 - t)\{1 - [\beta + b(1 - \beta)]\} < x(1 - \alpha)$, respectively.

If the numerator has a positive sign, the right-hand side parameter of equation (1.48) is negative and condition (1.48) is satisfied, as parameter w ranges between 0 and 1. If the numerator is negative, in order for condition $m_{\alpha,\beta} > m$ to be satisfied, the parameter w must be bigger the smaller is the marginal propensity in legal consumption c and the bigger is the marginal propensity in illegal consumption x.

Given that anti-laundering regulation shows some degree of ineffectiveness, the equilibrium level of legal income increases – *ceteris paribus* – after the inclusion of the legal–illegal economy in the model.

Shifts in autonomous expenditure affect equilibrium income more intensively when the anti-laundering regulation is less effective (i.e. the supply of banking secrecy services is more active). The crucial implication of the legal–illegal analytical framework therefore concerns the concrete incentive to relax the stringency of the anti- laundering regulation in order to boost the equilibrium level of legal GNP. The pollution of the legal economy can be influenced both by general policies against crime, synthesized by R, and by the anti-laundering regulation, as expressed by the parameter w.

General anti-crime policies, however, do produce ambiguous effects on the equilibrium level of legal income, as we can see in equation (1.49):

$$\frac{dY}{dR} = \frac{\alpha(1-wb) - w(1-\alpha)}{1 - c\left[\beta + b(1-\beta)\right](1-t) + x\left[\alpha(1-wb) - w(1-\alpha)\right]} > 0 \qquad (1.49)$$

if

$$w > \frac{\alpha}{1-\alpha(1-b)} \qquad (1.50)$$

If condition (1.48) is satisfied, the introduction of the legal–illegal economy induces a shift in equilibrium income, as shown in Figure 1.1 (AD is set equal to $AD_{\alpha,\beta}$, in order to simplify the graphical representation).

Condition (1.50) requires w to be in the range between 0 and 1, and directly related to α.

It is worth noting that a possible synergy can exist between general anti-crime policies and anti-money laundering regulation since general policies may have an expansive effect on legal income, provided that anti-money laundering regulation shows some degree of effectiveness. Synergies, however, tend to decrease as α, the fraction of illegal income received by criminal agents, becomes larger.

Another finding from condition (1.50) is the fact that a more stringent anti-money laundering regulation (i.e. a smaller w) brings about a smaller expansive effect of ΔR on legal income. If the following is satisfied,

$$w > \frac{\alpha}{1-\alpha(1-b)} \qquad (1.51)$$

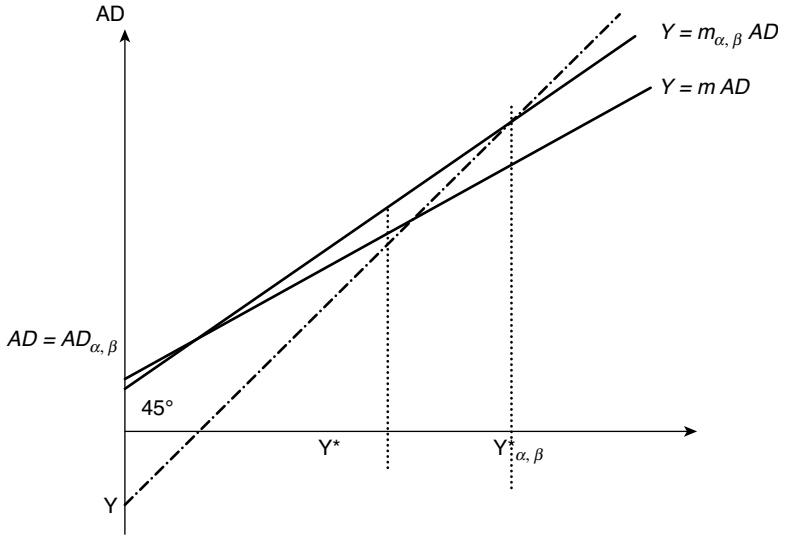

Figure 1.1 The equilibrium level of legal income

this condition holds as well:

$$\frac{d}{dw}\left[\frac{dY}{dR}\right] = \frac{(\alpha - 1 - \alpha b)\{\gamma\} - \left[-x\alpha b - x(1-\alpha)\right]\left[\alpha(1-wb) - w(1-\alpha)\right]}{\left\{1 - c\left[\beta + b(1-\beta)\right](1-t) + x\left[\alpha(1-wb) - w(1-\alpha)\right]\right\}^2} > 0$$

$$\gamma = 1 - c\left[\beta + b(1-\beta)\right](1-t) + x\left[\alpha(1-wb) - w(1-\alpha)\right]$$

The consequence, which is shown above, appears clear because the multiplier is reduced as w becomes smaller, with the subsequent effect of decreasing the multiplying effect, owing to the reintroduction of laundered illegal income into the legal economic system. Such laundered illegal income includes both the portion related to legal operators $w(1 - \alpha)X_c$ and the one used by illegal operators to buy legal consumption goods $wb\alpha(X_c + Z)$ (Figure 1.2).

As w decreases, the multiplier and the slope of the AD curve get smaller. For equal variation of R, the change in legal equilibrium income widens as the parameter w becomes larger.

In conclusion, our income–expenditure model assumes that the two variables show equal amounts within the same economic system. In this

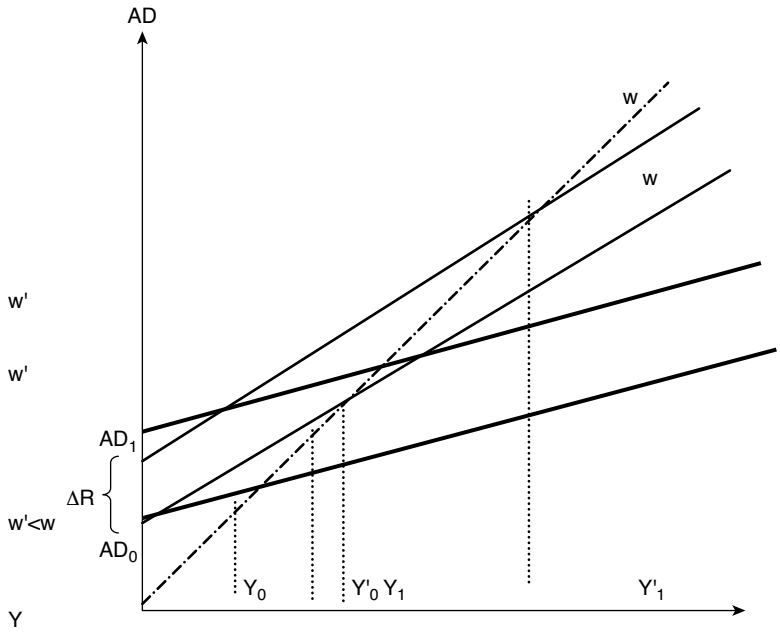

Figure 1.2 Policies against crime and legal income

analytical context, legal and illegal economies are assumed to be characterized by conceptually separable and distinct activities.

Such a taxonomical boundary, however, is blurred by some likely intersections between legal and illegal economies, as illegal operators may happen to engage in legal activities and vice versa.

The presence of a blurred area in what is officially considered to be a legal economic domain obviously carries some consequences in terms of GNP accounts (even if we only take into account those legal agents whose income is partially gained from an illegal source).

Incomes that originate from illegal sources, although they are not included in GNP national estimations, are eventually spent – and therefore they affect consumption levels. The results of this misinterpretation in national accounts are represented by an underestimated value for GNP with respect to consumption, and a subsequent global underestimation of aggregate savings (i.e. of the difference between gross disposable income and final consumption).

Propensity for consumption and saving, of course, end up being respectively overestimated and underestimated.

Such alterations become crucial if we consider that policymakers actually conceive and implement economic policies decisions that are based on biased economic figures and estimations.

An incorrectly estimated propensity for consumption, for example, affects the multiplier and subsequently affects the impact of changes in government expenditure on GNP. For instance, from the monetary policy perspective, the underestimation of GNP growth may induce an under-dimensioned money supply with respect to real demand.

The above considerations apply to the informal economy, where the legal–illegal sector belongs, and concern illegal activities carried out by legal operators.

In summary, an unbiased evaluation of GNP, which takes into account informal activities, can help to meet the requirement of concrete representation of a nation's expenditure patterns and correct verification of the effects of economic policies.

Going back to our framework, we can note that the introduction of the legal–illegal economy into the basic analytical framework causes a trade-off in terms of public policies between quantitative growth of national wealth and law enforcement, at least from a short-term perspective.

The resolution of this trade-off requires a thorough evaluation of what levels are considered to be desired growth levels and has a crucial role in anti-laundering regulation, given its consequences for banking secrecy.

The introduction of the informal illegal sector into our model causes an increase in the equilibrium level of legal income. However, if such a sector is taken into account in GNP as a component of national wealth, it might eventually gain a remarkable degree of self-legitimization.

This fact could give rise to a dangerous incentive for relaxing the stringency of the anti-crime laws from the perspective of boosting national income growth. If we assume that illegal operators might also engage in legal activities, the expansive effect caused by to the introduction of the informal illegal sector is weakened, if not even inverted. This result depends on the fact that illegal operators spend only a fraction of their legally produced incomes within the legal economy, according to their propensity for consumption, as expressed by parameter b. Fraction $(1 - b)$ can therefore be considered as a net subtraction of resources from the legal economy (assuming that such an income will be used in financing illegal productive activities).

In summary, the introduction of the legal-criminal economy has an ambiguous effect on the legal equilibrium income. The interesting finding from this is that such an effect shows some degree of expansive power if anti-laundering regulation is ineffective (i.e. the supply of banking secrecy is robust).

In such a case, the subtraction of expenditure capacity from the legal economy, owing to the presence of illegal operators in legal activities, is counterbalanced by larger flows of laundered illegal income.

Once again, the adoption of a short-sighted growth-oriented perspective by policy makers may induce a relaxation of anti-crime measures, including anti-laundering regulation.

The strengthening of general anti-crime policies within the legal–illegal economy, has an ambiguous expansive effect on equilibrium income – unlike the situation in the previous model.

In particular, we find that there are some feasible synergies between such policies and anti-laundering regulation: the implementation of general measures in the fight against crime generates expansive effects on legal equilibrium income, provided that anti-laundering regulation shows some degree of effectiveness.

Such synergies, however, become weaker as the fraction of illegal income α directed to illegal operators becomes bigger. Moreover, the expansive effect mentioned above is lowered by the increasing effectiveness of anti-laundering regulation.

Such a result highlights the need for evaluating the appropriateness of the tool represented by anti-laundering regulation, without abstracting from each specific institutional and economic context.

If the policymakers responsible for conceiving anti-crime measures are sensitive to the possible effects of such policies on GNP, they should tune the stringency of anti-laundering regulation and the related level of banking secrecy according to the value of α, and to their perceived goals with regard to GNP growth.

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2
Banking Secrecy, Regulation and Supervision

2.1 Introduction

In Chapter 1 we analyzed the economics and politics of banking secrecy, highlighting the key role of financial regulation design and consequently focusing our attention on policymakers' choices.

In each country the incumbent policymaker evaluates the expected benefits and costs of offering banking secrecy, in order to decide whether or not to be compliant with international best practices. In this part of the book, we will discuss the design and the implementation of regulatory and supervisory architecture when the policymaker decides to be compliant (i.e. to prevent and combat banking secrecy). The next chapter will be devoted to a study of the effects on international capital markets when policymakers decide to use banking secrecy to pursue their goals, which means that the risk of international sanctions is different from 0.

In the last two decades the design of regulation and supervision to combat banking secrecy has been developed and implemented by institutions that are associated with specialized agencies: the financial intelligence units (FIUs). This means that an authority with clear responsibilities for detecting money laundering activities has assumed a precise identity: one that is recognized across the world. This part presents the economics and politics of the FIUs, highlighting the importance of having a financial FIU (FFIU): that is, an FIU which is part of the overall financial supervisory architecture. Furthermore, the effectiveness of an FFIU depends on its governance, which has to be characterized by independence and accountability.

Chapter 2 is organized as follows. From Sections 2.2–2.5, we discuss the specialness of the banking and financial industry in facilitating the

money laundering phenomena, and then in Section 2.6 we formally explore the rationale behind establishing a specialized agency – in this case the FIU – to combat banking secrecy.

We discover that, from a theoretical point of view, the best FIU is likely to be a financial supervisor, provided that its governance guarantees independence and accountability. In Section 2.7, our FIU benchmark is compared with the existing institutional models. In Section 2.8, we further analyze the governance of the FFIUs, taking into account the ongoing evolution of financial supervisory architecture as a whole, which is characterized by changes in supervisory consolidation, as well as changes in the role of the central bank as a banking supervisor.

However, Section 2.9 shows that the evolution of the FIUs across the world is still in a state of flux. Although nowadays the FFIU is still the most common framework, an empirical analysis of the establishment of FIUs shows a more nuanced reality; we find that, following the 2001 terrorist attack, the adoption of an FFIU is unlikely. September 11 seems to be a key event with regard to the more recent design of anti-money laundering supervisory architecture, which signals that politicians seem to prefer the law enforcement model of the FIU (LEFIU). By using our political economy framework, we are able to offer two possible and non-alternative explanations.

2.2 Secrecy and the specialness of banking

One wonders what kind of procedures the crime of money laundering follows, and how important the banking and financial system is from this standpoint. Following on from and updating the insights offered in Masciandaro et al. (2007), the traditional approach to the analysis of illegal markets must be supplemented with considerations of the peculiarities of the financial markets.

In other words, the crucial question is: is there any specific feature of banking and financial laundering that explains why laundering becomes an activity performed by intermediaries – whether intentionally or not – despite the risks caused by involvement in laundering transactions? To give a convincing answer to this question, we must explain the reasons for the high correlation between the vulnerability of a country to the money laundering phenomena and the vulnerability of its banking and financial sector.

The distinctive feature of banking and financial laundering can be determined by analyzing the peculiarities of the functions that the

financial firms perform within the economic system. We have to take into account that over the past two decades, given the evolution of the architecture of markets and the characteristics of intermediaries, the differences between banks and non-banking financial firms has been blurred. This inevitably affected the attitude of the various types of intermediaries toward money laundering.

Through an in-depth exploration of the specialness of financial firms we can derive useful indications of the specificity of their relative money-laundering function. We start with a short description of the specific functions performed by the financial intermediaries in general, and then we will consider the key differences between banks and other financial intermediaries.

According to the traditional approach to the analysis of economic functions of financial intermediaries, these firms essentially serve three recurrent purposes: to reduce transaction costs; to reduce counterparty risks; and to coordinate the time preferences of heterogeneous economic agents.

By reducing the overall transaction costs for other economic agents, financial intermediaries improve the ability of those agents to choose how to allocate their own purchasing power in terms of consumption, savings and investment. Thus, the intermediaries ultimately constitute an industry in which the services offered and sold are intrinsically intangible, with information content that is high, but is not uniformly distributed among all the market participants.

Financial firms become familiar with the different characteristics of economic agents by offering and selling their services. Each intermediary pursues the maximizing of its profit, precisely through the management and enhancement of its information assets, again in a sector where information is not uniformly distributed. Therefore, financial firms are ultimately endowed with information assets that are more extensive than, and different to, those of firms in other industries.

As a result, the financial industry ultimately distinguishes itself, with respect to the purpose of money laundering activity, through two crucial features:

- a higher than normal degree of what we can call opacity (a synthetic way to stress the role of asymmetric information), since the exchanges and flows of purchasing power are filtered, coordinated and managed by specialized operators;
- the privileged position of such operators.

It should be emphasized, in any case, that although incomplete and asymmetrical distribution of information between agents – which stipulates various forms of contract or agreement – is marked in the provision of financial services, but it is certainly not a prerogative of financial markets: it manifests itself, for example, whenever professional services are examined.

In any case, the central role – quantitative and qualitative – of the financial industry within the overall economic system clearly shows evidences of opacity and at the same time centrality of the specialized operators.

The evolution of theoretical literature on financial intermediation has, in recent times, become more focused on the question of the redistribution of information as the fundamental feature of financial activity. In markets where each agent, on the supply or demand side of funds or services, has a limited information set, financial firms are ultimately characterized as operators who specialize in the handling of information.

Financial contracts can become extremely complicated, because their outcome is ultimately determined or evaluated by new information or events, and because the clients themselves can be absolutely heterogeneous. The relationship between intermediaries and their clients is realized through repeated and continuous exchanges, permitting both sides to extract information of a confidential nature.

Inside the financial sector, a special role is played by the banks, which are intermediaries characterized by the simultaneous offering of two services. The banks supply deposit contracts, which can meet the needs of payments and cash, and at the same time they offer loan contracts, which generally cannot be transformed into marketable assets.

Banks thus emerge as special financial firms, since both their deposit and loan contracts permit them relevant economies of scale and diversification in the management of information. Thus, in markets that are "opaque" by definition, the banks become the keepers of confidential information on the beneficiaries of the loans, and on the users either of payment services or, more generally, of the services they provide in general.

The function of manager of the payments system places banks in a crucial position with respect to money-laundering activity. The payments system will be more efficient, if it reduces the transaction costs in transforming potential choices in actual ones.

But if this is true, this system can also be a potentially optimal and efficient vehicle for transforming the purchasing power of illicit

revenues into actual purchasing power. In other words, the management of the payments system has a positive value for honest operators, as it facilitates resource allocation choices. However, it might also prove crucial for criminal agents, who – as we pointed out in Chapter 2 – are seeking to reduce the amount of illegal transactions, in order to minimize the risks of detection, and thus the costs of sanctions and punishment.

It is therefore evident that in markets like the banking service markets, where information is neither complete nor easily available, the likelihood of concealing the purchasing power from illegal transactions and exchanges becomes greater, and the firms active on those markets (i.e. the banks) play a major role in it.

To sum up, the specific feature of banking and financial laundering is that it is conducted through markets with asymmetric information. Consequently, the effectiveness of law enforcement will crucially depend on the characteristics and actions of the banking and financial operators.

This feature creates a crucial differentiation between laundering through banks and the types of crime that are traditionally examined by economic analysis, where the public authorities delegate enforcement solely to the police forces. As we will discuss in the following pages, in the prevention and repression of laundering through banks, the banks can play an important role alongside law enforcement. The banks can be an effective instrument both of money-laundering activities and anti-money laundering activity, but the degree of their involvement can be quite different case by case.

On the one hand, we can have the situation of a collusion between the bank and the actor who demands money laundering, where one or more professionals know perfectly well that the transaction in the pipeline is a laundering operation. On the other hand, we have to consider that situations are likely to occur in which an honest, but ineffective, bank is unable to detect suspicious transactions. And on top of that, a third option is possible. Since not every money-laundering operation produces suspicious transactions, if the money-laundering activity is perfectly camouflaged, the involved bank could be at the same time honest and effective in implementing anti-money laundering procedures.

Therefore an agent that demands money laundering can implement their illegal operation by using both criminal and honest bankers. At this stage of our investigation we will keep the two possible configurations of banks distinct, in order to shed light on their quite different aims, incentives and features.

Furthermore, it is worth noting that the assumption about the distinction between honest bankers and criminal bankers is quite consistent with the actual design of money-laundering regulation all over the world. In particular, the regulators simultaneously try to discourage the emergence of dishonest professionals and to realize an incentive alignment with the honest ones.

2.3 Combating secrecy: information and incentives

We now concentrate our attention on the design of regulations, assuming that in the markets just honest bankers operate. In this case money laundering operations can be designed and implemented by outsiders.

Money laundering actions, if the professionals are honest and proper, however, can leave traces and represent irregularities in the banking and financial accounts. Therefore the authorities rightly find it efficient to request the cooperation of the banking operators. Furthermore, the more effective this cooperation is, the lower the risk of money laundering becomes. So the principal effect, in terms of laundering risk, of anti-laundering laws that aim to obtain the cooperation of honest bankers, will depend on how acceptable the laws are to those intermediaries. The correct alignment of incentives is necessary, in order to obtain effective of the anti-money laundering regulation.

Our starting assumption is that each form of regulation tends to modify the structure of the incentives to the agents, and therefore their behavior. The effectiveness of a regulatory regime therefore depends on its ability to influence the decisions of operators in the correct direction.

In other words, the "acceptability" represents a cornerstone of all banking and financial regulations, and therefore of the anti-money laundering rules as well. It means that financial regulation has to avoid altering the incentive structure, as this will generate ineffective, or even counterproductive, behavior in intermediaries.

A drop in regulatory effectiveness will result in an increase in the risk of money laundering. The possibility that regulation may generate counterproductive effects, in relation to the degree to which it is accepted by the regulated firms, is a general phenomenon, when there are at least regulatory compliance costs that can alter the cost and benefit analysis of the regulated agents.

As the costs of regulation rise, the level of regulation acceptability by professionals declines. This implies a change in the structure of incentives, and thus behavior, that may become inconsistent with respect to the objectives of the regulatory effort. As a result, each regulatory

system, to be effective, must be sufficiently acceptable by the firms it regulates.

The costs of money laundering regulation must be offset by the expected gains from regulation, so that the final net result is a decrease in laundering risk. A distinction must be made between earnings expected at the industry level and gains expected by the individual banks.

For both types the law targets the regulation of honest bankers and is designed to deter criminal professionals. At the aggregate level, the banking industry obviously encourages all the market participants to favorably accept the rules – and that represents an obstacle to the diffusion of money laundering phenomenon.

However, the optimal design of anti-money laundering regulation, considering net expected gains at an individual level, is not so automatic.

Earlier in this part of the book we saw that the banking and financial industry can play the pivotal role of preferential vehicle for money laundering in the development of the criminal sector. Laundering through banks has an essential function in the overall growth of criminal activity: it helps to separate the liquid funds from their illicit origin, whatever that might be, and thus allows them to be reinvested in licit or illegal activities. The more the risk return motivates reinvestment in illicit activities, the more the demand for money laundering increases, exalting the role of laundering as a multiplier of all the types of criminal and illegal activity. The process can be hindered if the money-laundering activity implies costs for the criminals: all other conditions being equal, the costs will increase as the anti-money laundering regulations become more effective.

It is worth noting that the cooperation requested from banks in terms of reporting and monitoring has gradually become more stringent as money-laundering techniques have advanced. Let us reconsider the definition of money laundering with respect to any financial transaction: this transaction not only has an economic function of its own but, if adopted for money-laundering purposes, it also fulfils an illegal function.

Now the assumption is that, precisely because the transaction in question is serving an unusual and illegal purpose, it should be distinguished by elements of irregularity with respect to its normal and physiological features. But which are the sources of the irregularity?

By definition, money laundering is a procedure in which an agent transforms a given amount of potential purchasing power into actual purchasing power, in order to minimize the incrimination risks. Thus

the irregularity can refer to at least one of the three elements of money laundering – the agent, the procedure or the amount – of a given banking transaction.

The evolution of money laundering procedures has made the detection and monitoring of the latter more difficult. This has happened precisely because evolution has made the concealment and separation of the three components of a laundering transaction increasingly effective. This effect is obvious if we compare, for example, a traditional money laundering operation – the "smuggler" – with a more sophisticated version – the offshore and/or online money laundering operation.

An important point to note is, therefore, the growing complexity of identification of money laundering irregularities. A second important point to take into account is the fact that a banking transaction might present forms of irregularity without involving an attempt to launder money. Therefore, the irregularity cannot be regarded as a necessary and/or sufficient condition for detecting money laundering. In other words type one and type two errors may occur.

Thus the main question is: what role can banks play in reducing the vulnerability of the legal markets to attempted criminal pollution? The answer, as we shall seek to demonstrate in the following pages, must be sought using economic analysis, with particular attention to two key features of the reality of the banking and financial industry: information and incentives.

The effectiveness of anti-money laundering regulation, and therefore the greater impermeability of the banking and financial system, depends on the first of the key feature: information. One must consider, as we did above: that the peculiarity of the illegal activity in question is that it is conducted in markets dominated by various forms of asymmetric information. The banks, by virtue of their information assets, are therefore in a position – when it is efficient to delegate them an agency function, as actually happens – to detect and report criminal instances of money laundering.

Given that the banks, the public authorities and clients face a series of situations where information is incomplete – the nature of the client, the nature of the intermediary, his diligence in performing the function of an agent, and environmental factors independent of the conduct of either client or intermediary – the central problem of anti-money laundering regulation will be to design a system of procedures and incentives that will induce the banking agent to act effectively with respect to the

necessary supply of information. In other words, the regulation must influence the choices made by banks in the right direction.

The risk of misconduct is not just theoretical: as stressed earlier, one general problem of regulation is precisely how to minimize the chance that expected costs will exceed the expected benefits, and thus how to encourage the agents who do not accept this system of rules to conduct themselves in an elusive manner.

We must again emphasize that it is not sufficient for the regulatory regime to appear effective at the aggregate level, and perhaps formally accepted at the industry level. The macroeconomic advantages of money laundering regulation, as represented by greater stability and efficiency in a safe and sound financial system, do not automatically guarantee effective behavior at the level of the individual bank, who could, on the contrary, act as a free rider.

For the individual bank there is a specific tradeoff between the function of agent and the relative costs, which is linked, on the one hand, to the management and transmission of information and, on the other hand, to the partial or complete loss of a traditional asset such as confidentiality.

If the roles and obligations of intermediaries involved in anti-money laundering action have less of a positive effect on incentives, the risk that the banks will find it optimal to expend the minimum effort becomes greater, given the fact that others are either making the necessary effort or relying on the competitive advantages of not doing so. If it is optimal for each bank not to make an effort at all, none of them will.

The design of an effective regulatory architecture must, therefore, take the second feature into consideration: incentives. Banks must find it optimal to perform their function as an agent effectively. But, given the complex nature of a banking organization and the plurality of relationships with the various law enforcement authorities, the system of rules must have a positive effect on the resources deemed important by intermediaries, in order to incentivize the latter.

Among other things, we will consider the possible role of reputation: if a bank operates in markets that assign value to endowments, such as reputation, the regulatory system must take that into account. It will then be the banks themselves that are endogenously motivated to ensure that the structure of internal incentives in each individual role (from top manager to teller) is consistent with the fight against money laundering.

2.4 Combating secrecy: the relevant players

The rationale described in the previous chapter can now be organized and examined through a simple framework. In defining the characteristics of anti-money laundering regulation, the behavior of at least two agents must be taken into account: on the one hand we have the regulator–supervisor and, on the other, the honest bank. The task of the former is to pursue financial integrity by designing effective anti-money laundering rules and monitoring their effects in terms of lowering the laundering risk.

Let us highlight the fact that in the real world the responsibilities of regulator and supervisor are not only separate, but also exceedingly complex and diversified. In general, we assert that the principal–agent theory is the appropriate analytical framework for analyzing the design of the anti-money laundering regulation framework. Society is the main principal who benefits from the financial integrity of individual banks and the banking system as a whole, and the regulatory authority is an agent of the government. But the question is not so simple.

In addition to the principal–agent approach to the explicit contract between society (taxpayers) and the regulator (social contract), two implicit contracts, with associated risks of capture, can be identified. These are the government-driven and industry-driven contracts.

An implicit contract between the government and the regulator could exist within the framework of the grabbing-hand theory. According to this theory, the contract would be designed to extract short-term political rent from regulator. For example, a corrupted government may put pressure on the regulator not to implement an effective anti-money laundering policy, given its connections with organized crime and/or specific constituencies which take gains from the growth of the illegal activities, including tax evasion.

Another implicit contract may exist between the banking industry – as a vested interest group – or even between individual banks and the regulator. This implicit contract would serve the specific interests of the regulated firm(s): for example, by minimizing the compliance costs, whatever the negative consequences on the effectiveness of the fight against the laundering of illegal capital.

Last but not the least, there is the risk that the regulator will pursue its own interest, which might not be consistent with social welfare. This self-interest might be present in its financial revenues, if the regulator is corrupted. Obviously the interests of the government and/or the

banking firms can dominate the supervisor through their influence on his own interest, such as his career growth and financial reward.

Alternatively, the banking industry's capture could be an indirect case of political capture, or vice versa. In other words, the grabbing-hand theory, the capture theory and the career concern theory can be deeply intertwined. Finally, more than one authority can be involved in anti-money laundering activity, despite the fact that – as we will discuss below – the actual trend is toward the creation of specialized agencies.

The second agent, the honest bank, is an economic organization oriented toward profit maximization, and because of its banking activity it has private information assets on the economic agents operating in a given geographical area and/or economic sector. The bank is considered as an economic unit with the sole objective of seeking profit (maximizing shareholder value), without overlooking other possible purposes (maximizing stakeholder value).

Finally, the assumptions made do not exclude the possibility that the conduct of banking and financial operators could be sensitive to ethical considerations. If this should be the case, it is easy to show that the interest alignment between the regulatory aim to combat money laundering and professional preferences is more easy to obtain.

Furthermore, banks are viewed as special firms, in the sense that has been specified in the preceding pages: the characteristics of their assets and/or liabilities identify information assets, actual and potential, greater than those of the customers or other operators in contact with the financial industry.

The rationale behind the conduct of banks is thus reflected in their attempt to maximize the difference between expected revenues and costs. Any form of money laundering rule that aims to influence the conduct of the banking operators must therefore start from the knowledge that regulation should have a balanced impact on the structure of revenues and/or costs, since in any case it affects costs.

For banks, monitoring and reporting the flow of suspicious liquidity imply costs of two types: costs of investment in capital, physical and human; and costs of diminished privacy with respect to clients. These two types of costs result from anti-money laundering activity and will simply be called economic costs and privacy or reputation costs.

Information is the hub of the relationships between the authority and the honest bank. It presents itself in at least three fundamental points. The first point is the difference in information assets between the individual banks and the authority. Because of this difference, it is rational

for the authority to identify among the banking operators the parties that should be empowered to carry out the monitoring and reporting of anti-money laundering, in order to lower the risk of laundering. Therefore, it is rational for the authority to ask the bankers for cooperation in identifying money laundering operations.

The second reason why information matters, is the fact that the effectiveness of anti-money laundering action depends on the effort the intermediaries put into that action, an effort that the authority cannot observe and that is costly for the banks. The difficulty in observing the professional effort associated with the obligation of cooperation is paradigmatic: the intermediaries are asked to produce a commodity – that is, information useful for anti-money laundering purposes – the characteristics of which are difficult to recognize, either *ex ante* or, as is often the case, *ex post*.

The third point is the fact that the effectiveness of anti-money laundering depends not only on the effort of the intermediaries but also on factors which are out of their control: changes in the level of criminal pollution of the geographical area in which intermediaries operate; changes in the level of sophistication of the techniques used by the launderers, and so on.

The authority and the intermediaries only have partial information about those factors, and therefore must make a conjecture. As a whole, these variables are called environmental factors, and they can make the performance of anti-money laundering tasks either more or less difficult.

This means that the performance of the regulation is not totally attributed to the effort, strong or weak, of the operators but also that the relative role played by external factors cannot be measured with certainty – not even *ex post*. An example could be a little town with only one bank, where the total absence of reports on money laundering from the bank to the law enforcement agency might be the byproduct of two diametrically opposed situations: the complete absence of money laundering activity, or the total indolence of the local intermediary.

The design of anti-money laundering regulations must therefore take four fundamental aspects into account: information assets; the non-verifiability of bankers' efforts, the costliness of that effort for the intermediaries, and the non-verifiability of the influences of the different factors (agent effort, environment) on the performance (success rather than failure) of the regulation.

The overall framework can be summarized as follows. To oppose the demand for money laundering the authority faces a situation in which

it has to use banks, because of their specific information assets, by delegating the reporting of anti-money laundering to them. The intermediaries perform the reporting function with an effort, and the level of effectiveness of the anti-money laundering depends on this effort as well as on other environmental factors. The authority cannot observe the banker's effort nor its relative effectiveness in combating money laundering.

Regarding the problem of the intermediaries' effort, the first issue to discuss is the content of the reporting function, which describes the duties assigned by the anti-laundering rules and which requires an effort from the intermediary. The key elements are the transparency and consistency of the banker's responsibilities.

First, the regulation must minimize ambiguity in the definition of the purposes and procedures that characterize the bankers' anti-money laundering function, considering that greater ambiguity increases the expected compliance costs to the agent (inefficiency factor) and consequently increases the temptation to be elusive.

Similar reasoning applies to the consistency of the mandate: the purposes and procedures of the reporting of money laundering must be maximally consistent with each other, in order to avoid the undesirable chain of higher compliance costs that are associated with greater temptation to be elusive.

Since the bankers' effort is unobservable and costly, the anti-money laundering framework must be designed in such a way that it produces not only expected compliance costs, but also expected benefits for the intermediaries. In other words, the regulatory system should provide incentives for the banks involved in the anti-money laundering function, so that their anti-money laundering actions are consistent with its goals.

It is important to stress that the concept of incentives is of a different nature and broader scope than the concept of sanctions. It has a different nature, since incentives directly affect the economic sphere of the banks. The concept of incentives has a broader scope as well, since even sanctions, if appropriately designed, can represent a special kind of incentive. If the sanctions influence the economic dimension of the intermediaries' activity, so that there is a non-negative probability that they might be applied, sanctions become a possible cost item, and avoiding them is consistent with rational behavior on the part of the banker.

Ceteris paribus, the difference between the effectiveness of a sanction-incentive approach and a compensation-incentive approach depends on the probability that the sanction will be applied. In a world dominated by

asymmetric information – that is, the financial markets – it is less likely that the probability of sanctions is a sufficient condition for achieving an effective anti-money laundering policy. Therefore a well-designed anti-money laundering regulation should contemplate expected benefits as well as costs. The collective gains of the fight against criminal capitals must be internalized in some way, thus creating individual benefits.

The positive incentives will be indicated simply as economic and/or reputational benefits. If the regulatory system is properly balanced between economic costs and economic benefits, the conduct of intermediaries will be influenced in the favorable direction, and they will cooperate; otherwise, they will tend to make a less than optimal effort, and will be tempted to elude regulation. The banks' effort therefore depends on how the system of sanctions and incentives is applied.

Finally, once the anti-money laundering rules have been defined, and the banks have selected their individual levels of effort, the final outcome in terms of effectiveness of regulation will also be affected by exogenous forces that are independent from the goal of the authority and the intermediaries, which we can call environmental factors. As the technology employed by the launderers changes, for example, the difficulty banking professionals have in understanding that they are instruments of a laundering transaction may change as well.

2.5 Combating secrecy: a field experiment

In the previous pages we have assumed that the intermediaries have an information advantage that can produce collective advantages in the war against laundering, provided that the regulation addresses and fixes the problem of the compliance costs, which can deeply influence the professionals' day-to-day attitude.

Based on this background, we will now discuss the main results of an experimental analysis of how banks perceive the relationship of customers with the obligations imposed by the anti-laundering regulation. The analysis comprises a survey conducted in conjunction with an Italian bank that is present in 11 of Italy's 20 regions. The results of the survey were presented in Masciandaro (1999, 2002) and in Filotto and Masciandaro (2001). After more than a decade we can assert that the survey still provides an excellent understanding of the nature and extent of compliance costs within banking operations.

With the collaboration of an Italian federal bank, the authors formulated a survey questionnaire and submitted it to the managers of almost 400 bank branches located in 11 regions of Italy. The managers responded

to it during the period September–November 1999. That questionnaire contained a series of questions aimed at obtaining information useful for better evaluating the expected costs of the anti-laundering laws.

The study presented all the virtues and defects of indirect surveys: that is, party A (the bank manager) was asked for evaluations regarding the attitude of party B (the customer) on certain topics.

In the case of this survey, the defects are minimized, since the authors considered the following: the interest of the survey focused on the conduct of the type-A parties (bank managers), which in turn depended on managers' expectations and beliefs regarding the behavior of type-B parties (bank customers). In this manner, we obtained a proxy for the bank managers' perception, which was precisely the object of the survey.

Below we indicate the questions addressed to the bank directors via the questionnaire, along with their responses and analytical comments. This part will be followed by some overall considerations.

Question (1): What percentage of your customers are aware of the existence of anti-money laundering regulation in the bank, with relative obligations of recording and reporting for bank personnel? (Indicate a percentage between 0 and 100.)

The responses indicated that, according to the bank managers, 47.55 percent of the customers, on average, were aware of the regulations.

Considering the complexity and newness of the regulations, a value close to 50 percent certainly seems satisfactory; our expectations in this regard were lower. This should make it possible, within a reasonable time period, to further increase the level of awareness and thus reduce the negative impact of the regulation on the banks in commercial terms.

In fact, the awareness of the regulations becomes more widespread, the expected tangible and intangible costs to the intermediaries become lower. All other conditions being equal, broader awareness can reduce the expected intangible costs.

One condition, however, must be satisfied: the increase in quantity of the awareness should not reduce its quality. In other words, customers must be properly informed if, as a result of the effectiveness of the regulations, they can expect a reduction in the tangible and intangible costs of the anti-laundering regulations.

Then, to secure more information on the quality of the awareness of customers, we have to ask what the sources and characteristics of this awareness might be. Hence:

Question (2): On average, customers become aware of the existence of anti-money laundering regulations through (give only one answer):

(a) personal experience; (b) information prepared by the bank; (c) information prepared by public offices; (d) information from the media.

The fact that the bank managers feel that their direct and personal experience (48 percent) prevails over the information generated institutionally by the bank (41 percent: still considerable) suggests that informative action might help increase the level of awareness significantly. Further, it is worth noting that the managers feel that information on this subject is generated almost totally within the banks (88 percent). The awareness created by public communication and the media is apparently nil.

Informative action, which serves to reduce the expected intangible costs, can therefore have a short-term effect on the expected tangible costs, in terms of investments in training and support of various kinds. Thus, if the net effect is positive, the tangible costs should not be borne financially by the banks.

The average customer, then, seems to learn about the existence of the anti-laundering laws primarily through their banking contacts. But what is their perception of these regulations?

Question (3): On average, among customers who are aware of the existence of the anti-laundering laws, what objective do they feel the government is pursuing? (Provide only one answer.): (a) to combat organized crime; (b) to increase banking transparency; (c) to combat corruption; (d) to reduce banking secrecy; (e) to combat tax evasion; (f) to combat usury.

Though the managers feel that a significant portion of customers properly interpret the objectives of the laws (e.g. 43.36 percent of managers answered: to combat organized crime), the feeling is that another important segment of customers inaccurately associates the law with objectives, direct or indirect, of a fiscal nature (e.g. to reduce banking secrecy 44 percent; to reduce tax evasion 1 percent). It is also possible that some significant connection – and thus some ambiguity – might exist between the perception of a final objective (war against crime) and that the perception of an underlying objective (e.g. war against banking secrecy: 43.6 percent).

However, the fact remains that, all other conditions being equal, this widespread perception of the underlying objective is negative, because by definition it is an opaque, ambiguous objective, since it can be linked to more than one final objective.

This suggests that the main goal of any informative action must be to rectify the widespread perception of customers that the laws are passed

for improper purposes. This corrective action is probably more complex than simple informative action.

An inaccurate perception of the purpose of the legislation increases the expected intangible costs: the level of customers' inflexibility and hostility toward the collection of information is raised, with an increased risk of intolerance in the case of errors of the second type made by the intermediaries. And the intermediaries seem to be well aware of this.

The next question comes naturally: to what factors do you attribute this opacity and ambiguity in perceiving the purpose of the legislation?

Question (4): In your view, what is the reason for this perception of customers, in terms of the purposes of the anti-laundering laws? (Provide only one answer.): (a) personal experience; (b) information provided by the bank; (c) information provided by public offices; (d) information provided by the media.

The bank managers feel that direct and personal experience (39.6 percent), information generated institutionally by the bank (29.1 percent), and the media (30.9 percent) are the main sources. It is interesting to note how merits and demerits in perceiving the purpose of the laws are distributed differently, in comparison with the situation depicted when the question was simply to determine the sources of awareness of the laws (question 2). In this regard, the role – whether virtuous or misleading – played by information from the media comes to the fore (31 percent), while information from public sources (0.29 percent) continues to be negligible.

The fact that communication from public administrations regarding the laws is viewed as insignificant makes enforcement more difficult. It is important to determine whether the incorrect perception of the laws' purposes is related to the personal acquisition of awareness, the action of the media, or ineffective bank information.

To this end we tried to compare the responses to question 3 with those to questions 1 and 4. The result is clear: customers are more likely to correctly perceive the purpose of the regulations – that is, to combat crime – when they have been informed through bank channels.

However, the ambiguity and opacity of a law can depend not only on the sources of information but also on the actual behavior expressed in the venues (in this case the banks) where this law has thus far been the most applied. An inevitable question therefore arises:

Question (5): The anti-money laundering regulations impose recording and reporting obligations on the banks. Based on your experience, in what way do customers generally perceive the fulfillment of

those obligations? (Answer yes or no for each situation): (a) variable from region to region? (b) variable from bank to bank? (c) variable from window to window within the same branch?

If the law is variously applied (as suggested by the slight prevalence of "yes" answers, with 54 percent), this creates conditions of unequal competitiveness and the prerequisites for an incorrect perception of the nature of the obligations.

The perception of unequal fulfillment among banks of their duties associated with the anti-laundering laws is low (12.5 percent), as well as the perception of differences among branches of the same bank (3.5 percent).

This can be considered as a good result. In fact, in the context where the effort to fulfill certain functions is expended unequally, anti-money laundering regulation could result in undesirable forms of conduct. First, from the viewpoint of customers: if providing information is considered as a burden, and this burden is demanded unequally from one intermediary to another, customers will tend to prefer the less demanding intermediaries: all other conditions being equal, this fact increases the expected intangible costs for intermediaries that are more diligent about their anti-laundering duties.

Consequently, this situation could trigger the phenomenon known in the literature as "competition in laxity." The intermediaries that are penalized for being more diligent might find it advantageous to adjust their conduct "downward."

According to the survey, there seems to be uniform conduct with regard to the procedures defined by the bank. Greater discrepancies are noted between branches in the areas of the greatest concentration. In this case, the answers may also be subject, more than in other cases, to an affect in attitude.

Question (6): To fulfill their legal obligations, banks request and record information from their customers. In your view, this activity by banks is generally perceived by customers as aimed at compliance with *a legal obligation*: (a) in the interest of customers; (b) in the interest of the bank; (c) in the collective interest of the war against crime; *or a bank requirement*: (d) in the interest of customers; (e) in the interest of the bank; (f) in the collective interest of the war against crime.

The bank managers seem to feel that the information collection activity is generally perceived correctly (legal obligation in the collective fight against crime: 60 percent). It should be noted that this percentage rate is higher than the one associated with the purpose of the legislation being to fight organized crime (44 percent, question 3).

The two figures might appear to be in contrast. An explanation could be the following: in the concrete activity of information collection, bankers have the chance to "correct" customers' mistaken perception of the purpose of anti-laundering legislation, which is created, perhaps, with help of various sources (e.g. information media). If the explanation is the latter, it can strengthen the "public" role of the bank as a propagator of public utility information.

Thus the customers seem to have a fairly correct perception of the nature of the compliance, even though in almost 40 percent of the cases they fail to properly identify its purposes. However, the perception that the customers wrongly think that the information collected in the interest of the bank is low (12 percent). This reduces, but does not nullify, the possibility that other institutions could use the alleviation of enforcement for competitive purposes.

The collection of information for anti-laundering purposes can have a positive impact in terms of social welfare. But there is a risk:

Question (7): To comply with legal obligations, banks record and collect information from customers. How big is the risk that the average customer regards this activity as a violation of his confidentiality? (Indicate a percentage between 0 and 100.)

The mean value (44.5) is decidedly high. Thus there is a rather high perception among bank managers regarding the risk of a negative reaction of customers to the collection of information. This might be the case because those customers, despite the fact that they do not attribute the responsibility for the procedure to the bank (see question 6), might still be irritated with their relationship with the bank (which is already associated with other problematic connotations, due in part to other legislative provisions).

Among the conditions that are subject to change, however, a central role is played by the sensitivity of the average customer to violations of his confidentiality. For this reason, it might be advisable to examine in depth the bank managers' perceptions of the causes for which the violation of confidentiality can be justified for the average consumer. Thus it becomes necessary to also ask the following question:

Question (8): Bank customers will be more willing to accept regulations that reduce their confidentiality if they agree with its purposes. For the average customer, how important is it to combat (assign a score from 0 to 10): (a) organized crime? (b) corruption? (c) tax evasion? (d) usury?

Since the highest value on average is assigned to the real purpose of the anti-laundering laws (combating organized crime = 8), it is essential to correct the distorted perception of customers, who, apparently in the

majority of cases (compare the responses to question 3), associate regulation with objectives other than those that are related to institutions.

This confirms the need to take every possible measure – at bank level, in the intervention and guidance policies of the authorities, and even, if necessary, at the legislative level – to reduce and even eliminate any ambiguity regarding the purposes of the regulations. If the customers assign greater importance to what we might call their "confidentiality asset," the benefits become greater.

But how important is this asset in the decisions of customers? Since it is an intangible asset, unlike interest rates and the technical characteristics of banking and financial products in general, it is rather difficult to measure. Nonetheless, it is interesting to know how important confidentiality is for customers, from the viewpoint of bank managers. So it is important to delve deeper into this aspect.

Question (9): Each customer demands of his bank: (a) service quality; (b) reasonable rates; (c) assurances of confidentiality. For your average customer what is the relative importance of (a), (b) and (c)? (Distribute a total of 100 among the three items).

Confidentiality is certainly a characteristic closely connected with other intrinsic and economic aspects, in the strict sense, of the banking service. But the mean value of 28.54 seems rather high and, if considered together with the result of the preceding questions, represents the high risk of generating ineffectiveness in the regulation.

In fact, growing competition in the market for banking and financial products does not seem to exclude the confidentiality asset. If this is the perception of the bank managers, it means that the anti-laundering laws affect an important aspect of the bank–customer relationship. The responses obtained also seem to confirm that the increasing diffusion and utilization of information among banks' service-users does not diminish the sensitivity of each operator regarding the protection of its personal information capital.

In light of the results obtained from the survey, we can formulate some conclusions. We must first stress that an economic analysis of money laundering and the associated regulation can indicate how to guide the conduct of the intermediaries properly, for the purpose of joining the efficiency of their conduct with effectiveness in the pursuit of social welfare objectives.

Furthermore, the study of public operations of deterrence and contrast must include an economic and business cost-benefit model that studies and forecasts the consequences of programs, such as those for anti-

money laundering regulation, that have an impact on the economic activity of the financial intermediaries.

The analyzed model has examined the case of the honest (or unaware) intermediaries that the legislators regard as the fulcrum of anti-laundering regulation. An honest bank is interpreted as a profit-maximizing economic organization that has specific information capital on the economic actors operating in a given geographical area.

The rationality of the bank is reflected in the desire to maximize the difference between revenues and costs. Therefore, to introduce an efficient anti-laundering regulation, an authority – if it wishes to influence the conduct of intermediaries – must take into account that regulation should have a balanced impact on intermediaries' income and expense structure, considering that regulation in any case increases costs. The anti-laundering duties, in fact, require banks to incur two types of costs: investments in capital (physical and human) and reduction in confidentiality toward customers (strategic *asset* in banking activity).

2.6 The financial intelligence unit: economics and politics

In recent years, the design of the regulatory and supervisory regulations to combat money laundering has been influenced by an interesting phenomenon: to ensure economic and financial integrity, financial intelligence units (FIUs) have been established in several countries, in order to make the national and international fight against organized crime, terrorism and illegal activities more effective. In other words the authority with clear responsibilities in detection of money laundering activities that we have described in the previous chapters is acquiring a precise identity around the world. The objective of this chapter is to analyze, from an economic and political point of view, the action of an FIU.

To evaluate the phenomenon of the creation of financial intelligence units (FIUs), it is appropriate to begin with an economic model. In general, an FIU stands between the policymaker and the banks. Therefore, to study this kind of situation the most natural framework is a hierarchical principal–agent model.

2.6.1 Economics

In order to analyze the design of an effective anti-money laundering (AML) regulation we propose a simple economic framework, adapting a standard principal–agent model, as proposed by Dalla Pellegrina and Masciandaro (2009).

In the model there are three players involved in hierarchical principal–agent relationship: the policymaker, the bank and the FIU. All players are risk neutral. The policymaker maximizes social welfare, while the bank and the FIU maximize their private revenues. The AML regulation is effective if the number of true suspicious transactions detected (TSTs) is maximized.

Qualifying transactions with the word "true" is a way to emphasize that the effectiveness of an AML regime can be measured through a two-stage process: it is not enough that the number of reports increases, it is crucial for those transactions to be actually illegal. Suspicious transactions are filed to public authorities for further investigation in order to verify their usefulness in discovering money laundering operations. If the suspicious transaction requires further investigation it can be considered "true" in our terminology.

We assume that the output of an effective AML regulation is the number X of TSTs. It depends on two factors: the effort of the banks in defining their AML strategy and a random component. Effort e is the banks's private information. It is not observable by policymakers. The situation of asymmetric information stems from the fact that the bank, unlike the policymaker, is perfectly aware of its effort in designing and implementing the AML setting.

In a perfect information setup, the effort of the bank would be the only determinant of the bank's compensation scheme. The level of effort could be inferred from the number of TSTs, and the relative compensation scheme would be applied. The problem is that the number of TSTs is likely to be affected by other factors, which are outside the control of both policymakers and banks.

Those factors are indicated with the general expression "banks' laundering technology" and they are represented by a stochastic variable T. It has been recognized, for example, that the intensity of laundering through banks can depend on heterogeneous features (such as country or geographical risk, customer risk, product/services risk) and/or combinations of those features. The variable T thus reflects the level of simplicity that characterizes the technology of the launderer. To simplify the analysis it has been assumed that T can have only two values: $T1$ and $T2$, with $T2 > T1$. Furthermore, the following assumptions hold: $T = T2$ with probability $(1 - q)$, which means that laundering via banks is rudimental; and $T = T1$ with probability q, which means that the laundering through banks is sophisticated.

In the first case, the laundering technology is favorable to an effective AML action: the number of TSTs is likely to rise for a given level

of bank effort, assuming that the laundering operations are carried out with rudimentary techniques: thus it is easier for the professionals to detect them.

In the second case, the laundering technology is adverse: the number of TSTs tends to decline, given that the attempts at laundering are carried out using sophisticated procedures, which means that they are not easy for the bankers to detect. We also assume that the T is the bank's private information. Therefore, when information is asymmetric, the bank can have an incentive to dissimulate the true state of the laundering technology in order to induce the authority to overweight its effort in contrasting opaque banking operations.

Hence, we assume that the number of TSTs is a linear function of both the effort of the FI and the technology of the launderers:

$$X = e + T \tag{2.1}$$

The bank maximizes its utility, π_{FI}. First, the bank disutility is assumed to be a quadratic function of effort, given that we know that the signaling activity can be costly for monetary and reputational reasons:

$$g(e)=\frac{e^2}{2}$$

Second, it has been assumed that policymakers can establish an FIU, paying a cost Z. As we have already mentioned, the FIU supervisor, using his professional skills, is able to (albeit imperfectly) detect how sophisticated the money laundering technology is, and by this it can make an inference about the level of effort exerted. He observes a signal, s, that is correlated with T – then $s_2 > s_1$ – and reports Σ, where $\Sigma \in (s_1,s_2)$.

The assumption is that:

$$Prob(s_1 \mid T_1) = Prob(s_2 \mid T_2) = r; Prob(s_1 \mid T_2) = Prob(s_2 \mid T_1) = (1-r)$$

where $r > \frac{1}{2}$. In other words, the probability that the FIU supervisor will detect the correct laundering technology is r. Therefore r represents the quality of the FIU's supervisory work (i.e. the precision of the indications that it gathers). In this way, the FIU supervisor can reduce the asymmetric information that passes between the public agencies and the banks.

When an FIU supervisor is established, the cheating banker faces a risk of detection, since policymakers may ask the FIU supervisor to provide evidence on the technology faced by the bank. For example, the bank will be fined for a false negative: that is, for not reporting a high number of suspicious transactions in a favorable laundering environment.

Third, as far as the compensation scheme is concerned, we propose a classic carrot-and-stick scheme. On the one hand, the policymaker defines a rating system J (carrots), which evaluates the degree of compliance of the bank to the AML regime. The rating system is linked to the bank's reward. Imagine, for example, a system in which the higher grades of AML reporting signal higher levels of reputation, with values that can be expressed in monetary terms.

On the other hand, the AML regulation can specify a punishment fee P_{FI} (stick) that can be applied to the bank (where $P_{FI} \leq P_{FI}^{\max}$, given the compatibility constraint on the amount of punishment fees, as discussed below) if a signal of misbehavior is provided by the FIU supervisor.

The objective function of the banker becomes:

$$E(\pi_{FI}) = J - g(e) - E(P_{FI}) \tag{2.2}$$

As usual, we assume that the utility of the banker cannot drop below a minimum level, or reservation utility, which we assume to be equal to 0. One extreme interpretation of the participation constraint ($E(\pi_{FI}) > 0$) is the bank's closure: if the monitoring action is too costly – for example, in situations (i.e. regions, customers) where the money laundering technology is very sophisticated – the banks can simply stop providing their saving and credit services.

Finally, we can define the policymaker's objective function. Given that we are discussing the case of a compliant policymaker, we assume that the policymaker is a traditional benevolent dictator who wishes to maximize social utility by means of the AML rules. The policymaker is not a politician; although we will change this assumption in the next section.

Therefore social utility π_A coincides with the number of TSTs. As the laundering becomes more harmful, the effect of the increase in the number of TSTs on social welfare becomes stronger.

Policymakers take into account both the rewards/benefits granted to banks that report well and the sanctions based on the FIU supervisor's report; such sanctions are imposed on intermediaries that are more likely to hide their weak effort by mimicking other intermediaries, facing sophisticated money laundering techniques.

Hence, for the policymaker the expected social utility should be equal to the expected value of the number of TSTs minus compensations provided to the bank through the reward system, J, and plus the revenues, obtained from the punishment fee, P_{FI}. As a result we have:

$$E(\pi_A) = E(X - J + P_{FI}) \tag{2.3}$$

Having defined all the basic assumptions, we can identify the optimal incentive scheme.

In a perfect information framework, sanctions and supervisors play no role. Policymakers just select the incentives scheme J, given the following timing of the model:

(a) nature determines the laundering technology T;
(b) the bank learns T;
(c) the policymaker designs the AML regulation, specifying a benefit for the bank by offering a rating system J as a function of the effort exerted by the bank;
(d) the bank chooses its effort e and produces a number of TSTs;
(e) rating J is assigned and rewards are paid.

With perfect information the policymakers can define an incentive scheme that depends on all the relevant variables: that is, the effectiveness X, the effort e, and the level T of laundering technology:

$$E(\pi_A) = q(T_1 + e_1 - J_1) + (1 - q)\,(T_2 + e_2 - J_2) \tag{2.4}$$

subject to the participation constraint of the bank. Given the absence of an FIU supervisor, the participation constraint becomes $J_i > g(e_i)$ with $J = 1, 2$. Therefore, the optimal regulatory scheme under symmetric information implies that the policymaker equalizes the marginal private cost of the bank effort in producing TSTs with the marginal public value of the number of TSTs ($e_1 = e_2 = 1$). At the same time the policymaker rewards the bank just enough to make it fully compliant with rules, independently from the state of the laundering technology:

$$J(X_1) = J(X_2) = \frac{e^2}{2} = \frac{1}{2} \tag{2.5}$$

The rating reward is fixed, and each banker produces the optimal effort in every situation. The compliance is perfect.

The situation radically changes if we assume, as in the real world, that policymakers are outsiders with regard to the financial industry, and can observe neither the laundering technology level nor the effort of the banker.

In this setup, and still in the absence of an FIU supervisor, the rating scheme depends only on the number of the TSTs. The design of the regulation must thus fulfil the two incentive compatibility constraints:

$$J_2 - \frac{e^2_2}{2} > J_1 - \frac{(e_1 - dT)^2}{2} \qquad (2.6)$$

$$J_1 - \frac{e^2_1}{2} > J_2 - \frac{(e_2 - dT)^2}{2} s$$

where $dT = T_2 - T_1$ and assuming $e_1 > dT$.

In this case, the information advantage of the banker can produce a rent: when the laundering technique is rudimental, the bank can exert a suboptimal effort and is able to claim that a low number of TSTs is the result of the adverse environmental situation.

Can the outcome of the regulation be improved by introduction of the FIU as supervisor? The role of the latter is to produce a report that is useful for evaluating the AML strategy adopted and implemented by the banker. The FIU supervisor helps to improve the possibility of disentangling the contribution of the laundering techniques from that of the effort of the bank with regard to the resulting AML outcomes.

In practice, the role of the FIU supervisor is to monitor the bankers in order to evaluate the risk management system and allow relevant comparisons between the banks. The supervisory action should be based on a comprehensive understanding of bank activity, as well as the laundering risks to which banks are exposed.

Suppose that the procedure goes as follows. If the number of TSTs is high, the policymaker is satisfied, rewards the bank with a high rating, and there are no further actions. If the number of TSTs is low, the FIU supervisor may be asked to prepare a report about the bank, using both off-site and on-site inspections, in order to evaluate how difficult it is to assess and manage laundering risk in each specific situation.

If the FIU supervisor concludes that the laundering risk is relatively easy to detect, it is obvious for the policymaker that the low number of TSTs is the result of a weak effort on the part of the bank; as a result, the bank suffers the punishment, P_{FI}.

Now the timing is following:

(a) Nature determines T and the signal s.
(b) The bank learns T but has not yet observed s.
(c) The policymaker designs the AML regulation, specifying a benefit for the bank by offering a rating system J as a function of the number X of TSTs, but also a punishment P_{FI}, which depends on the result of the report Σ of the FIU supervisor.
(d) The bank chooses its effort e and produces a number X of TSTs.
(e) The policymaker asks the FIU supervisor to intervene with probability $\gamma(X)$.
(f) The FIU supervisor produces the report Σ.
(g) All transfers are realized.

Under imperfect asymmetric information policymakers can obtain better results in the AML regulation by establishing an appropriate supervisory structure, in comparison with the situation where the FIU supervisor is absent. In particular, it is possible to show that the establishment of the FIU supervisor is optimal, that is, $\gamma > 0$, if the threat of fines for the bank, P_{FI}, is greater than a specific value *k(r, Z, q)*, where:

$$k(r, Z, q) = \frac{Zq}{(1-q)(2r-1)} \tag{2.7}$$

we can interpret *k(r, Z, q)* as the opportunity cost of establishing an FIU supervisor. This opportunity cost depends on: (a) the revenue Z of the FIU supervisor, where the higher revenue means the lower level of convenience; (b) the quality r of the report, where a lower quality means lower convenience; (c) the likelihood q of supervisory action, where the more frequent use of an action increases the costs and then decreases convenience.

Therefore, in equilibrium, the level of public utility π_A depends on the characteristics of the punishment fee P_{FI}, the quality of the supervision r, and the cost of supervision Z. Linear representation with a social utility normalized to 1 does not have relevant consequences for the model, and simplifies the calculation. Then:

$$1 = \alpha_1 P_{FI} + \alpha_2 r - \alpha_3 Z \tag{2.8}$$

Given the cost of supervision, the equilibrium relationship between the quality of supervision and the punishment fee is inverse: an increase

in the quality of the supervision decreases the level of the punishment. The correct interest alignment of the bank can be obtained both with better quality of supervision and less punishment.

Finally, we can assume that the cost of the supervision depends on its quality: the policymaker should increase the payment Z in order to improve the quality r of the supervisory action. In particular, if the relationship between cost and quality is simply $z = a_4 r$, the equilibrium relationship w between the quality of supervision and the punishment fee depends on two different parameters: the weight a_2 of the quality and the composite weight $a_3 a_4$ of the cost. In fact, only if $a_2 > a_3 a_4$ does the correlation between the quality of supervision and the punishment fee remain negative.

The inequality implies an efficient condition in the supervisory setting: if a higher level of supervisory quality can be achieved with a less than proportional increase in the overall cost, the effect on regulatory effectiveness is positive. Now let us further elaborate on what can be an institutional driver of a better quality in supervision.

We can assume that the higher efficiency of the AML supervisor in producing and processing financial information is more likely if the supervisor is an insider agency. In this case we can conclude that the FIU has to be a financial supervisor.

But the assumption on the efficiency of the FFIU can be controversial. With regard to this, it is possible to disentangle the pros (*insider view*) and cons (*outsider view*). The financial nature of the FFIU (*insider view*) can be supported by arguments related to informational advantages and economies of scale. These advantages come from the fact that the financial intelligence function is brought under the umbrella of the main authority that is in charge of managing financial supervision as a whole. The insider point of view supports the establishment of an FFIU as a device to improve the quality of the AML regulation.

At the same time, it is worth noting that if the financial and banking supervisors are completely involved in the failure of AML regulation policy, costs can arise that are absent if the supervisor is an outsider (*outsider view*).

The risk of policy failure can be motivated by different factors, which can shed light on the main source of the policy failure: the capture risks. If the AML supervisor is highly related to the banking and financial authorities, it is more likely that there will be a risk of capture for the regulated firms; this can drastically reduce the quality of AML regulation. Therefore the question becomes how to allocate weights to the pros and cons, in order to reach a more stable and balanced solution.

2.6.2 Politics

Up to now, we have discussed the economic rationale in establishing a specialized financial supervisor in implementing the AML regulation, without reaching any definite conclusions. We can try to go ahead and enrich our approach with new motivations. The bottom line is simple: the relative importance of the arguments in favor of, or against, an FFIU is defined by the actor who sets the rules (i.e. the policymaker).

Our framework is based on two hypotheses. First of all, gains and losses of a given AML setting are computed by the incumbent policymaker, who maintains or reforms the regulatory regime following his own preferences. Secondly, policymakers are politicians and, as such, they are held accountable at elections for how well they have managed to please voters. All politicians are career-oriented agents, motivated by the goal of pleasing voters in order to win elections. The main difference among various types of politicians is which kind of voters they wish to please in the first place.

In other words we can shed light on the establishment of a specialized financial supervisor (FFIU) using a political delegation framework. In doing so, we adopt the view that the policymaker's actual choices in relation to the AML framework are conditional on the economic and institutional environment that exists at a given time, which, in turn, determines the political weights assigned to the pros and cons of the FFIU's establishment.

Consider a closed economy with rational expectations and uncertainty. We assume that citizens prefer an effective AML setting. But should a specialized banking supervisor be in charge of setting up the AML regulation? Or in other words, how deep does the financial supervisor's involvement (FSI) have to be in AML regulation?

Citizens acknowledge that, by definition, the optimal level of FSI assumes the exploitation of the tradeoffs between pros and cons. Citizens care about the effectiveness of the FSI regime according to a classic well-behaved concave function $u = U(y)$: social welfare increases with the optimal level of FSI. Linear preferences are used:

$$U(y) = y \tag{2.9}$$

In a democracy, citizens assign the task of designing the optimal level of FSI (i.e. the setting that guarantees the AML regulation's effectiveness) to the elected policymaker. For the sake of simplicity, we assume that the elected policymaker represents both the legislative and the executive

powers: that is, the interests of both the majority of the parliament and the government in charge are perfectly aligned.

The incumbent policymaker is delegated by society the function to define and implement the optimal level of FSI. The policymaker's reward is based on how he carries out the job of defining and implementing the level of FSI.

Our policymaker is a politician. Here we assume that the policymaker wishes to please citizens. A further assumption could be that the policymaker's aim is to please specific constituencies (i.e. the lobbies). We adopt the *helping-hand view* of the policymaker's: he wishes to please citizens rather than a particular constituency or lobby (*grabbing-hand view*).

It will be interesting to demonstrate that notwithstanding the policymaker wishes to please the citizens, the final outcome – the actual FSI – can be different from the social optimal one.

The level y of FSI is determined by the policymaker's ability Ω and by her effort a.

$$y = a + \Omega \tag{2.10}$$

Let us describe the delegation framework. The sequence of events is the following:

- Society delegates to the policymaker the task of designing the optimal level of FSI.
- Next, the policymaker chooses effort a, before knowing his ability Ω in implementing this particular task (building up BSI is neither a usual nor day-to-day operation).
- The policymaker implements the FSI regime, thus revealing his ability Ω.
- Citizens observe the FSI level – not the relationship between effort and ability, given that they cannot distinguish innate talent from contingent effort – and reward the policymaker for this task.

Coming back to the policymaker, his utility function Z_{HH} is defined as:

$$Z_{HH} = R(U) - C(a) \tag{2.11}$$

where $R(U)$ is the reward function and $C(a)$ is the cost function. The political reward is a function of the social utility, while the political costs depend on the effort expended in implementing the task. The

policymaker evaluates every task assignment while taking into account the political rewards and costs of doing so. Let us describe the three crucial features of the policymaker:

(a) Ability: the ability of the policymaker is a random variable with normal distribution (where Ω_{AV} is the mean);
(b) Political reward: the incumbent policymaker wishes to be re-elected. The government needs to provide enough utility to the majority of voters. Thus the objective of the policymaker is to maximize the social welfare, U.

In general, the policymaker wishes to please voters and his goal is the alignment of interests between him and the citizens. But then each delegated task – that is, each specific alignment – can be more, or less, convenient from the policymaker's point of view in terms of political gains. We denote the political value he assigns to fulfilling the specific task on FSI as β with $0 \leq \beta \leq 1$. Therefore:

$$R(U) = \beta U$$

The incentives alignment between the policymaker and citizens is a necessary and sufficient condition, in order to find the optimal behavior of the policymaker. One more step is necessary to find the effective political reward. The reward will be useful if the citizens' utility exceeds the minimum threshold of utility W that they expect from an incumbent government (political competition condition).

Citizens compare government performance with the expected performance of outside politicians. The political competition condition can be defined as follows:

$$R_{HH} = \beta \mathrm{P_r}(U \geq W) \tag{2.12}$$

Therefore, the usefulness of the political reward depends on condition (2.12).

c) Political costs: the policymaker knows that the more the financial supervisor is involved in AML regulation, the more it is likely that two kinds of costs can arise. On the one side, the economic (capture) costs of having an insider regulator acting on the AML field should be considered. On the other side, the more the financial supervisor becomes similar to a powerful bureaucracy, while additionally gaining AML powers, the more the incumbent government is in danger of facing a bureaucratic veto player.

In other words, we assume that from the policymaker's point of view the political costs of implementing an insider FIU depends on his expectations of facing at least one of two types of costs: capture costs *CC* and bureaucratic costs *BC*.

Therefore, the policymaker cost function can assume the following simple specification:

$$C(a) = ca^2$$

Where $c = c_0 + c_1$ (*probCC* + *probBC*) and each probability is between 0 and 1.

The amount of the political costs that relate to the effort of establishing the FFIU depends on how much the incumbent government is blamed in situations when shocks occur (i.e. it depends on the size of reputation losses). When a failure occurs, citizens can be more, or less, sensitive.

From the government's point of view, the failure likelihood per se is not relevant, but its political costs affect his reputation. The reputation factor is represented by the parameter c_1. For the sake of simplicity, we assume (a) that the negative effect on the government's reputation is the same, irrespective of the type of failure; and (b) the events of failure are independently distributed.

We will see that the size of the political costs can determine the difference between the optimal FSI and the actual one.

Establishing the FSI is a two-step process: the first step is to define the policymaker's effort; the second step is to evaluate the level of the FSI. In defining his optimal effort a_1 the policymaker maximizes his objective function. When his ability Ω_{HH} becomes evident, the level of the FSI can be evaluated using the FSI equation, and his final political reward can be calculated using the political competition equation. It follows that the policymaker maximizes social welfare net of the costs of executing the task:

$$\max Z_{HH} = \max[R(U) - c(a_1)]$$
$$R(U) - c(a_1) = \beta(U) - c(a_1)$$

Given that the level of social utility is equal to the level of FSI, which is a function of the policymaker's effort, it is evident that both the rewards and the costs depend on the effort:

$$\beta(a_1 + \Omega) - ca_1^2$$

From the first-order condition, the optimal effort will be:

$$\frac{\delta Z_{HH}}{\delta a_1} = \beta - 2c_1 a = 0$$

$$a_1 = \frac{\beta}{2c_1}$$

Given a_1, the effective political reward of the policymaker depends on the condition of political competition:

$$\mathrm{R_{HH}} = \beta \Pr(U \geq W)$$

Voters are rational. They realize that the alternative to re-electing the incumbent policymaker is to get another politician with average ability. Given their expectations a^e on effort, it follows that:

$$W = a^e + \Omega_{AV}$$

then:

$$\mathrm{R}_{HH} = \beta \Pr(\Omega + a_1 \geq \Omega_{AV} + a^e)$$
$$\mathrm{R}_{HH} = \beta \Pr(\Omega - \Omega_{AV} \geq a^e - a_1) \qquad (2.13)$$

The ability of the incumbent policymaker Ω_{HH} is determined by nature. It follows that:

$$\mathrm{R}_{HH} = \beta \Pr(\Omega_{HH} - \Omega_{AV} \geq a^e - a_1) \qquad (2.14)$$

When expectations are perfectly matched ($a^e = a_1$), the effective political reward will be positive if the ability of the incumbent policymaker is greater than average:

$$(\Omega_{HH} > \Omega_{AV}) \qquad (2.15)$$

The equilibrium level y of the FSI is determined by the policymaker's ability Ω_{HH} and by his effort a_1:

$$y_{HH} = a_1 + \Omega_{HH} = \frac{\beta}{2c_1} + \Omega_{HH} \qquad (2.16)$$

Given the exogenous policymaker's ability, the optimal level of FSI depends on how politically relevant it is for the government to build up an effective AML regulation. In other words, the policymaker's perception of the social relevance of the FFIU setting matters. On the other hand, the government takes into account the expected costs of the failures which may arise when a financial supervisor is deeply involved in the AML regulation.

The parameter c_1 can be easily used to show the conditions under which the actual level of FSI is different from the social optimal one. In fact, we can assume that citizens acknowledge the existence of the risks of having a FFIU. Therefore, the social optimal value of the reaction parameter c_1^{soc} is different from 0: for the sake of simplicity, we can assume that:

$$c_1^{soc} = 1$$

Now, if the political costs to the government of facing failure because of the existence of a FFIU are particularly high, it is likely that $c_1 > c_1^{soc}$. Consequently, the actual level of FSI designed by the policymaker will be lower than the social optimal one.

How to reduce the gap between the optimal and the actual design of the FIU? We propose that this will involve working on the governance of the FIU, with the aim of reducing the possible risks of having a financial supervisor, such as the AML agency.

The optimal governance of an FFIU essentially has to be two sides of the same coin. On the one hand, the FFIU has to be independent: that is, the supervisor enjoys the ability to implement the best ABS policy without any interference from banks and/or by the politicians themselves. The independence of the FFIU reduces the risk of capture. On the other hand, the FFIU has to be accountable for its actions, in order to avoid the creation of an excessively powerful bureaucracy. The relationship between independence and accountability represents the core of the FFIU's governance. The FFIU's governance has become the institutional setting for implementing day-to-day AML policy.

2.7 Financial intelligence units: institutional models

In the previous section we reached two related conclusions: the effectiveness of the AML policy is more likely to occur if a financial FIU is in charge, provided its governance is characterized by independence and accountability.

On the one hand, the utility of the FFIU must be strongly dependent on the effort expended in that specific function. Failure to conduct AML action implies an opportunity cost that depends on whether the regulator has other sources of remuneration. If the regulator has fewer other sources of remuneration, its reputation and hence its utility will be linked to the outcome of the anti-money laundering action. Therefore, we can assert that the more the FIU specializes in AML policy, the more effective it is.

On the one hand, it is crucial that the FIU performs its information search, collection and processing function in a relatively easy way. The broader and more detailed its information assets, the more effective its action is. The economic model highlights that the gains of an FIU agent are characterized by two features: institutional specialization, in order to maximize reputational advantages; and the financial nature of the FIU, in order to increase the advantages of having information.

On the other hand, the shortcomings of having an FFIU can be caused by capture risks and/or by bureaucratic control. These risks can be fixed at some value with the more independence and accountability of the financial FIU.

But what are the specific features of the existing FIUs? Over the past few years, specialized government agencies have been created as countries develop systems to deal with the problem of money laundering. These entities are commonly referred to as financial intelligence units or FIUs.

Based upon the work of its legal working group, Egmont approved the following definition of a FIU in 1996:

> A central, national agency responsible for receiving (and, as permitted, requesting), analyzing and disseminating to the competent authorities, disclosures of financial information: (i) concerning suspected proceeds of crime, or (ii) required by national legislation or regulation, in order to counter money-laundering.

FIUs have attracted increasing attention because of their important role in anti-money laundering programs with regard to exchanging and processing relevant information between financial institutions and law enforcement/prosecutorial authorities, as well as between national jurisdictions.

Two major factors affect the creation of the FIUs: implementing anti-money laundering departments or offices, alongside already existing law enforcement systems (the Judicial, Law Enforcement and Hybrid

models), or providing a single agency for centralizing the receipt and assessment of financial information and sending the resulting disclosures to competent authorities (the Administrative Model). Using our benchmark, the four institutional models can be interpreted as different ways to design the principal–agent scheme:

- The Judicial Unit is established within the judicial branch of government, wherein disclosure of suspicious financial activity is received by the investigating agencies of a country from its financial sector, such that the judiciary measures can be brought into play: for example, seizing funds, freezing accounts, conducting interrogations, detaining people, and conducting searches.
- The Law Enforcement Unit implements anti-money laundering measures alongside already existing law enforcement systems by supporting the effort of multiple law enforcement or judicial authorities with concurrent or sometimes competing jurisdictional authorities to investigate money laundering;
- The Administrative Unit is a centralized, independent administrative authority, which receives and processes information from the financial sector and transmits disclosure to judicial or law enforcement authorities for prosecution. It works as a buffer between the financial and the law enforcement institutions;
- The Hybrid Unit serves as a disclosure intermediary and a link to both judicial and law enforcement authorities. It combines elements of at least two of the other FIU models.

In 2005 there were 94 countries with recognized operational FIUs. Table 2.1 reports the 65 FIUs in our sample.

In the sample, 34 countries have an FFIU (*FFIU*) (52.3 percent); 4 countries adopt a non-financial administrative FIU (*ANONFFIU*) (6.2 percent); 17 countries choose a law enforcement FIU (*LEFIU*) (26.2 percent); 4 countries have a judicial FIU (*JFIU*) (6.2 percent); and 6 countries show a hybrid model (*HFIU*) (9.2 percent).

As a result, the FFIU comes out as the most adopted model, but almost half of the countries set a different framework. In other words, there are broad differences across the countries. Figure 2.1 shows the relative distribution of the FIU models across countries.

Table 2.2 below provides some further insights. It shows the distribution of FIUs in 65 countries by level of economic development (*DEV*, *UN*, *GDPcapita*); financial industry (*STGDP*, *CREDITGDP*, *LAT*); structure of supervision (*CBFA*, *CBBA*, *CBSA*, *CBIA*, *FAC*); legal effectiveness

Table 2.1 FIU models, agents, principals and year of establishment

Country	Institutional models	FIU	Principal	Establishment of current FIU
Albania	Financial administrative	General Directorate for the Prevention of Money Laundering (GDPML)	Ministry of Finance	2000
Argentina	Non-financial administrative	Financial Information Unit	Ministry of Justice and Human Rights	2000
Australia	Non-financial administrative	AUSTRAC	Parliament of Australia through the Ministry for Home Affairs	1988
Austria	Hybrid	Austrian laws and regulations do not explicitly provide for the establishment of an FIU	Austrian Financial Market Authority (FMA), Criminal Intelligence Service (BK), Federal Agency for State Protection and Counter Terrorism (BVT), Federal Ministry of Justice (BMJ), Federal Ministry of Finance (BMF), Oesterreichische Nationalbank (OeNB)	2011
Belgium	Financial administrative	Belgian Financial Intelligence Processing Unit (CTIF-CFI)	Ministry of Finance and Justice	1993
Brazil	Financial administrative	Council for Financial Activities Control (COAF)	Ministry of Finance	1998
Bulgaria	Law enforcement	Financial Intelligence Directorate (FID)	National Security Agency	2000
Cameroon	Financial administrative	National Agency for Financial Investigation (NAFI)	Ministry of Finance	2005
Canada	Financial administrative	Financial Transactions and Reports Analysis Centre of Canada (FINTRAC)	Ministry of Finance	2000

(*Continued*)

Table 2.1 Continued

Country	Institutional models	FIU	Principal	Establishment of current FIU
Chile	Financial Administrative	Unitad de Analisis Financiero (UAF)	Ministry of Finance	2003
Colombia	Financial administrative	Information and Financial Analysis Unit (UIAF)	Ministry of Treasury and Public Credit	1999
Croatia	Financial administrative	Office for Money Laundering Prevention	Ministry of Finance	2012
Cyprus	Judicial	Unit for Combating Money Laundering (MOKAS)	Attorney General's Office, Customs and Excise Department and Police	1996
Czech Republic	Financial administrative	Financial Analytical Unit (FIA)	Ministry of Finance	2006
Denmark	Judicial	HVIDVASK	Public Prosecutor's Office	NA
Ecuador	Non-financial administrative	Financial Intelligence Unit (FIU)	Banking Supervision Authority, Public Prosecutor's Office, Ministry of the Interior	2005
Egypt, Arab Rep.	Financial administrative	Egyptian Money Laundering Combating Unit (EMLCU)	Central Bank of Egypt	2002
Estonia	Law enforcement	Estonian FIU (FIU)	Police, Border Guard Board	2007
Finland	Law enforcement	FIU	National Bureau of Investigation	2008
France	Financial administrative	FIU for Fighting Money Laundering and Terrorist Financing (TRACFIN)	Ministry for the Economy, Industry and Employment, Ministry for the Budget, Public Accounts and Reform	1990
Georgia	Hybrid	Financial Monitoring Service (FMS) and other agencies (Central Bank, Ministry of Finance, Ministry of Justice, LEPL Insurance State Supervision Service and Accounting Authority)	Central Bank of Georgia	2003

Germany	Law enforcement	FIU	Federal Criminal Police Office	2002
Greece	Hybrid	AML, Counter-Terrorist Financing and Source of Funds Investigation Authority	Greek Parliament, Ministry of Finance, Ministry of Justice, Ministry of Transparency and Human Rights and Citizen Protection, Ministry of Foreign Affairs	2008
Hong Kong	Law enforcement	Joint Financial Intelligence Unit (JFIU)	Hong Kong Police Force and Hong Kong Customs and Excise Department	1989
Hungary	Law enforcement	Hungarian FIU	National Tax and Customs Administration	2004
Iceland	Law enforcement	Ríkisssaksóknari (RLS)	National Commissioner of Police	2006
India	Financial administrative	FIU	Ministry of Finance	2004
Ireland	Law enforcement	FIU	Garda Bureau of Fraud Investigation	1996
Israel	Non-financial administrative	Israel Money Laundering Prohibition Authority (IMPA)	Ministry of Justice	2002
Italy	Financial administrative	FIU (FIU)	Central Bank of Italy	2007
Jamaica	Financial administrative	Financial Investigations Division (FID)	Ministry of Finance and Public Service	2002
Japan	Law enforcement	Japan Financial Intelligence Center (JAFIC)	Criminal Investigation Bureau of the National Police Agency	2007
Kenya	Financial administrative	Financial Reporting Centre (FRC)	Ministry of Finance	2009
Country	Institutional models	FIU	Principal	Establishment of current FIU
Latvia	Judicial	Office for Prevention of Laundering of Proceeds Derived from Criminal Activity	Public Prosecutor Office	1997
Lithuania	Law enforcement	Financial Crime Investigation Services	Ministry of the Interior	2010

(*Continued*)

Table 2.1 Continued

Country	Institutional models	FIU	Principal	Establishment of current FIU
Luxembourg	Law enforcement	Cellule de Renseignement Financier (CRF)	Public Prosecutor's Office	2004
Macedonia, FYR	Hybrid	Money Laundering Prevention Directorate (MLPD)	NA	2013
Malaysia	Financial administrative	Unit Perisikan Kewangan (UPK)	Central Bank of Malaysia	2002
Malta	Financial Administrative	Financial Intelligence Analysis Unit (FIAU)	Central Bank and Government	1994
Mauritius	Financial administrative	Financial Intelligence Unit (FIU)	Head of State	2002
Mexico	Financial administrative	FIU (FIU)	Ministry of Finance and Public Credit	2004
Netherlands	Law enforcement	FIU (FIU)	Netherlands Police Agency	2006
New Zealand	Law enforcement	NZ Police Financial Intelligence Unit	NZ Police	2009
Norway	Hybrid	National Authority for Investigation and Prosecution of Economic Crime (ØKOKRIM)	Ministry of Justice and Ministry of Finance	1989
Peru	Financial Administrative	FIU (FIU)	Ministry of Finance	2004
Philippines	Financial administrative	Anti-Money Laundering Council (AMLC)	Central Bank of Philippines	2001

Country	Institutional models	FIU	Principal	Establishment of current FIU
Poland	Financial administrative	General Inspector of Financial Information (GIFI)	Ministry of Finance	2000
Portugal	Law enforcement	Financial Information Unit	Judicial Police	2002
Romania	Hybrid	National Office for Prevention and Control of Money Laundering (NOPCML)	Ministry of Administration and Interior, Ministry of Public Finance, Ministry of Justice, General Prosecutor's Office, National Bank of Romania, Court of Accounts and Romanian Banks Association	1999
Russian Federation	Financial administrative	Financial Monitoring Service	Head of State	2001
Slovak Republic	Law enforcement	FIU (FIU)	Ministry of Interior	1996
Slovenia	Financial administrative	Office for Money Laundering Prevention	Ministry of Finance	1995
South Africa	Financial administrative	Financial Intelligence Centre (FIC)	Ministry of Finance	2001
South Korea	Financial administrative	Korea Financial Intelligence Unit (KoFIU)	Ministry of Finance	2001

(*Continued*)

Table 2.1 Continued

Country	Institutional models	FIU	Principal	Establishment of current FIU
Spain	Financial administrative	Executive Service of the Commission for the Prevention of Money Laundering and Monetary Offences (SEPBLAC)	Government and Central Bank of Spain	1993
Sweden	Law enforcement	Swedish FIU	Swedish Police Board and Swedish National Criminal Police	NA
Switzerland	Law enforcement	Money Laundering Reporting Office Switzerland (MROS)	Federal Office of Police	1997
Thailand	Judicial	Anti-Money Laundering Office (AMLO)	Ministry of Justice	1999
Trinidad and Tobago	Financial administrative	FIU (FIU)	Government of Trinidad and Tobago	2009
Tunisia	Financial administrative	Tunisian Financial Analysis Committee (TFAC)	Central Bank of Tunisia	2003
Turkey	Financial administrative	Financial Crimes Investigation Board (MASAK)	Ministry of Finance	1996
United Kingdom	Law enforcement	UK Financial Intelligence Unit (UKFIU)	National Crime Agency	2002
Ukraine	Financial administrative	State Committee for Financial Monitoring (SCFM)	Cabinet of Ministers	2003
United States	Financial administrative	Financial Crimes Enforcement Network (FinCEN)	Department of Treasury	2001
Zimbabwe	Financial administrative	FIU (FIU)	Central Bank of Zimbabwe	2004

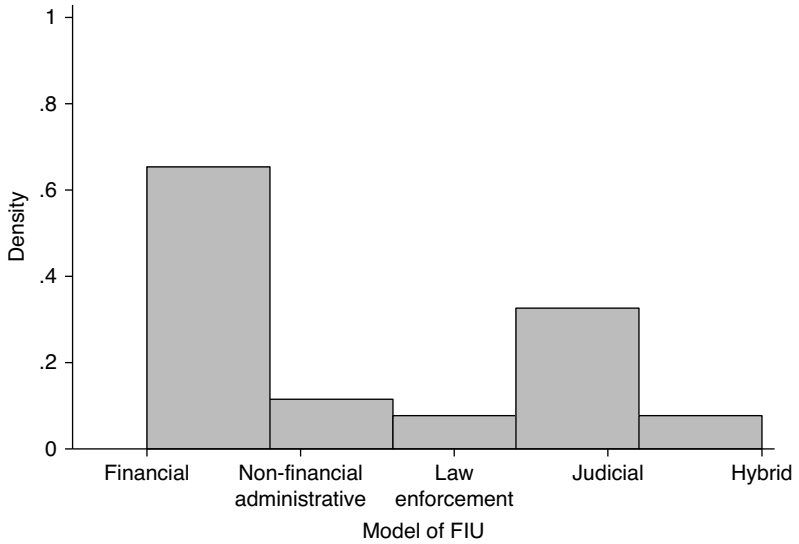

Figure 2.1 FIU models around the world
Source: Masciandaro and Volpicella (2014).

(*LAWEFF*); size of country (*POP*); location (*CONT*); year of establishment (*ESTABLISHMENT*); membership to international organizations (*OECD*, *FIUINTMEMB*); and other institutional factors (*RELIGION*, *LEGAL*). It also shows the value taken, respectively, by the variables representing the different FIU models: *FFIU*, *ANONFFIU*, *LEFIU*, *JFIU* and *HFIU*. To do this we first calculate the average value of the *FFIU*, *ANONFFIU*, *LEFIU*, *JFIU* and *HFIU*; then we compute the percentage of countries having a value above the sample mean; then we allow this information to interact with the level of other variables in the dataset.[1]

A mere descriptive analysis seems to suggest that *ANONFFIU* and *HFIU* adoption is not affected by the stage of development, while emerging and developing countries are slightly more likely to set up FFIUs (row a). From this perspective, it is noteworthy that FFIUs are generally associated with a lower GDP per capita (row c) and most of countries that adopt FFIUs are not OECD economies (row p).

It is possible to observe that the FFIUs seem to be correlated with a financial industry that is not fully developed (rows d and e).

[1] Note that for each column, the sum of Legal variables (Rows) is not 1 because of some missing data.

Table 2.2 FIU's descriptive statistics

	FFIU	***ANONFFIU***	***LEFIU***	***JFIU***	***HFIU***
	Percentage of countries above average				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
Average	0.52	0.06	0.26	0.06	0.09
Stage of development (*DEV*) (a)					
Advanced	0.47	0.50	0.88	0.75	0.50
Emerging/Developing	0.53	0.50	0.12	0.25	0.50
Unemployment (*UN*) (b)					
High unemployment	0.35	0.00	0.35	0.25	0.50
GDP per capita (*GDPcapita*) (c)					
High GDP per capita	0.21	0.50	0.65	0.50	0.50
Domestic credit to GDP (*CREDITGDP*) (d)					
High domestic credit	0.26	0.25	0.65	0.75	0.33
Stocks traded to GDP (*STGDP*) (e)					
High stocks traded	0.26	0.50	0.41	0.50	0.17
Latitude (*LAT*) (f)					
High latitude	0.44	0.00	0.88	0.50	1.00
Central bank as financial authority (*CBFA*) (g)					
High central bank involvement (above average)	0.71	0.50	0.53	0.50	0.67
Central bank as banking authority (*CBBA*) (h)					
High central bank involvement as banking authority (above average)	0.71	0.50	0.53	0.50	0.67
Central bank as securities authority (*CBSA*) (i)					
High central bank involvement as securities authority (above average)	0.09	0.00	0.24	0.00	0.17
Central Bank as insurers' authority (*CBIA)* (j)					
High central bank involvement as insurers' authority (above average)	0.18	0.00	0.29	0.00	0.33
Financial authorities consolidation (*FAC)* (k)					

High consolidation (above average)	0.24	0.00	0.71	0.50	0.50
Effectiveness of law (*LAWEFF*) (l)					
High effectiveness of law	0.35	0.50	0.71	0.50	0.50
Population (*POP*) (m)					
High population	0.65	0.75	0.24	0.25	0.17
Continent (*CONT*) (n)					
Europe	0.35	0.00	0.82	0.75	0.83
America	0.26	0.50	0.00	0.00	0.00
Africa	0.21	0.00	0.00	0.00	0.00
Asia	0.18	0.25	0.12	0.25	0.17
Oceania	0.00	0.25	0.06	0.00	0.00
Establishment (*ESTABLISHMENT*) (o)					
Recent establishment (above average)	0.38	0.50	0.59	0.00	0.50
OECD (*OECD*) (p)					
OECD	0.41	0.50	0.82	0.25	0.50
International Organizations (*FIUINTMEMB*) (q)					
Membership to international organizations (above average)	0.50	0.50	0.88	0.75	0.33
Religion (*RELIGION*) (r)					
Buddhist	0.03	0.00	0.06	0.25	0.00
Catholic	0.50	0.50	0.41	0.00	0.17
Muslim	0.15	0.00	0.00	0.00	0.00
Orthodox	0.06	0.00	0.06	0.25	0.67
Protestant	0.15	0.25	0.41	0.50	0.17
Other religion	0.12	0.25	0.06	0.00	0.00
Legal (*LEGAL*) (s)					
English	0.29	0.50	0.18	0.25	0.00
French	0.44	0.50	0.18	0.00	0.33
German	0.15	0.00	0.35	0.25	0.33
Scandinavian	0.00	0.00	0.12	0.25	0.17
Socialist	0.06	0.00	0.00	0.00	0.17

Source: Masciandaro and Volpicella (2014).

Furthermore, FFIUs are associated with lower levels of law effectiveness and large countries (rows l and m, respectively). At the same time, the early establishment of FIU seems to correlate with FFIUs (row o).

Finally we can take a look at the role of the FIUs in the overall setting of financial supervision. First, most of the economies that adopt FFIUs have many authorities in charge of supervision (row k). Second, the central bank taking a pivotal role as main supervisor is common to most of the countries with FFIUs (row g). A natural question arises: how can these features affect the pros and cons of having an FFIU in charge? The relationships between FIUs, supervisory architecture and central banking therefore deserve more attention.

2.8 Financial FIUs, supervisory architecture and central banking

Our analysis shows that in the real world the financial FIU (FFIU) is the most popular model, with regard to the design of AML regulation design, which is consistent with our theoretical insights: on the one side we need to optimize the potential informational gains; at the same time, in adopting the insider solution we also know that its governance matters, in order to avoid capture risks and risks of bureaucratic control.

But in what way are the best practices of the design and implementation of the banking FIU consistent with present trends in supervisory architecture as a whole?

The institutional regime of the FFIUs can be naturally linked to, and influenced by, the features of the overall financial regulatory setting. Therefore, the examination of this regime it is a necessary step, in order to shed light on what has been going on in the field of supervisory architecture in the last two decades – and we can use the milestones defined in Masciandaro and Quintyn (2013) to elaborate on this.

Our starting point is to clarify the three main bullets in the agenda. The first bullet discusses how to design the architecture of the supervisory regime – that is, how to determine the degree of supervisory consolidation, given that the authorities were, and still are, heavily diversified.

Second, it is important to know the role that the central bank has to have in the supervisory setting – that is, the degree of central bank involvement in supervision. Last but not least, the third bullet outlines how to identify the best practices in supervisory governance.

We will speculate on these three features of financial supervisory settings, in order to highlight their potential effects on the FFIU regimes.

2.8.1 The cycle in financial supervision consolidation and the FIUs

In the two decades before the financial crisis, many countries made drastic changes to the architecture of their financial supervision settings. The wave of restructuring made the supervisory landscape less uniform than it had been in the past. We will see that in several countries the architecture reflects the classic model, with separate agencies for banking, securities and insurance supervision.

However, an increasing number of countries follow a trend toward consolidation of supervisory powers, which in some cases has resulted in the establishment of a unified regulator, either inside or outside the central bank. The features of each supervisory regime can potentially affect the role of an FFIU.

The changes in the supervisory architecture occurred simultaneously with fundamental changes in banking and financial markets. The financial industry has experienced a change in its pillars: the traditional boundaries between banking, securities and insurance have blurred, which has resulted in the formation of large financial conglomerates. In the first relevant examples of the consolidation trend – as in the case of the United Kingdom and Australia – the governments have explicitly justified the supervisory reshaping in order to cope with the changes in their financial industries.

The blurring effect can strengthen the motivation for having an FFIU, given the potential information gains in having an insider supervisor that monitors all the banking, securities and insurance sectors.

However, it is a fact that the debate about the most appropriate supervisory regime started in earnest with the 1997 decision of the UK government, with Tony Blair as prime minister, to move the bank supervision function out of the Bank of England and delegate it to the Financial Services Authority (FSA), a new agency in charge of supervising all segments of the financial markets.

The UK decisions were preceded by earlier changes in the supervisory architecture in the Scandinavian countries. In the wake of the Scandinavian financial crisis, the national authorities decided to integrate their supervisory agencies at the national level. One of the arguments used at that time was that their financial sectors were too small to justify separate supervisory agencies. So the "small country argument" was used as one of the reasons to establish a unified supervisor.

In addition to Norway, which was the first country to establish a single supervisor in 1986, and Iceland (1988), six "old" European Union

members – Austria (2002), Belgium (2004), Denmark (1988), Germany (2002), Sweden (1991) and the United Kingdom (1997) – assigned the task of supervising the entire financial system to a single authority other than the central bank. We will see that the consolidation trend went hand in hand with the separation of central banking and supervision.

In Ireland (2003), supervisory responsibilities were put mainly in the hands of the central bank. The central bank increased its responsibilities in the Netherlands (2005) too. Four countries involved in the 2004 EU enlargement process – Estonia (1999), Latvia (1998), Malta (2002) and Hungary (2000) – have also reformed their structures so that all powers lie with a single authority. Outside Europe, unified agencies have been established in Kazakhstan (2004), Korea (1997), Japan (2001), Nicaragua (1999) and, among the smaller countries, in Singapore (the first one to do so: in 1982), Bahrain, Bermuda, the Cayman Islands, Gibraltar, the Maldives, Netherlands Antilles, and the United Arab Emirates.

In any case, it was the UK's decision that actually started the worldwide debate, and the subsequent systemic crises of the late 1990s and early 2000s added to the reform wave.

Based on an overall dataset of a heterogeneous sample of 102 countries, it is possible to observe that, ultimately, a large number of countries have reformed the structure of their financial supervision. In the ten years after 1998, 64 percent of the countries, included in the sample – 66 out of 102 – have chosen to reform their financial supervisory structure (Figure 2.2), by establishing a new supervisory authority and/or changing the functions of at least one of the authorities that already existed.

The reform trend is even more evident when we add regional and country–income perspectives. Figure 2.2 provides a breakdown by country groups and shows that the European, the EU and OECD countries account for, respectively, 82 percent, 77 percent and 73 percent of the countries that have undertaken reforms. This indicates that the shape of the supervisory regime seems to have been a relevant issue in more advanced countries, and particularly in Europe, as we have already noted before.

Figure 2.3 summarizes the state of affairs before the financial crisis. It is possible to group supervisory regimes according to the three main models that have been proposed by the theoretical analysis so far: the vertical (silos) model, which follows the boundaries of the financial system in different sectors of business, and where every sector is supervised by a different authority; the horizontal (peaks) model, which follows the differences among the public objectives of regulation, and where every objective is supervised by a different agency; and the unified

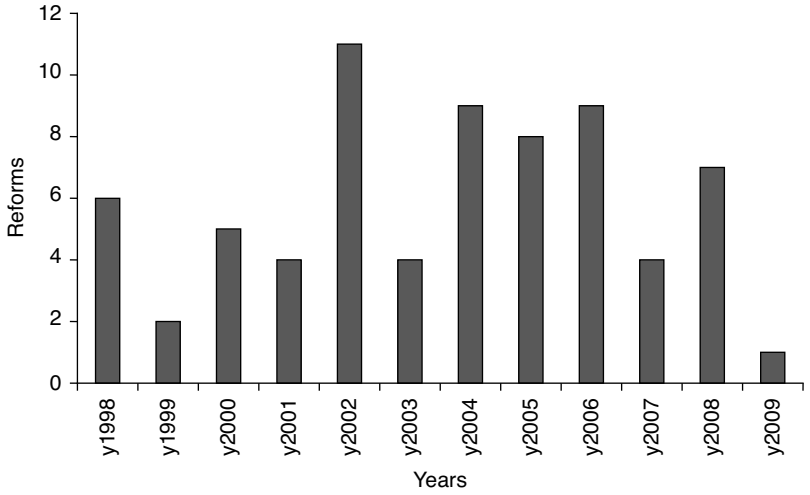

Figure 2.2 Number of reforms of supervisory architecture per year (1998–2009)
Source: Masciandaro and Quintyn (2009).

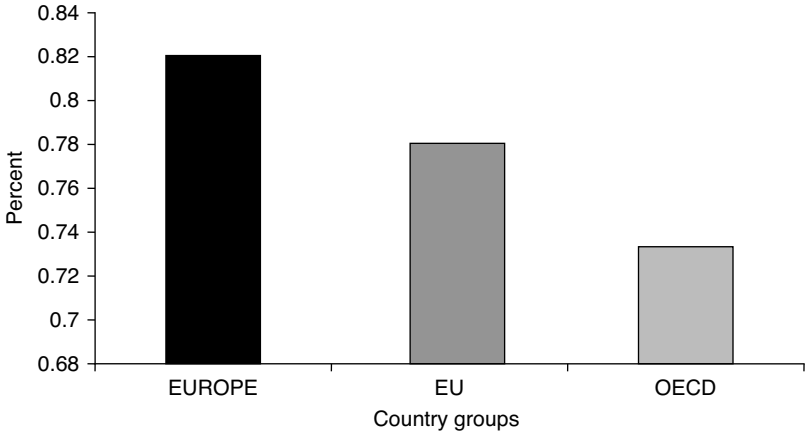

Figure 2.3 Reforms of supervisory architecture by country-groups (1998–2008, % of the total)
Source: Masciandaro and Quintyn (2009).

(integrated) model, where a single authority supervises all objectives for the entire financial industry. Given its very limited historical use, we do not find it necessary to comment on the model in terms of its function, which follows the economic functions performed by different banking financial and insurance firms.

In 36 countries (35 percent of our sample) the supervisory regime still implements the vertical model, with separate authorities for banking, securities, and insurance supervision. The classic silos model works well in a financial industry structure that has a clear distinction between banking, security businesses and insurance companies. In the regimes that are consistent with the silos model, monopolist supervisory agencies operate in each sector. From a logical point of view, having a setting with multiple authorities could be inconsistent with the establishment of a unique cross-bordering FFIU: however, the data commented on in the previous section demonstrated that there is an association between a multiple-authority setting and the existence of an FFIU. This is one more signal that politics – other than those associated with economics – matter in the construction of a supervisory regime.

In another 24 percent of the sample (24 countries), a new regime of supervision has been established with the introduction of a single or unified authority, which provides banking, securities and insurance markets supervision. The unified supervisor acts as a monopolistic agency for the financial system as a whole. In the small "peaks" group it is possible to distinguish between two types of countries (Australia and the Netherlands: 2 percent of our sample) where supervision aimed at preserving systemic stability is concentrated in one peak, and the conduct of business supervision is concentrated in another. Both the unified model and the peaks model are examples of the consolidation process that seems to dominate in the reform of supervisory architecture before the financial crisis. Such consolidation does not seem to be associated with the establishment of FFIUs, which could be because the politicians fear the existence of an over-powerful financial authority.

Finally, other countries have adopted hybrid supervisory settings, with some supervisors monitoring more than one segment of the market and others only one. We can bring them all together in a residual class (40 countries: 39 percent of our sample). The group comprises countries such as France, Italy and the US. The dimension of the residual class is unsurprising if we acknowledge that each national supervisory setting can have more than one driver, and that these are often intertwined and hidden in their historical patterns.

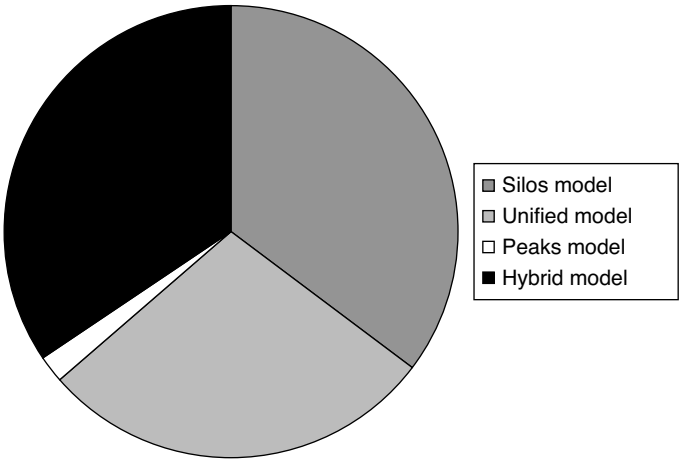

Figure 2.4 Models of financial supervisory architecture (102 countries)
Source: Masciandaro and Quintyn (2009).

The evolution of supervisory regimes becomes clearer if we zoom in on the 66 countries that have implemented reforms during the period 1988–2008: that is, before the financial crisis (Figure 2.4): the weights of the three main regimes (unified, silos and hybrid) become essentially equal – respectively, 30 percent, 33 percent and 33 percent – while the peaks regime is the least common (4 percent).

In other words, 40 percent of the sample (20 countries) have adopted an "innovative" regime of supervision (unified or peaks regime) while the remaining 60 percent (31 countries) have opted for a "conservative" approach: in other words, they have maintained the more traditional regime (silos or hybrid regime).

From a theoretical point of view, the choice between the single authority (integrated or unified) model and the multi-authority model has become one of the most relevant questions in the debate on the supervisory architecture. Identification of the optimal supervisory regime among the two models is a truly interesting problem. Prima facie, the single supervisor model seems to be the most "natural" and best reply to the challenges posed by the blurring of the financial market.[2]

[2] See De Luna Martinez and Rose (2001). The importance of financial conglomerates in explaining the supervisory architecture reforms before the crisis is put forward in Abrams and Taylor (2002), Grunbichler and Darlap (2003), Schoenmaker (2003).

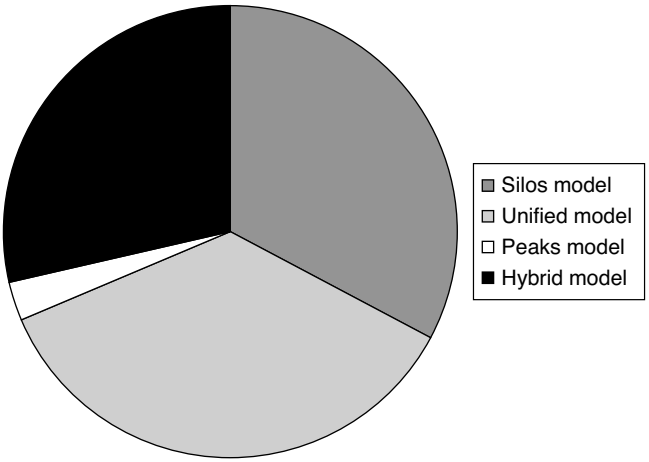

Figure 2.5 Models of financial supervision regimes after the reforms implemented before the global crisis (66 countries)

Source: Masciandaro and Quintyn (2009).

If, in the long run, the expected financial structure is a perfectly integrated and unique market, the single authority seems to be the best design for the supervisory architecture.[3] Consequently, the FIU would simply be a specialized division of the sole supervisor. However, as we have already noted, the data has so far contradicted this view.

In fact, the theoretical answer is not simple as it seems to be. One strand of literature[4] points out that, given different institutional settings, it is possible to highlight the corresponding gains and losses,[5] and to perform a rational cost–benefit analysis of alternative models.[6]

If it is possible to agree with the initial indication regarding the importance of the cost-benefit analysis,[7] it is also worth noting that the related

[3] See Lanoo (2000) and Briault (1999).

[4] See explicitly Hawkesby (2000), but most of the quoted studies seem to be consistent with the cost–benefit approach.

[5] For a complete analysis on the arguments in favor of and against integrated supervision, see De Luna Martinez and Rose (2001).

[6] In the banking regulation area in particular, Kahn and Santos (2001), provide a theoretical analysis of several alternative institutional allocations of regulations.

[7] The pros and cons of the integrated model are analyzed in Barth et al. (2002), Kremers et al. (2003).

conclusion on the possibility of finding an optimal supervisory regime seems to be rather unsatisfactory and inconclusive.

First, one can say that, given a single authority, it is possible to increase the efficiency of the relationship between the supervisor and regulated firms, because the cost of supervision and the possibility of supervisory arbitrage decrease.[8] On the one hand, this line of reasoning can also be used to justify the consolidation of the FFIU into a single financial supervisor.

But, on the other hand, given the single supervisor model, the efficiency of the supervisor-regulated firm relationships decreases because, with a single authority, capture risks increase,[9] while the innovation incentive in the regulated industry decreases. The risks of capture should be even higher if the single supervisor is also the FFIU.[10]

The risk of supervisory capture was discussed when we listed the pros and cons of having an FFIU. Therefore, the sign and the magnitude of the single supervisor model's effects, with respect to the relationship issues associated with regulated firms, seem rather vague and ambiguous.

The same kind of conclusion is reached by analyzing not only the relationships between the single authority and the political system (independence and accountability[11]; discretionary [12] and/or capture risks), but also the effects in terms of supervisory organization and resource allocation (economies[13] and/or diseconomies of scale[14]; benefits and/or costs of the internalization of goal conflicts[15]) and, finally, the consequences

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[8] Briault (1999), Llewellyn (1999), Goodhart (2002).

[9] Taylor (1995).

[10] Barth et al. (2002).

[11] Briault (1999), Llewellyn (1999), Lannoo (2000), Abrams and Taylor (2000). On the meaning of regulatory and supervisory independence see Quintyn and Taylor (2003). Beck et al. (2003) examine the impact of bank supervision independence on the corporate financing obstacles.

[12] Goodhart et al. (1998). See also Quintyn and Taylor (2003). On the risks of excessive power of a single regulator see also Taylor (1995), Briault (1999), Llewellyn (1999).

[13] Briault (1999, 2002), Llewellyn (1999), Lannoo (2000). Abrams and Taylor (2001) and Goodhart (2002) contend that the economies of scale argument is most applicable in small countries or those with small financial systems. Abrams and Taylor (2001) argue that the shortage of supervisory resources is a serious problem, particularly in emerging market economies.

[14] Goodhart et al. (1998).

[15] Briault (1999), Llewellyn (1999), Lannoo (2000), Wall and Eisenbeis (2000).

of the behavior of the financial services' customers (confidence[16] and/or over-confidence[17]).

At the end of the day, the consensus is that a "superior" model of supervision cannot be identified: all the more so, if we include the discussion concerning the allocation of the anti-money laundering powers and the establishment of an FFIU.

Furthermore, an empirical analysis of the relationships between supervisory settings and their economic performances has confirmed these insights: the evidence collected before the financial crisis, regarding the impact of institutional features in enhancing supervisory effectiveness, has remained at least ambiguous.

Barth et al. (2002) used a difference of means test to ascertain whether differences in the supervisory architecture are significantly correlated with key differences in banking industry structures. For a sample of 133 countries, for the period from 1996 to 1999, the authors found no correlation between the number of supervisory authorities and any of the key features of the banking systems analyzed. It seems that supervisory consolidation does not matter.

Čihák and Podpiera (2007) suggest that the unified regime is associated with higher quality and consistency of supervision across supervised firms. The quality of supervision is measured using the degree of compliance with BCP, IOSCO and IAIS standards. Whether the unified supervisor is located inside or outside the central bank, it does not have a significant impact on the quality of supervision.

Arnone and Gambini (2007) use the degree of compliance with the BCPs to investigate the relationship between the compliance capacity of each country and the way these countries have organized their supervisory architecture. The study discusses two fundamental issues, which we will also analyze: the supervisory model and the role of the central bank. Two econometric tests, conducted in this study and based on an OLS specification with heteroskedasticity-robust standard errors, show that a higher degree of compliance is achieved by those countries that apply the unified supervisory model, with some evidence in favor of those established inside the central bank.

In contrast, Eichengreen and Dincer (2011) find that, for a sample of 140 countries and for the period from 1998 to 2006, the presence of independent supervisors outside the central bank is associated with

[16] Llewellyn (1999).
[17] Lannoo (2000).

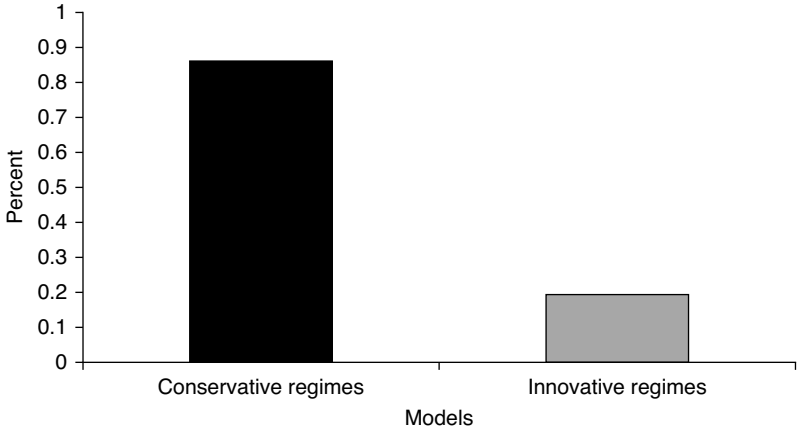

Figure 2.6 The central bank as main supervisor: conservative (silos) vs. innovative (single and peak) models (in %)
Source: Masciandaro and Quintyn (2009).

fewer non-performing loans as a share of GDP, and that those countries are less prone to systemic banking crises.[18]

It is worth noting that in all the empirical analyses so far, the question of how the money laundering powers are distributed has been completely missed.

Finally, and as a way of moving on to the next section, we highlight another interesting finding with regard to the supervisory evolution before the financial crisis: the "conservative" countries (i.e. the countries which have maintained their supervisory regimes) show one common feature, which is that the central bank is the sole (or the main) banking supervisor in 80 percent of the subsample (61 out of 76) (Figure 2.6 above).

At the same time, in the cases when an "innovative" model of supervision has been adopted, the role of the central bank has not been so well preserved (5 out of 26 cases, or 20 percent). In other words, the "conservative" approach seems more likely to be chosen when the central bank is already deeply involved in supervision, while the "innovative" approach seems to be more likely if the main supervisor is historically different from the central bank.

[18] However their results become insignificant when the data of the 2008–2009 crisis are included.

2.8.2 The cycle in central bank involvement in supervision and the FIUs

As discussed earlier, monetary policy and supervision both emerged from the financial liberalization period as stand-alone policy fields, in the sense that they were assigned their own objectives.

Traditionally, the functions of monetary policy and lender of last resort were delegated to the central bank (Goodhart et al. 1988, Goodhart and Schoenmaker 1995a, 1995b). Supervision – to the extent that there is such a function – was either housed in the central bank or in a separate institution, or countries had a hybrid situation. For instance, the Bank of England, Banque de France and Bank of Italy were in charge of banking supervision. The European continent had both models, and in the US, the function was divided between the FED and some specialized agencies (FDIC, OCC).

The separation of these policy fields has led very quickly to the critical question of whether their combination in one institution might cause conflicts of interest. This section discusses the economics of the role of central bank as supervisor (CBS). The aim is to show that the most relevant contribution made by the huge amount of literature that deals with the issue of CBS is to provide contrasting recommendations drawing the consequences for the FIU debate.

The central bank role as supervisor can be evaluated from a theoretical perspective under two different points of view: macro supervision and micro supervision. Nowadays the central bank is generally considered as the monetary authority: that is, the agent designated by society to manage liquidity in order to pursue monetary policy goals. Being a source of liquidity and acting as lender of last resort, central banks are naturally involved in preventing and managing systemic banking crises[19] (macro supervision)[20] – in advanced, emerging[21] and developing countries. This is done in close coordination with government agencies that are entrusted with responsibility for financial stability.[22]

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[19] Goodhart and Shoenmaker (1995a, 1995b), Masciandaro (2007), Lacoue-Labarthe (2003), Rochet (2004), Nier (2009), Blinder (2010), Goodhart (2010), Brunnermeir et al. (2009), Borio (2007, 2011), Nier et al. (2011a, 2011b), Bernanke (2011), Lamfalussy (2010), Bean (2011).

[20] Gersbach (2011) claims that macro prudential supervision should be outside the central bank responsibilities, in order to avoid time inconsistency in pursuing the monetary policy goals.

[21] Kawai and Morgan (2012).

[22] De Graeve et al. (2008), Gerlach et al. (2009), Angelini et al. (2012). For a survey, see Oosterloo and de Haan (2004).

Monetary responsibilities are strictly linked to the management of the payment system. Considering the previous statement, a natural involvement of the central bank in anti-money laundering activity via an FIU cannot be excluded a priori.

But should central banks also be in charge of pursuing financial stability through prudential oversight of individual banks (i.e. micro supervision)? This is a long-standing question; it is where the discussion first started, and it happened long before the current distinction between macro and micro supervision was introduced.

On the one hand, micro supervision is a task that historically has not always been assigned to central bankers.[23] Furthermore, the two decades before the financial crisis – the famous age of the "Great Moderation"[24] – have been characterized by a decrease in CBS.[25]

On the other hand, in previous decades several central banks were actively and deeply involved in pursuing tight structural controlling activities,[26] which were considered thoroughly integrated into the overall responsibility of the central bank for managing liquidity and the payment system.

Going beyond historical cyclical patterns and focusing on the economics of the relationship between monetary and supervision policies, is it possible to disentangle pros (*integration view*) and cons (*separation view*) of having monetary and supervisory functions under one roof[27] (Table 2.3)?

The justification for the central bank's high involvement in supervision (*integration view*) is usually supported by arguments that bringing all functions under the umbrella of the authority in charge of managing liquidity[28] creates information advantages and economy of scale. The informational advantages of the central banks can be used to justify the acquisition of the FIU powers by the central banks.

One additional argument is that the human capital employed by the central banks is presumably better equipped for managing supervisory issues as well.[29] The assumed superiority of human capital and

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[23] Ugolini (2011).

[24] See among others, Bean (2011).

[25] Masciandaro and Quintyn (2009), Eichengreen and Dincer (2011).

[26] Cagliarini et al. (2010), Goodhart (2010), Bordo (2011), Toniolo (2011).

[27] The integration versus separation approach was introduced in Masciandaro (2012).

[28] See, among others, Bernanke (2011), Herring and Carmassi (2008), Klomp and de Haan (2009), Blanchard et al. (2010), Blinder (2010), Lamfalussy (2010), Papademos (2010).

[29] Apinis et al. (2010), Ito (2010), Lamfalussy (2010).

Table 2.3 Integration and separation views on central bank involvement in supervision (CBS)

Integration view (pros): motivations	Separation view (cons: policy failure risk): motivations
CBS can produce informational advantages and economies of scale (Information Gains)	CBS can increase moral hazard uncertainty in supervised banks (Moral Hazard)
CBS can be more efficient, given that the human capital employed by central banks is better equipped to manage and oversee supervisory issues (Human Capital Gains)	CBS can increase uncertainty in the markets (Uncertainty)
	CBS can be less effective, given that monetary policy responsibilities can affect the behavior of the central bank as supervisor, owing to reputational and conflict-of-interest risks (Distorted Incentives)
	CBS can be less effective, given that a central banker can use his powers to favor banking constituents, which carries a related risk of capture (Capture)
	CBS can be less effective: as the supervisor becomes more powerful (as the central bank is), the risk of bureaucratic misconduct becomes greater (Bureaucratic Overpower)

the technological levels of central banks can also be an argument to be included in the discussion concerning the allocation of anti-money laundering responsibilities.

All in all, having access to all information would help higher skilled central bankers to act as more effective supervisors. In other words, setting up a supervisory authority different from the central bank is not considered efficient: that is, CBS brings potential gains to both parties – including the anti-money laundering function.

At the same time, the economic literature acknowledges that central bankers involved in supervision can produce greater policy failure costs (*separation view*); that is, limited CBS is better.

The crucial argument, which supports this point of view, is that if the central banker (i.e. the liquidity manager) is also a supervisor, the risk of policy failure is greater. It is important to highlight that the risk of policy

failure is endogenous with respect to the distribution of power: it exists only if the supervisor is the central bank, acting as liquidity manager. The risk of policy failure can have different origins, which can shed light on the various sources of policy failure risk, including the anti-money laundering perspective.

First of all, if the supervisor can discretionally manage liquidity, the risk of moral hazard in supervised banks can increase[30] (*moral hazard risk*). In the relationships between the supervisory central bank and the intermediaries, the regulated banks can be convinced that the supervisor will eventually be able to use its monetary policy power to camouflage its supervisory mistakes by implementing bailout policies. But if the bankers anticipate accommodative policies, their risk attitude is likely to increase and consequently the likelihood of being able to address financial turmoil and to effectively implement bailout measures increases as well. If the supervisor is not the liquidity manager this source of moral hazard is less likely to exist. If failure in implementing anti-money laundering policies becomes increasingly related to banking instability problems, the moral hazard argument is more likely to motivate the separation of the FIU from the central bank.

Second, the discretionary action of the central bank can increase the uncertainty in supervised markets, as the 2008 on-again/off-again rescues of financial firms in the US demonstrated[31] (*uncertainty risk*). If the supervisor is the liquidity manager, greater moral hazard problems and greater uncertainty in financial markets are likely to occur. We already know that a higher level of uncertainty also reduces also the effectiveness of anti-money laundering strategies.

Third, it has been highlighted that monetary policy responsibilities can negatively affect the central bank's behavior as supervisor,[32] because of the existence of reputational risks[33] and possible conflicts of interest between monetary policy and supervisory function[34] (*distorted incentives risk*). The same arguments can be elaborated on when discussing the anti-money laundering part of the story.

Fourth, the central banker can use his power in liquidity management to please the banking constituencies, instead of pursuing social welfare.

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[30] Masciandaro (2007), Lamfalussy (2010).

[31] Taylor (2010).

[32] Ioannidou (2005).

[33] Papademos (2010).

[34] Goodhart and Shoenmaker (1995), Blinder (2010), Gerlach et al. (2009), Masciandaro et al. (2013).

This can be the most dangerous case of a supervisor being captured by bankers,[35] given that the banking industry might be more inclined to capture supervisors that are powerful (*capture risk*).[36] The capture risks can be magnified if the central banker is also responsible for the anti-laundering policies.

Finally, the delegation of both banking supervision function and monetary policy function to the central bank can create an overly powerful bureaucracy, along with related risks of misconduct and of a "democratic deficit"[37] (*bureaucratic overpower risk*). The risks of bureaucratic overpower should be higher if the central bank also acts as the FIU.

From this overview, it has become clear that the comparison between the integration and separation views remains inconclusive. There is simply no optimal solution in the CBS debate. This conclusion is confirmed by the empirical work undertaken in this context, although it should be mentioned that analyses of this topic are rare and very recent. Again the anti-money laundering feature is completely missed in existing analysis.

The integration view finds empirical support in a study by Arnone and Gambini (2007), who use the degree of compliance with Basel Core Principles to investigate the possible relationship between the compliance capacity of each country and the way these countries have organized the role of the central bank in the supervisory process.

The separation view seems to find support in a paper by Eichengreen and Dincer (2011), who indicate that the performance of financial markets is better when supervision is delegated to an agency that is different from the central bank.[38] However, their results also show some evidence in favor of supervisory consolidation established within the central bank. Finally, other research has maintained that whether a unified supervisor is located inside or outside the central bank does not have any significant impact on the quality of supervision.[39]

A new dimension was added to the CBS debate when the architecture of supervision became a topic for discussion, as we have already noted in the previous section.

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[35] Barth et al. (2004), Djankov et al. (2002), Quintyn and Taylor (2003), Boyer and Ponce (2011a, 2011b).

[36] Boyer and Ponce (2011a, 2011b).

[37] Padoa Schioppa (2003), Masciandaro (2007), Blinder (2010), Oritani (2010), Goodhart (2010), Eichengreen and Dincer (2011).

[38] Eichengreen and Dincer (2011).

[39] Čihák and Podpiera (2007).

While unified (or integrated) supervisors were recommended in some cases, because of the resulting efficiency and effectiveness gains, the question of whether this unified supervisor should be housed in the central bank remained open. Supporters of the integration view argue that this would allow the central bank to be more effective in preventing systemic issues from arising, because it would also be informed about imbalances occurring in non-bank segments of the financial sector.

However, according to the separation point of view, if all supervision is handled by the central bank, the latter would now also be responsible for supervision of institutions with which it has traditionally never dealt: neither as lender of last resort, nor as a monetary policy agent. It means that extending its supervisory power to the other financial institutions would put pressure on extending its lender of last resort function as well, which would create more opportunities for moral hazard and reputational risk.

Thus, at the end of the day, the review of the literature shows that the various arguments lead to conflicting predictions in terms of what the optimal involvement of the central bank in supervision should be.

No consensus has been reached on what should be, in principle, the optimal degree of CBS, since it is impossible to evaluate – in general, objective and invariable terms – the pros and cons of each specific aspect of supervision that is being delegated to the central bank. In other words, it is not possible to conclude that the integration view is superior to the separation view, and vice versa. Here we note that considering the anti-money laundering dimension still does not change our conclusions.

The same conclusions can be reached if we consider the integration versus separation dilemma from the monetary policy point of view,[40] which is related to the economics of the optimal central bank governance. This argument will be analyzed in the next section.

At the end of the day, keeping in mind all conflicting arguments, it is not a surprise that there is no agreement on the appropriate degree of central bank involvement in supervision.

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[40] See Goodhart and Schoenmaker (1995), Arnone and Gambini (2007), Masciandaro (2007) and Hussain (2009) for comprehensive reviews of the literature, that also consider the question from the monetary policy effectiveness point of view. On this issue, as well as on the related consequences regarding central bank governance, see also Goodhart et al. (2009), Crockett (2010), Papademos (2010), Svensson (2010), Aydin and Volkan (2011) and Woodford (2012). For the specific relationship between central bank involvement in supervision and the (internal and external) monetary regimes, see Dalla Pellegrina et al. (2011, 2012).

If this line of thinking is correct, one additional conclusion can be made: the cyclical pattern of CBS that we observe in reality cannot be explained by the existence of a superior setting for delegating powers to central banks.

Rather, the different arguments supporting the integration view or the separation view, including the allocation of anti-money laundering powers, can be more – or less – important in the minds of those who design and implement the supervisory regime.

What we are saying is that the research attention has to be focused on the agent responsible for monetary and financial settings (i.e. the policy-maker), using both the economic and political economy approaches.[41]

In the institutional analysis framework where the effect of the central bank as supervisor is ambiguous, a question naturally arises: how can CBS be evaluated? Or, from a more challenging angle, we can wonder: is it possible to measure the evolution of CBS by using the qualitative narrative of the actual central bank regimes in order to arrive at quantitative analyses? This was the motivation for constructing the indexes for the central bank's involvement in supervision.[42]

The indexes are constructed in order to help with analysis of which authorities, and how many authorities, are empowered to supervise the three traditional sectors of financial activity: banking, securities, and insurance. The allocation of financial supervisory power will be used in the next section to study the distribution of the anti-money laundering responsibilities.

To transform qualitative information into quantitative indicators, the central bank as financial supervisor (CBFS) index[43] is constructed. The CBFS is a measure of the level of the central bank's involvement in financial supervision; it is derived from the classical numerical index.[44] The CBFS index is used to calculate the degree of CBS. The robustness of the application of the CBFS index depends on the following two key hypotheses.[45]

First, it must be possible to define sectors requiring supervision (institutional dimension) for every given country (geographical dimension). In other words, in every country, each single financial market constitutes a distinct market for supervision. In fact, it is still possible to identify both

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[41] Masciandaro (2006, 2007, 2008, 2009), Masciandaro and Quintyn (2008).
[42] Masciandaro (2006, 2007, 2008), Masciandaro and Quintyn (2009).
[43] Masciandaro and Quintyn (2011), Masciandaro et al. (2013).
[44] Hirschman (1964).
[45] Masciandaro and Quintyn (2012).

the geographical dimension (the existence of separate nations) and the institutional dimension (the existence of separate markets), despite the fact that traditional boundaries between banking, securities, and insurance activities have been blurred and the formation of large financial conglomerates has effectively diluted the definition of intermediaries.

Then, for each sector, in the case of the presence of more than one agency, the distribution of supervisory power among different authorities – and consequently their share of involvement in the supervision – is unambiguous. In each sector, as the degree of supervision consolidation becomes lower, the number of authorities involved in monitoring activity becomes greater.

Second, the supervisory power is unified for all sectors. Given the different kinds of supervisory activity (banking supervision, securities markets supervision, and insurance supervision) there is perfect substitutability in terms of supervisory power and/or supervisory skills. Supervisory power is a feature of each authority, irrespective of where this power is exercised (agency dimension). Consequently, in each country and for each authority, we have summed up the share of the supervisory power that it has in one sector with the share of power it exercises in another (if any). For each authority, as the degree of supervisory power increases, the number of sectors over which that agency exercises monitoring responsibility increases as well. All three dimensions – geographical, institutional and agency – have legal foundations and economic meaning.

The idea behind this methodology is quite simple: if the share of the central bank's supervisory power is greater, then so are the odds that the central bank is involved in the overall supervisory organization. In other words, CBS is likely to be at a maximum when the central banker is the unified supervisor in charge, while the involvement is likely to be lower when there are a smaller number of sectors over which the central bank has supervisory responsibilities. In order to construct the CBFS index, it is just sufficient to measure the share of supervisory power assigned to the central bank in each country, which can go from 0 to 1.

By using this index, it is possible to show how CBS has changed, both before and after the financial crisis.[46] The evolution of the CBFS index is described in an 88-country database for the period 1998–2009. Inspection of this database before the crisis highlights a trend toward supervision consolidation outside central banks, where outliers are those central banks without monopolistic power over monetary policy.

[46] Masciandaro, Pansini and Quintyn (2013).

In other words, before the financial crisis, the trend in the dynamics of supervision structures seemed to lead toward two destinations: consolidation and specialization of supervision. The reforms were driven by a general tendency to reduce the number of agencies, in order to reach either a unified model of supervision or the so-called twin peaks model.[47]

In both models, supervisors are specialized, and have a well-defined mission. The trend toward specialization becomes particularly evident if we look at the route that national central banks are following. These banks – the FED, the ECB, the Bank of England, the Bank of Japan – had full responsibility for monetary policy, but did not have full responsibility for supervisory policy. The worldwide increase in specialization in monetary policy led to central bank reforms that gave a clear mandate that was focused on price stability and greater political and economic independence. The best practices in the monetary regime design can be summarized as: flexible policy rules conducted by an independent and accountable central bank that acts in a flexible exchange rate environment.[48]

This does not mean that these banks were not concerned about financial stability – actually the opposite was true, as we would later observe during the financial crisis. The banks usually aimed to address financial stability problems from a macroeconomic perspective, and saw this as a function of their primary mission (i.e. monetary policy).

Among central banks that did not have full responsibility for monetary policy, such as ones belonging to the European Monetary Union, several banks chose to specialize in supervision.[49] In general, it was noticed that the central banks of EMU members were turning into financial stability agencies. The explanation is simple: when the central banker is no longer a unique manager of liquidity – as in the case of the central banks which have joined the eurozone – the expected downsides of delegating them supervision becomes weaker, and the integration view gains momentum.

In general, analyses based on the CBFS Index conclude that before the financial crisis central banks had made a substantial move away from obtaining supervisory responsibilities, and the separation view dominated. In terms of political economy, we can say that, on average,

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[47] Masciandaro and Quintyn (2009, 2011).
[48] Cukierman (2008).
[49] Herring and Carmassi (2008).

policymakers allocated more weight to the expected gains of making the central bank the monetary agent and another authority the supervisory agency, in comparison to the weight allocated to the benefits of delegating both functions to the central bank and facing the potential costs related to the risk of policy failures. Therefore, the optimal degree of CBS was likely to decrease.

By the eve of the financial crisis, financial supervision had evolved a lot, compared to the 30 years that had gone before it. Many countries had attempted to make their supervisory framework more efficient and effective. This topic has attracted a large amount of attention from academics – although, as we have seen, the results of the debates themselves remained highly inconclusive.

The accumulation of systemic crises also caused the involvement of international financial institutions (BIS, IMF and World Bank) in supervisory issues.[50] Given the open-ended nature of the academic debates, it does not come as a big surprise that the empirical evidence related to the impact of the various reform agendas on financial sector stability remains inconclusive, as we have already discussed. This ambiguity is also likely to influence the debate on how to allocate anti-money laundering power and how to design the corresponding FIU.

However, the arrival of the financial crisis questioned the efficiency of a lot of decisions made in both the regulatory and supervisory areas, and led to some important paradigm shifts. The literature that investigates the reasons and origins of the crisis focuses heavily on identifying macroeconomic imbalances, macroeconomic policy failures and regulatory failures in all segments of the financial system as major contributing factors.[51] But more specialized literature provides detailed accounts of the contribution of supervisory failures.[52]

Failures attributable to supervisory architecture are only mentioned in two specific cases. In the United States, some pointed at the fragmented US supervisory system as a major contributor to the crisis. In the United Kingdom, coordination failures between the FSA and Bank of England (and the UK Treasury) were mentioned in the

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[50] The Basel Core Principles for Effective Supervision, for instance, had several principles that were concerned with supervisory practices. Principle 1 stated that supervisors should have "operational autonomy."

[51] See among others, Allen and Carletti (2009), Brunnemeier et al. (2009) and Buiter (2008).

[52] See for instance Financial Services Authority (2009), Palmer and Cerutti (2009), Tabellini (2008) and Viñals et al. (2010)

Northern Rock episode, thereby indirectly referring to the supervisory architecture (Buiter 2008, FSA 2009). The other assertion often heard is that, in all of the countries stricken by the crisis, there was no institution in charge of macro-prudential or systemic supervision, which is now generally recognized as an architectural failure. Finally, there are also the counterfactuals: in the wake of the crisis several countries revamped their supervisory architecture (Belgium, Germany, Ireland, and the UK). These actions could be indications that flaws in the architecture were blamed in part for the crises in these countries.

In sum, the narrative account of the role of supervision in the global crisis indicates that several of the hoped-for improvements in the effectiveness and the incentive structure for supervision did not work. The same behavior, documented during previous crises, such as the "not on my watch" approach and the "sweeping of problems under the carpet" had occurred again, sometimes on even larger scales.

A recent empirical analysis (Masciandaro et al. 2013) has confirmed that neither supervisory architecture nor improvements in supervisory governance are able to prevent or mitigate a financial crisis, which puts into question a large number of assertions that were made before the crisis.

At the same time, we have to acknowledge that politicians seem to prefer to include anti-monetary powers in the central bank's perimeter when the central banker is both the monetary and banking authority. The economic rationale seems to be linked to the fact that the same agency can gain informational revenue by acting as payment system manager and banking supervisor.

2.8.3 Supervisory governance and the FIUs

Following Masciandaro et al. (2013), in recent times, the need for principles of effective supervisory governance has arisen in order to withstand the various sources of captures (political, industry and self-capture) that supervisors are facing.

In analyzing the economics and politics of an FIU we pointed out how important the governance mechanism is in determining effectiveness in anti-money laundering action. Now we have to link the specific reflections developed in studying the specific setting of the FIUs with the overall debate on supervisory governance.

The crucial starting point is to acknowledge that the economics of supervisory governance was born in the central banking area.

Until 30 years ago, economic theory did not attribute importance to the concept of central bank governance. The institutional arrangements

became important after the economic theory started to stress its role in determining macroeconomic performances (i.e. during the New Classical Revolution). As a result, the role of the central bank's design has been confirmed in the New Keynesian analysis of the monetary policy.[53]

The theoretical bottom line is the following: the policymakers tend to use monetary policy instruments with a short-sighted perspective by using inflation tax to smooth over the different kinds of macroeconomic shocks and trying to exploit the tradeoff between real gains and nominal (inflationary) costs.[54] The inflation tax finances stabilization policies.

But as the markets become more efficient, there is a greater risk that the short-sighted monetary policies will only produce inflation. In fact, the rational private agents fully anticipate the political incentives to use the inflation tax and, as a result, they fully adjust the nominal variables. In this framework the Friedman–Lucas[55] proposition on monetary policy neutrality holds.

Furthermore, the political inflation bias can dynamically generate greater uncertainty and negative externalities (such as moral hazard risks). The inflation tax is inefficiently used in a systematic way. It has become high and volatile and, as a result, it only produces macroeconomic distortions.

The inefficient use of inflation tax was empirically confirmed by the fact that the optimal taxation theory didn't find any support in the data. The optimal taxation theory suggests that the benevolent

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[53] For well conducted reviews see Eijffinger and De Haan (1996), Cukierman (1996, 2008), Walsh (2008). The inefficient use of inflation tax by the government seems to be a common feature of the different theoretical explanations of the CBI effectiveness; Eijffinger and De Haan (1996) discussed three strands of the literature: the public choice view, the fiscal view and the time inconsistency view. While the first two views highlight the reasons why the governments in charge can like accommodative monetary policies, the third one explains their ineffectiveness by using the rational expectations hypothesis. Bibow (2010) illustrated the views of Friedman and Keynes on CBI. Goodfriend (2012) reviewed CBI as it emerged: first under the gold standard, and later with fiat money.

[54] For recently literature, see Bernanke (2013b) on the advantages of having a long-sighted independent central banker instead of short-sighted politicians.

[55] Friedman (1968), Lucas (1973).

policymaker chooses the rate of any taxation – including the inflation tax – in order to minimize the social cost involved. Consequently, inflation and tax rates have a positive correlation. If the optimal taxation theory fails to prove this hypothesis empirically, it is natural to conclude that the government is not benevolent, but is being affected by inflation biases.

Therefore, a ban on the use of the monetary policy for inflation tax purposes becomes the social goal. The institutional setting gains momentum; the relationship (governance) between the policymaker (who designs the overall economic policy) and the central bank (which is responsible for the monetary policy) becomes crucial in avoiding an inflation bias. If the markets are more rational, the rules of the game between policymakers and central bankers will gain more momentum.[56] The optimal central bank governance has to offer two features.

On the one side, the central banker has to be independent: that is, the central bank enjoys the ability to implement non-inflationary monetary policy without any external (political) short-sighted interference. The central banker becomes a veto player against inflationary monetary policy.

It is interesting to highlight that independence in monetary theory is a device used to reduce the capture of the agency by the politicians; but in our discussion on the FFIU, setting independence is a required in order to minimize capture by the regulated firms (i.e. the bank). However it is worth noting that the interconnections between political capture and regulatory capture are likely to exist both in the monetary field and in the anti-money laundering field.

On the other side, the central banker has to be conservative, where conservatism refers to the importance that he assigns to price stability with respect to other macroeconomic objectives. The conservatism is a necessary step in order to avoid a situation in which the central banker himself becomes a source of the inflation bias. Independence and conservatism become the conditions for the implementation of credible

[56] Barro and Gordon (1983), Backus and Driffil (1985), Rogoff (1985) explored the role of the rules of the game in determining the outcomes of the overall macroeconomic policy, while Sargent and Wallace (1981), Niemann (2011), Niemann et al. (2013) and Martin (2013) focused their attention on fiscal policy.

non-inflationary monetary policy.[57] Independence can be considered a device that implements conservative monetary policy.[58]

But the private agents trust the central banker only if effective rules on accountability and transparency hold. In other words, a conservative central bank is credible if he works in an institutional setting which guarantees independence and accountability for the banker, and if he acts in a transparent way[59] and implements an effective communication policy.[60]

In our discussion on the optimal setting of an FFIU, the supervisor's credibility depends on the existence of both independence and accountability.

At the same time, the relationship between independence and accountability represents the core of so-called central bank governance,[61] and we have to acknowledge that we borrow these concepts entirely from monetary theory.

Central bank governance has become one of the main features of the institutional setting for implementing day-to-day monetary policy:[62] given the long-run goal to avoid the risk of inflation, the modern central banker can also smooth the way for real business cycles[63] by using monetary policy rules.[64] Monetary policy becomes the final outcome of a complex interaction between three main components: monetary institutions, central bankers' preferences, and policy rules.

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[57] On the relationship between CBI and central banker conservativeness see also Eijffinger and Hoeberichts (1988), McCallum (1995) and Fisher (1995). On monetary conservativeness and fiscal policy see Niemann (2011).

[58] Eijffinger and Hoeberichts (1988, 2008) shed light on the tradeoff between conservativeness and independence: downgrading in central bank independence can increase the central banker's conservativeness. The first article used the neoclassic framework while the second one applied a new Keynesian model to obtain the same result.

[59] On transparency see Eijffinger and Geraarts (2006), Hughes et al. (2006).

[60] On communication see Cukierman and Meltzer (1986), Goodfriend (1986), Issing (2005a) and Blinder et al. (2008).

[61] Briault et al. (1996), Lybek and Morris (2004), Frisell et al. (2004), Crowe and Meade (2007), Hasan and Mester (2010).

[62] Taylor (2013) cast doubt on the role of the CBI in generating rules-based monetary policies.

[63] Bernanke and Gertler (1995), Clarida et al. (1999), Woodford (2003), Gali and Monacelli (2005).

[64] Taylor (1993), Henderson and McKibbin (1993), Persson and Tabellini (1993), Walsh (1995), Svensson (1995).

In this framework the consequences of a change in the central bank involvement in supervision are far to be obvious and predictable.

Let us consider the two dimensions that are usually considered in evaluating the level of CBI[65]: political independence and economic independence. Political independence refers to the discretion given to the central bank in the design and implementation of policies that are consistent with the monetary stability goal. Economic independence is related to the freedom of the central bank in choosing the set of instruments consistent with the monetary policy, as defined above.

Therefore, the more the central bank's involvement in supervision – and/or anti-money laundering policy – reduces the priority of monetary stability in defining and implementing the goals and instruments of the monetary policy, the lower the CBI will be.

To the best of our knowledge, the only comparative analysis of levels of independence to take into account where the supervision is located[66] shows that location matters. So far, there has been no study made of the relationships between CBI and the allocation of the anti-money laundering powers.

The analysis of the status quo before the financial crisis demonstrates that supervisors located inside the central bank have been granted the highest degree of supervisory independence. In other words, when the central banks enjoy high levels of independence, the delegation of the supervisory function to the central bank is likely to automatically increase the autonomy of that policy.[67] We can assume that the same will be true with regard to anti-money laundering powers.

Furthermore, unified supervisors located outside the central bank have the lowest degree of the same kind of independence. However, the relevance of these results is limited by the fact that concepts and definitions of independence are different in the two fields of monetary policy and supervision.[68] In general, the question of the central bank's involvement can be analyzed from two symmetrical points of view: on the one side, a perspective that takes into account the effectiveness of the supervision; on the other side, an approach that considers the performance of

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[65] Grilli et al. (1991) and Fisher (1995).

[66] Masciandaro et al. (2008).

[67] Cukierman (2013b).

[68] Masciandaro et al. (2008). On analogies and differences between the roles of independence with respect to the conduct of monetary policy and with respect to supervision see Arnone and Gambini (2007) and Cukierman (2013b). On the empirics of the central bank independence as supervisor see Gaganis (2013).

the monetary policy. In the following pages of this section we focus on the monetary policy side of the story.[69]

What happens when the process goes in the opposite direction: that is, when central banks which specialize in monetary policy change direction and return to a supervisory role? Is the independence of the central bank as monetary authority affected by the additional responsibility for financial stability? It is a matter of fact that in recent reforms of the central bank settings in the United States and Europe, the financial stability goal has been elevated.[70] The implications of CBI are far from being consolidated.

Some scholars[71] assert that the central bank's involvement in supervision reduces the CBI, given that being in charge of banking supervision reduces the central bank's commitment – as well as its credibility – as a veto player against inflation. Here we can wonder if the same arguments can be applied to the discussion of the central bank's involvement in anti-money laundering policies.

The first argument against the central bank's involvement is the possibility of a conflict of interest in managing the two policies, which could reduce the effectiveness of actions aimed at creating monetary stability. Furthermore, the probability of the conflict of interest can be endogenous if the probability of financial instability grows as a result of an increase in the moral hazard and in the number of failed banking firms. However, this argument seems unlikely to be applicable to the discussion if it is focused on the central bank's role in anti-money laundering.

The second argument concerns the reputational risks which occur when a central bank is also a supervisor. Failures in supervision, as well as in anti-money laundering actions, can damage the central bank's reputation, which is a necessary asset for it to be a credible monetary agent.

Other scholars,[72] however, notice that the effect of the involvement in supervision on the capacity of the central bank to be an effective monetary authority does not allow clear-cut conclusions, given that arguments pro the involvement can be found in the literature. Basically, the central bank's involvement in supervision is supported by the argument that the latter provides information advantages and economies of scale in monetary policy.

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[69] Masciandaro (2013b) addresses the supervisory policy side.
[70] Cukierman (2013a), Masciandaro and Nieto (2013).
[71] Grilli et al. (1991), Issing (2012).
[72] Eijffinger and De Haan (1996).

Quite a few authors[73] have reached a conclusion that the consistency between the central bank's involvement in addressing financial stability and financial integrity, and the effectiveness of monetary policy action in controlling the inflation risk cannot be excluded a priori. Therefore, the existing literature on the relationship between the effectiveness of the monetary veto player and its involvement in supervision and anti-money laundering has not provided any uniform and definitive conclusions.

The reflections on the best practices in central banking governance have been developed in the supervisory area. Das and Quintyn (2002) and Quintyn (2007) propose a governance framework that consists of four reinforcing pillars (independence, accountability, transparency and integrity). While Rochet (2004) uses a theoretical model to argue in favor of establishing independent and accountable banking supervisors. Additional works on supervisory independence (Quintyn and Taylor 2003) and accountability (Hüpkes et al. 2005) make a list of the necessary operational components of these governance pillars. Ponce (2010) develops a theoretical model, which shows that supervisory independence has a positive impact on the soundness of the financial sector.[74]

The bottom line of the literature that investigates governance is that independent supervisors need an elaborate set of accountability arrangements to offset the fact that a very specific contract for financial supervision (in the principal–agent sense) is impossible, given the great range of contingencies that can occur in supervision (see also Schuler (2003), Majone (2005) and Dijkstra (2010)).

Finally, several scholars argue explicitly that financial sector governance can benefit from more reliance on market micro-discipline, since it introduces additional checks on the supervisory process. Calomiris (1999a, 1999b) argues that requiring banks to maintain a minimal proportion of subordinated debt finance can reduce the moral hazard that is

[73] Goodhart and Schoenmaker (1995), Cukierman (1996) and (2013), Franck and Krausz (2008), Crockett (2010), Papademos (2010), Svensson (2010), Aydin and Volkan (2011), Woodford (2012), Reis (2013), Reichlin and Baldwin (2013). Fisher (1995) asserted that the role of the central banker as supervisor is not of much importance. On the empirical relationship between CBI and involvement in supervision see Dalla Pellegrina et al. (2013).

[74] In a way, the work on supervisory governance complements the BCPs, which contain some of these elements, but is mainly focused on the necessary components of the regulatory and supervisory frameworks. The 2006 BCP revision took on board more elements of operational independence, accountability and transparency as best practices.

typically created by government safety nets (which include supervision). In the same vein, Barth et al. (2006) argue that the supervisors' incentive structure can never be perfectly aligned, mainly because of political and bureaucratic interference. Therefore, mechanisms and incentives need to be created to foster market discipline as an additional control of the supervisory system and of the financial institutions' governance.

Finally, the impact of the quality of supervisory governance on financial soundness has, to our knowledge, only been empirically analyzed by one study. Das et al. (2004) show that the quality of governance matters for banking soundness. Results also indicate that effective public sector governance amplifies the impact of supervisory governance on the soundness of financial systems. Buch and DeLong (2008) explore the relationship between the power of the supervisors to influence the manager's decisions and the bank's risk taking. They show that weak supervision increases banking risks. Recently, Chortareas et al. (2012) used a sample of 22 EU countries in the period from 2000 to 2008 (i.e. before the crisis) to show that strengthening supervisory powers can improve the bank's efficiency and that these beneficial effects are more pronounced in countries with higher quality institutions.

In contrast, Eichengreen and Dincer (2011) find, for a sample of 140 countries for the period 1998–2006, that the presence of independent supervisors that are located outside the central bank is associated with fewer non-performing loans as a share of GDP, and that those countries are less prone to systemic banking crises.[75]

Moving on to the governance indicators, we use the earlier work by Quintyn et al. (2007) on the computation of independence and accountability ratings for bank supervision agencies. In particular, we refer to this paper for justification of the criteria. A rating of "2" is given to the supervisory agency if the legal framework satisfies the criteria, "1" is given for partial compliance, and "0" for noncompliance. The individual ratings are summed and normalized between 0 and 1.[76]

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[75] However their results are not significant when the data of the 2008–2009 Crisis are included.

[76] The ratings are based on a review of the individual countries' legal documents, supplemented by assessments of the "Basel Core Principles for Effective Banking Supervision" and of the "IMF code on Transparency of Monetary and Financial Policies" published in the IMF's Financial Sector Stability Assessments (FSSA) where needed. In some cases clarifications were obtained from interviews with country officials. So, this is a "de jure" approach to the quality of supervisory governance and we are aware of the fact that "de facto" situations may differ from "de jure" findings.

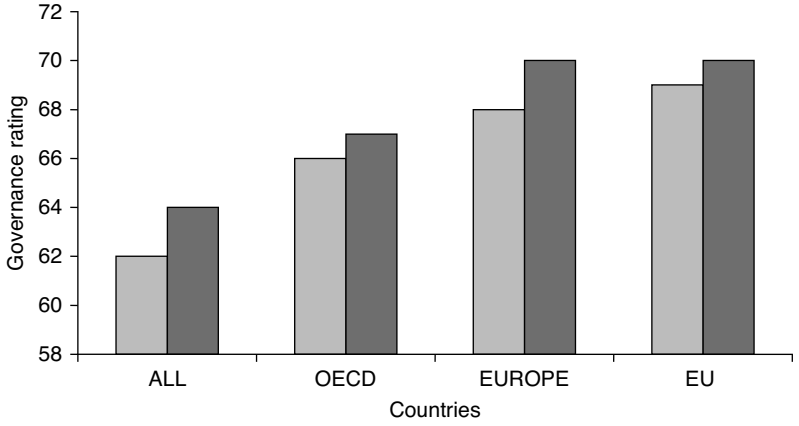

Figure 2.7 Supervisory governance ratings

Figure 2.7 presents the ratings for independence and accountability, taken together. Before the financial crisis, the quality of governance arrangements (gray bars) was rated highest in the EU, followed by Europe and finally the industrial countries. These three groups of scores are significantly higher than the overall mean of the country sample. In the wake of the crisis, this period is represented with blue bars, which show that all the groups demonstrate further increases in the quality of governance.

It is interesting to note that the increase in the quality of governance cannot be automatically linked to the overall involvement of the central bank in supervision, which we described above. In fact the only analysis (Masciandaro et al. 2008) which studied the impact of the location of the supervision – either inside or outside the central bank – on the governance ratings, demonstrated that levels of the overall ratings are nearly identical, irrespective of the location.

Furthermore, as we have already mentioned, the findings of Masciandaro et al. (2013) reveal that those features that are meant to strengthen supervision and, through it, financial and economic resilience – such as effective governance – have not really met those objectives. The study is related to the strand of literature that investigates the structural drivers of the financial crisis.

Cross-country studies have produced predictions of resilience by analyzing the potential reasons for the economic and financial downturn (Berkmen et al. 2011, Caprio et al. 2011, Claessens et al. 2010, Giannone

et al. 2011, Rose and Spiegel 2011). The crisis was a synchronized shock for almost all countries around the world. At the same time, the depth of the recession varies significantly from country to country.

As Giannone et al. (2011) have pointed out, the global nature of the crisis and the cross-country heterogeneity of the impact represent a unique opportunity to shed light on the relationships – if any – between the institutional features of the national systems and their resilience with respect to relevant economic and financial shocks. Masciandaro et al. (2013) focus their attention on the supervisory features.

According to empirical tests, the governance features are associated with weaker resilience. Furthermore, the study notices that the countries with the best ratings, in terms of the overall regulatory framework of the public sector, were hit the hardest economically.

In conclusion, our overall analysis reached at least two results. First of all, the best practices in designing supervisory governance, as it was defined before the crisis, can be applied without loss of generality in addressing the question of how to define the optimal FFIU: independence and accountability are the two necessary pillars. At the same time, the financial turmoil signalled that the governance principles cannot be considered a panacea that will face and fix every macroeconomic problem.

2.9 The future of the FIUs: the role of September 11

In the previous chapters we commented on the current state of the existing FIU models. The economics suggested that the financial model of FIU (FFIU) – which is the regime adopted in the US, for example – should be the best choice. Nevertheless, although nowadays the FFIU is still the most common framework, a descriptive analysis of the FIUs' establishment shows a more nuanced reality. Therefore, we wonder which drivers can explain the present situation. The answer can be found in a recent econometric analysis presented in Masciandaro and Volpicella (2014), which runs a cross-section study.

The following equation has been estimated:

$$\begin{aligned} FFIU_i = {} & \alpha + \sum_{n=1}^{N} \beta_n \, ECONOMIC\ DEVELOPMENT_{ni} \\ & + \sum_{m=1}^{M} \gamma_m \, FINANCIAL\ INDUSTRY_{mi} + \sum_{o=1}^{0} \delta_o \, SUPERVISION_{oi} \\ & + \xi ESTABLISHMENT_i + \sum_{p=1}^{P} \eta_p \, CONTROLS_{pi} + \varepsilon_i \end{aligned} \tag{2.17}$$

where subscript *i* identifies each country in the sample. The dependent is the dummy variable *FFIU*, taking the value 1 if the FIU is financial and 0 otherwise. The covariates include: regressors for economic development, that is the GPD per capita and unemployment (*ECONOMIC DEVELOPMENT*$_n$ = *GDPcapita*, *UN*); features of financial industry, that is credit to domestic sector, stocks traded and latitude (*FINANCIAL INDUSTRY*$_m$ = *CREDITGDP*, *STGDP*, *LAT*); characteristics of supervision governance, that is the level of consolidation and the role of central bank (*SUPERVISION*$_o$ = *FAC*, *CBFA*); the year of establishment of the FIU (*ESTABLISHMENT*); other control variables (*CONTROLS*), including effectiveness of law, population, continental fixed effects (dummy variables), membership to international AML organizations, religion (dummy variables) and legal origin (dummy variables) (*CONTROLS*$_p$ = *LAWEFF*, *POP*, *AMERICA*, *EUROPE*, *ASIA*, *FIUINTMEMB*, *CATH*, *BUDD*, *ORTHO*, *PROTEST*, *OTHERREL*, *ENGLISH*, *FRENCH*, *GERMAN*).[77]

It is noteworthy that the effectiveness legal index (*LAWEFF*) has been introduced into equation (2.17): it controls for the presence of dishonest policymakers.[78] Given that the theoretical framework relies on benevolent politicians – as we suppose in Section 2.6.2 – a proxy of the quality of law has been inserted to avoid distortions derived from the presence of corrupted policymakers (i.e. grabbing-hand politicians), and to obtain parameters related to the choice made by a benevolent government in terms of the FIU model. Finally, ε_i is an idiosyncratic normally distributed error term with 0 mean and constant variance.

To the best of our knowledge, there are no prior empirical studies on the determinants of the FFIU establishment. As a result, the choice of regressors is critical. However, the FFIU, given its financial nature, can be considered part of the supervision structure; therefore, it is natural to rely on the standard controls presented by supervision literature in exploring the drivers of institutional establishment, such as economic development, financial industry and other institutional variables. Furthermore, it is also necessary to control for the structure of supervision because, as shown, the FFIU works within a financial authority – that is, a central bank, ministry of finance, or banking authority – which

[77] In order to avoid the dummy variable trap, we need to drop one of the religion variables, that is, *MUSLIM*. As we have many regressors, including several dummy variables, and a relatively small sample, we also checked for multicollinearity: we excluded *AFRICA*, *OCEANIA*, *SCAND* and *SOC*.

[78] See Masciandaro and Quintyn (2008), Dalla Pellegrina et al. (2013) and Masciandaro and Volpicella (2014b).

is often in charge of supervision of the financial industry – that is, the banking sector, securities and insurers.

The specifications of equation (2.17) may give rise to issues of causality between the dependent and the independent variables (i.e. endogeneity). At the same time, it can be claimed that the current FIU regime is very unlikely to affect our covariates, meaning that the possibility of the simultaneous determination of the FIU model and the regressors should be prevented.

Equation (2.17) is estimated by using a logit model in order to obtain the expected value of the likelihood that the FIU is financial. Robust standard errors are used to fix the heteroskedasticity. Additionally, the presence of outliers[79] is also checked.

Columns (1) and (2) of Table 2.4 below show the main results. Low-income countries are more likely to adopt an FFIU and developed stock markets also make a significant impact on the likelihood of a financial model being chosen. Features of supervision do not have any affect. The year of establishment seems to play a pivotal role: if the establishment is more recent, there is a lower probability that an FFIU will be set up.

Furthermore, given that the coefficient of the effectiveness of law is not significant, we can conclude that the presence of grabbing-hand politicians does not impact on the likelihood of building an FFIU. So we can exclude that the establishment of an FFIU will be motivated by the preferences of both captured and corrupted politicians.

Among other things, it is noteworthy that a big-country effect seems to occur because high-population countries are more likely to set up an FFIU.[80] Negative continental fixed effects occur for American and Asian countries; as shown above, in order to avoid perfect multicollinearity, AFRICA[81] has been excluded.

At the same time, joining AML international organizations seems to increase the likelihood of setting up models that are different from the FFIUs. It has been confirmed that joining the AML international community is not associated with a specific model of FIU. The effect of religions is negative and significant; if we included *MUSLIM*, its impact would be positive. The econometric result deserves further attention in the future.

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[79] DFBETA method has been used.

[80] Size-country effect is not uncommon in supervision. For instance, see Masciandaro (2007).

[81] In our sample, we have seven African countries: each of them adopts a Banking FIU.

Table 2.4 Drivers of FIU's establishment: results

Dependent variable: *FFIU*	**(1)**	**(2)**	**(3)**	**(4)**
GDPcapita	−0.0002452***	−0.0001526**	−0.0001435**	−0.0000925**
UN	−0.1642265	−0.0117163	−0.1037352	−0.0074233
CREDITGDP	0.0330865	0.0096764	0.0204598	0.0059658
STGDP	0.0842378**	0.0395644**	0.0475697**	0.0233213**
LAT	21.00368	8.353784	1.131136**	4.423775
CBFA	−0.2264826	−0.1729464	−0.1705475	−0.1378589
FAC	0.2471058	0.1614773	0.1679172	0.1196
ESTABLISHMENT	−0.712762***		−0.4121814***	
SEPTEMBERELEVEN		−3.998397**		−2.290186***
LAWEFF	−0.1394054	−0.0173706	−0.0760224**	−0.0069632
POP	2.087502***	1.313348**	1.291688***	0.813396**
AMERICA	−4.29928**	−3.907197	−2.536753*	−2.604584
EUROPE	−1.797937	−2.766124	−0.7340347	−1.64296*
ASIA	−10.29331**	−5.098861**	−5.944471***	−3.02398***
FIUINTMEMB	−6.453733***	−3.559466**	−3.880639***	−2.183639**
CATH	−19.10848***	−1.315519**	−6.433132***	−2.920262
BUDD	−30.17296***	−232492***	−1.294868***	−9.132233***
ORTHO	−31.53933**	−2.077937***	−1.319311***	−7.257323***
PROTEST	−26.50794***	−1.789084***	−1.056066***	−5.752623**
OTHERREL	−16.01223***	−1.487643***	−4.558171***	−4.147047***
ENGLISH	−5.563237**	−1.603956	−3.409978**	−.8733491
FRENCH	−10.07459***	−4.668477**	−6.061749***	−2.754048**
GERMAN	−10.26538**	−4.560652**	−6.022929**	−2.607316***
Observations	63	63	63	63
Pseudo *R*-squared	0.6118	0.5789	0.6080	0.5811
Prob > chi-squared	0.0000	0.0000	0.0000	0.0000

Note: ***, **, *Significance at the 1 percent, 5 percent and 10 percent levels, respectively.

Source: Authors' calculations.

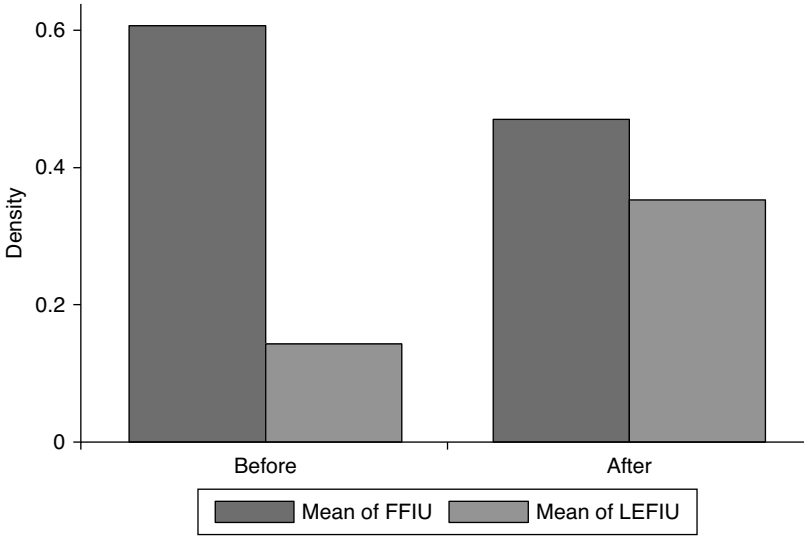

Figure 2.8 FIUs and September 11
Source: Masciandaro and Volpicella (2014).

The impact of *ESTABLISHMENT* is very interesting. According to the political economy framework used in Section 2.6.2, it could signal a change in the policymakers' preferences. It seems that in recent years the aversion to the financial model has increased, leading the policymakers to adopt other models.

Most important, the regression shows that, after the terrorist attack of 2001 in the US, the relative adoption of a financial framework collapses (column 2/Figure 2.8), while the law enforcement model (LEFIU) rises (Figure 2.8).

Such a change is statistically significant and possibly driven by the need to strengthen the anti-terrorism regulation, as many official documents of national FIUs formally state. Given that the law enforcement model offers more skills than financial framework, in terms of policing and investigation powers, one possible explanation is that, after the terrorist attack, the policymakers felt that the law enforcement model was better adapted to fighting terrorism.

Note that we include the dummy variable *SEPTEMBERELEVEN* (column 2), which takes the value 1 if the FIU model is changed after 2001, and 0 otherwise. Its effect is significant and negative, meaning that after 2001 the likelihood of an FFIU being set up collapses. Given the

specification of equation (2.17), if we consider *LEFIU* as the dependent variable, the impact of dummy *SEPTEMBERELEVEN* on it is positive (4.666518) and significant at 5 percent.

This means that the likelihood of that FIU model being adopted increases after 2001. To put it in another way, policymakers tend to abandon the financial framework and rely on the law enforcement model, which implies higher investigation and policing skills. September 11 was a key event in modeling national FIUs.

It is worth noting that the results above are derived from a cross-sectional approach; most of countries in the sample adopted a formal FIU for the first time, meaning that it is not possible to run a time-series analysis or use a dynamic approach.

In order to verify the results, some robustness checks have been implemented. First, columns (3) and (4) show that results are consistent with a probit model. Second, if the variable *CBFA* is disaggregated into its three components – that is, *CBBA*, *CBSA*, *CBIA* – results would remain unchanged.

Third, it is necessary to verify if September 11 is really a key event. For each year,[82] a dummy variable has been introduced, which takes the value of 1 if the current model of FIU has been established in or after that year, and 0 otherwise. These variables have been applied to equation (2.17) for each year: none of them is significant, meaning that September 11 has an impact and is not driven by other events.

The tests have also been performed to control for the other models of FIU – that is, non-financial administrative, judicial and hybrid – and find that they are not affected by September 11.

Fourth, a set of other control variables[83] have been used as covariates. Alternative proxies of economic outlook instead of the variables used above – such as level of GDP (*GDP*), foreign direct investments (*FDI*), exports (*EXP*) – do not change the results. Membership of the European Union (*EU*) and alternative proxies for quality of government (*CORRIND*, *JUDEF*, *NEWGG*) instead of *LAWEFF* do not impact on the results. Furthermore, considering the shadow economy (*SHADOW*) as

[82] In the sample, Australia FIU is the oldest (1988) and that of Macedonia is the most recent (2013).

[83] In order to avoid perfect multi-collinearity, we cannot estimate the effect of many control variables at the same time.

a proxy of financial crimes does not increase the explanation of the dependent variable.

From the empirical results some conclusions can be drawn. In recent years, the design of supervision to combat money laundering has been influenced by an interesting phenomenon: to ensure economic and financial integrity, FIUs have been instituted in several countries in order to make the national and international fight against organized crime and terrorism more effective.

In other words, an authority with clear responsibilities for detecting money laundering activities is developing. The distribution of FIU models shows that the FFIU is the model adopted most often, but almost half of countries in the sample use a different framework. To put it in another way, there are broad differences across the countries. The evidence above contrasts slightly with the traditional economics of AML supervision, which considers the FFIU as the best option.

In order to solve the puzzle, we used a political economy framework, in which any situation that influences the policymaker's gains and costs in designing the regime can produce incentives to adopt – or not adopt – the FFIU model. Our framework shows the role of the policymaker's preferences in explaining the FIU design.

By using an econometric approach, we tested our approach and discovered that the year of establishment plays a key role in affecting the likelihood of having an FFIU: if the establishment is recent, there is less probability that an FFIU will be set up.

It seems that, in recent years, preferences in favor of the FFIU have become weaker, which has lead politicians to adopt other models. We also find that, after the terrorist attack of 2001 in the US, the adoption of a financial framework is less likely, while that of the law enforcement model goes up. Such a change is statistically significant and is likely to be driven by the need to strengthen anti-terrorism regulation.

Given that the law enforcement model offers more skills than the FFIU framework, in terms of policing and investigation powers, one possible explanation consistent with our framework is that, after the terrorist attack, some policymakers felt that the benefits ofn choosing the FFIU were lower than the advantages of establishing the LEFIU model. At the same time, we cannot exclude a priori another explanation, which could exist alongside the former: some politicians took the events of September 11 as a reason to choose an FIU model with fewer net risks, in terms of having financial capture and/or an over-powerful financial bureaucracy.

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3
Banking Secrecy and International Financial Markets

3.1 Introduction

In Chapter 2 we analyzed the economics and politics of banking secrecy, given a situation in which the policymaker decides to be compliant (i.e. the policymaker aims to prevent and combat banking secrecy). Now we can discuss the macroeconomic effects if the policymaker faces the risks of being noncompliant. The noncompliant attitude can produce effects on the capital flows if we assume the existence of international sanctions against banking secrecy.

Chapter 3 is organized as follows. Section 3.2 introduces the Lucas paradox, which highlights the lack of capital flows from rich countries to poor countries, a phenomenon that mainstream economics cannot explain. Section 3.3 shows that the paradox can be explained by zooming in on the role of institutional quality. The channels through which institutional quality affects the capital flows are empirically investigated in Section 3.4.

Section 3.5 goes beyond the traditional explanation of the Lucas paradox: it concentrates on international regulation to combat banking secrecy, with regard to its effect on the global capital markets. The chapter investigates the conditions under which the so-called stigma paradox holds: that is, a peculiar case of regulatory arbitrage that causes a "race to the bottom" strategy to be implemented by international banks. If the international regulation is designed in the wrong way, the international banks can be attracted to banking secrecy enclaves.

Section 3.6 concludes Chapter 3. It explores the new frontiers of combating banking secrecy by analyzing recent examples of beggar-thy-neighbor regulation carried out through extra-territorial procedures. The extra-territorial approach is developing as a way of preventing and

highlighting different crimes, from money laundering to tax evasion. Different countries – the US, UK and Germany – are implementing it by threatening fines, sanctions, investigations and suits against non-cooperative foreign banks, which will hit their home countries.

3.2 Capital flows and national regulation: the Lucas paradox

The Lucas paradox is a concept which was introduced by Robert E. Lucas in his seminal paper in 1990. Lucas pointed out that, according to neoclassical theory, there should be a strong capital flow from rich countries to poor countries. But in reality we do not observe this flow. Lucas discusses possible explanations of this phenomenon: differences in levels of human capital in poor and rich countries; the same levels of technology in different countries; and different institutions in rich and poor countries. Lucas rejects the first two hypotheses; he shows that models with these assumptions still produce intensive capital flows from rich to poor countries. As for the last explanation (i.e. institutional development) Lucas shows that the lack of regulation and transparency of international borrowing can explain the weak capital flow from rich countries to poor countries. The Lucas paradox is explained in more detail in Section 3.3.

This seminal work by Lucas has created a new stream of literature – both theoretical and empirical – which investigates the so-called Lucas paradox. In the literature, authors provide tests for alternative explanations of the paradox.

Papers can be divided into two main streams: the one supporting the idea that differences in levels of institutions explain weak capital flow from rich countries to poor countries, and another stream that disagrees with this statement. The second view attempts to show that empirical results, if used as proof that institutions matter – are just the result of misidentification or misspecification. Authors from that stream of literature assert that different levels of institutional development can explain why rich countries do not invest in poor countries as much as they could. The few papers that investigate the effect of institutions on capital flows between countries are discussed further in Section 3.4.

There is a particular assumption that authors make in the literature, which is that the rent which investors from rich countries are seeking is observable and corresponds to the return of financial markets. But there are aspects that this definition does not take into account. For

example, tax evasion is one of the reasons why citizens of rich countries to transfer their funds to developing countries.

The same motive can be pursued in the general case of laundering through banks. As we have already discussed in previous sections of this book, the definition of laundering via banks has changed through time. Laundering through banks is defined as the process whereby the proceeds of crime are transformed into ostensibly legitimate money, or other assets, using the banking industry. The phenomenon of laundering via banks includes different misuses of the financial system, such as financing terrorism, tax evasion (as already mentioned), and the breaking of international embargoes. For dirty capital flows, the underdevelopment of institutions (financial and/or regulatory) has an effect. But this effect cannot be univocal. On the one hand, underdevelopment of financial institutions, definition and enforcement of property rights, weak political settings might decrease the attractiveness of the country for investors. The reason for that is the risk of loss of investment is too high. But on the other hand, less transparent economies can attract investors looking for opaque regimes, which takes us back to the example of tax evasion.

The problem of laundering through banks has become even more serious since the financial crisis. Governments started searching for additional sources of funds. Thus, the retrieval "dirty" capital flows became one of the main goals of government policies all over the world during the crisis period. The way to manipulate the amount of laundering via banks is to establish specific international regulation. But, as mentioned above, in theory the effect of institutions on the capital flow from illegal activities is not univocal. So a new stream of literature emerged. Authors investigated the effect of regulation on "dirty" capital flows: we discuss several examples of such research papers in Section 3.5. The bottom line is that regulation and institutional policies have no significant effect on capital flows. So even if we take into account "dirty" capital flows, we still cannot see the effect that institutions have on them.

3.3 Explaining the Lucas paradox

As we have already pointed out, the Lucas paradox as a concept was introduced by Robert Lucas in 1990. In this paper, Lucas addressed the question of why capital does not flow from rich to poor countries. One of the central ideas of post-war development policies is to stimulate transfers of capital goods from rich to poor countries; low levels of

capital flow from rich to poor countries means that those policies are inefficient.

In his paper, Robert Lucas discusses a simple theoretical model of interaction between rich and poor countries. Lucas shows that theoretical models generate strong capital flow from rich countries to poor countries, while in reality it does not happen. By weakening the assumptions of the model, Lucas shows that the differences in the levels of human capital or technology cannot explain such a low level of investment.

Lucas considers a simple economy with two countries that produce the same commodity with the same production function, and relates output to homogeneous capital and labor inputs, and having constant returns of scale. Lucas states that if in this framework production per worker differs between countries, it must be because countries have different levels of capital per worker. In this case, the law of diminishing returns implies that the marginal product of capital is higher in the less productive economy. Assuming free and competitive trade, new investment will occur in the poorer economy and will continue to exist up to the point that capital–labor ratios are equalized.

The first example that Lucas describes in his paper is an example with Cobb–Douglas-type constant returns technology in both countries:

$$y = Ax^{\beta} \tag{3.1}$$

where y is income per worker and x is the capital per worker. Then the marginal product of capital r is

$$r = \beta A^{1/\beta} y^{(\beta-1)/\beta} \tag{3.2}$$

Using results from the work of Summers and Heston (1988), Lucas tests the model described above for the US and India. An average β for the US and India is assumed to be equal to 0.4. According to Summers and Heston the production per person y in the US is about 15 times what it is in India.

Then the Formula (3.2) implies that the marginal product of capital in India must be about $(15)^{1.5} = 58$ times the marginal product of the US. Thus, if world capital markets are free and complete, investment goods would flow rapidly from the US and other wealthy countries to India and other poor countries. And one would expect no investment to occur in the wealthy countries.

Taking into account that the simplified assumptions behind the model described above – such as the same effective labor input per person in both countries, or the fact that the level of technology is the same for

both countries – might be a reason for the existence of the inadequacy of capital flows, Lucas discusses modified versions of the model.

First, Lucas proposes the model with different human capital per worker in two countries. Using the results from Anne Krueger's study that each American worker was estimated to be five times more productive than an Indian worker, Lucas shows that the marginal product of effective capital in India is five times the marginal product of capital in the US. It is less than 58 for the model with the same level of human capital in both countries, but it still leaves the original paradox intact. With five times difference in the rate of return, one would still expect capital flows from rich countries to poor countries to be much larger than anything that is observed.

The second assumption that might be a reason for the mismatch between the intensity of capital flows between rich countries and poor countries, in theory and in reality, is the same level of technology in both countries. Robert Lucas proposes a modified version of the model described before. Lucas assumes that an economy's technology level is the average level of its workers' human capital raised to a power. In that case the production function takes the form:

$$y = Ax^{\beta}A^{\gamma} \tag{3.3}$$

Where h^{γ}can be interpreted as an external effect which multiplies the productivity of a worker at any skill level. The rate of return of capital becomes:

$$r = \beta A^{1/\beta}\gamma^{(\beta-1)/\beta}h^{\gamma/\beta} \tag{3.4}$$

The estimation of γ for the US, as reported in Lucas (1988), is equal to 0.36. Using the result in (3.4), Lucas finds that the predicted rate of return ratio between India and the US becomes $(3)^{1.5}\ 5^{-1} = 1.04$.

It seems that the puzzle is resolved. But Lucas highlights that this result is based on the assumption that knowledge spillovers across national borders are assumed to be 0. Without this assumption, the question of why the capital flow from rich countries to poor countries is so weak still exists.

Models described before take into account capital flows in static terms. Robert Lucas highlights the fact that the existence of capital flows is eventually taken for granted in that case. It is presumed that there are borrowing contracts between the rich and the poor countries: the poor country acquires capital from the rich now, in return for promised goods flows in the opposite direction later on. To enforce the transaction there

must be an effective mechanism of regulation and control of international borrowing agreements. Otherwise, the poor country will gain by terminating its relationship with the rich country just before the repayment period and the rich country, foreseeing this, will never lend in the first place.

This imperfection is often summarized by the term "political risk." Lucas discusses the period before 1945 when capital risk was limited by colonial powers. Lucas uses the monopoly model to describe the phase of colonialism and capital flows at that time. Lucas considers the imperialist to be a monopolist, who has exclusive control over trade to and from a colony. The labor market in the colony is free and the colony has no capital of its own, and no ability to accumulate any. In that case the capital per worker x in the colony can be chosen by the imperialist, and the entire income repatriated.

The monopolist's problem is to choose x so as to maximize:

$$f(x) - [f(x) - xf'(x)] - rx \tag{3.5}$$

where $f(x)$ is the production function in the colony, $[f(x) - xf'(x)]$ are the wage payments at a competitively determined wage, and rx is the opportunity cost of capital. From the first-order condition for this problem we get:

$$f'(x) = r - xf'(x) \tag{3.6}$$

so that the marginal product of capital in the colony is equal to the world rate of return r plus the derivative of the colony's real wage rate with respect to capital per worker.

Using Cobb–Douglas technology and $\beta = 0.4$, Lucas shows that the return on capital in the colony should be about 2.5 times the European return.

Thus, Lucas concludes that enforcement of the regulation and control of international borrowing can resolve the problem of low capital flows from the rich countries to the poor countries.

3.4 Testing the Lucas paradox

3.4.1 Which drivers matter?

The fact that capital does not flow from rich to poor countries, known as the Lucas paradox, is likely to be strongly related to the failure of financial globalization to achieve its promised benefits. There exists a

strand of literature devoted to the Lucas paradox investigation. In 2008, Alfaro et al. (Alfaro, Kalemli-Ozcan, and Volosovych, hereafter: AKV) seemed to provide a definitive answer to the Lucas question. In a cross-country regression of the long-run average capital inflows per capita on the log of initial income per capita, AKV looked for the variable which makes the coefficient on the log of initial income per capita statistically insignificant.

AKV examined the empirical role of different explanations for the lack of capital flows from rich to poor countries. Using the data for the period 1970–2000, AKV tested the relationship between the level of the capital inflows (measured by long-run average inflows per capital) and the level of the country's wealth (proxied by the log of initial income per capita). The theoretical explanations that are tested in the paper by AKV, can be grouped into two categories. The first group includes differences in fundamentals that affect the production structure of the economy, such as technological differences, missing factors of production, government policies, and the institutional structure. The second group of explanations focuses on international capital market imperfections, such as sovereign risk and asymmetric information.

As the main framework AKV use the same small open economy as Lucas (1990): the output is produced using capital K and labor L via the Cobb–Douglas production function:

$$Y_t = A_t F(K_t, L_t) = A_t K_t^{\alpha} L_t^{1-\alpha} \qquad \begin{array}{l} F_K(.) > 0,\ F_L(.) > 0 \\ F_{KK}(.) < 0,\ F_{LL}(.) < 0 \end{array}$$

where Y denotes output and A denotes the total factor productivity (TFP).

As a result in economies where countries share a common technology and there is perfect capital mobility the returns instantaneously converge to capital (i.e. for countries i and j):

$$A_t f'(k_{it}) = r_t\, A_t f'(k_{jt}) \tag{3.7}$$

where $f(.)$ is the net of depreciation production function in per capita terms.

AKV state that the neoclassical model with constant TFP has counterfactual implications for rates of return, since not enough capital seems to flow to capital-scarce countries and implied interest rates do not seem to converge. The modifications of the model are necessary for it to satisfy condition (3.7).

There are two groups of explanations/assumptions which, introduced to the model, might explain the Lucas paradox. The first group is assumptions about fundamentals of the economy. AKV propose three different explanations based on fundamentals for the lack of capital flows from rich to poor countries. One of the explanations is *missing factors of production*. The existence of factors other than capital and labor – such as human capital and land – might affect the capital flows between countries. In that case the production function is given by:

$$Y_t = A_t F(K_t, Z_t, L_t) = A_t K_t^{\alpha} Z^{\beta} L_t^{1-\alpha-\beta} \tag{3.8}$$

Where Z_t denotes another factor that affects the production process. The true return for countries *i* and *j* for that case is:

$$A_t f'(k_{it}, Z_{it}) = r_t \, A_t f'(k_{jt}, Z_{it}) \tag{3.9}$$

Another factor that can affect the flows is that of *government policies*, for example tax policies. If we assume that tax policies in countries *i* and *j* are different, the true return can be determined using the following condition:

$$A_t f'(k_{it}, Z_{it})(1 - \tau_{ij}) = r_t = A_t f'(k_{jt}, Z_{jt}) \, (1 - \tau_{jt}) \tag{3.10}$$

The third factor from the fundamentals group is the *institutional structure and the total factor productivity*. AKV highlight the role of institutions in the following way:

> Institutions ... affect economic performance through their effect on investment decisions by protecting the property rights of entrepreneurs against the government and other segments of society and preventing elites from blocking the adoption of new technologies. (Alfaro et al. 2008)

The model investigated by AKV uses the parameter A_t, which not only captures differences in the overall efficiency of production between the countries, but also reflects differences in the countries' institutions. The same parameter is understood to show the technological level in both countries. The authors AKV interpret the difference between A_t in country *i* and country *j* as a situation in which the same technology is available to both countries, but there are barriers to the adoption of the existing technologies, or there are difficulties in the efficient use of the

same technology. Those barriers or difficulties might appear because of the different levels of institutions in countries *i* and *j*. In that case, the true return for countries *i* and *j* is given by:

$$A_{it} f'(k_{it}) = r_t A_{jt} f'(k_{jt}) \tag{3.11}$$

AKV call another group of factors *international capital market imperfections*; these factors can explain the lack of capital flows from rich to poor countries and include asymmetric information and sovereign risk. Asymmetric information between countries can result in the problem of adverse selection and moral hazard, as well as costly state verification.

For example, consider the fact that the neoclassical model described in the beginning of this part does not consider sovereign risk. AKV define sovereign risk as any situation where the sovereign entity defaults on loan contracts with foreigners, seizes foreign assets located within its borders, or prevents domestic residents from fully meeting obligations to foreign contracts. Since the ability of courts to force sovereign entities to comply with regulations and pay the debt back is extremely limited, rich countries might not have enough incentives to invest in poor countries. So the existence of the sovereign risk can be used as an explanation for the lack of the capital flows from rich countries to poor countries.

For empirical testing, AKV use data from different sources. The authors test the hypothesis using three proxies for the international capital inflows. The first measure of the international capital inflows is obtained from the International Financial Statistics (IFS) issued by the IMF. The IFS provides data on foreign direct investment (FDI), portfolio equity investment, and debt inflows. AKV only use data on FDI and portfolio equity investment. Debt flows are excluded from the main part of the analysis because they tend to be shaped by government decisions to a greater extent than flows of equity and it is difficult to abstract private flows from the public part of debt flows. Two further measures that AKV use as proxies for the international capital inflows are obtained from the work of Kraay et al. (2005) (Kraay, Loayza, Serven, and Ventura, hereafter: KLSV) and Lane and Milesi-Ferretti (2001) (hereafter: LM).

LM and KLSV derived their measures from the IMF data. In their work, LM and KLSV adjust IMF data on valuation effects – such as capital gains and losses, defaults, price and exchange rate fluctuations – thus providing better proxies for countries' external positions. LM estimate stocks of portfolio equity and foreign direct investment based on the IMF/IFS flow data. In order to estimate FDI stocks, the authors cumulate flows and adjust for the effects of exchange rate changes. For portfolio

equity stocks, they adjust for changes in the end of year US dollar value of the domestic stock market.

KLSV argue against the valuation of stocks using stock market prices; they maintain that capital listed on the stock market and the corresponding share prices – especially in the case of developing countries – are not representative of the stock of a country's capital. Instead, they use the price of investment goods in local currency, which is the investment deflator. Since AKV support the point of view of KLSV, the KLSV dataset is the main data set used in the paper by AKV. The IMF data set contains data of 81 countries during the period 1970–2000. The KLSV data represents 58 countries between 1970 and 1997. And the LM data set provides data on 56 countries between 1970 and 1998.

To empirically test the effects of different factors on international capital flows from rich countries to poor countries, AKV use cross-country OLS regressions. An alternative method would be the panel data regression, but since explanatory variables introduced by the authors are slowly changing over time, AKV choose the OLS regression. The dependent variable is represented by the long-run average capital inflows per capita.

Authors use the log of GDP per capita in 1970 on the right-hand side of the regression to detect the presence of the Lucas paradox. If the coefficient for the 1970 log of GDP is positive, the paradox exists. To test the hypothesis for explaining the existence of the paradox, AKV introduce different explanatory variables on the right-hand side of the regression. The ones that make the coefficient of the log of GDP per capita in 1970 insignificant provide an explanation for the paradox. The positive coefficient of the logarithm of GDP per capita (proxy for the level of the country) means that there is a positive capital flow from rich countries (high log of GDP per capita) to poor countries.

If an additional explanatory variable – for example, a proxy for institutional level – makes the coefficient of the logarithm of GDP per capita insignificant, it means that the wealth level of the country does not affect the level of capital outflows. Thus the Lucas paradox can be explained by those variables which diminishe the wealth effect to a level insignificantly different from 0.

As mentioned earlier, AKV investigated two groups of factors that could be a reason for the Lucas paradox. The first group is fundamentals. As a proxy for the level of the human capital AKV use the logarithm of the average years of total schooling. In the sample used in the paper the most educated country has 11 years of schooling as opposed to 0 in the least educated country. So this variable is characterized by a high level of variety.

The existence of the government's explicit restrictions to the free capital market can explain the lack of capital flows from rich countries to poor countries. AKV use an average of four indices constructed by IMF as a proxy for restrictions to capital mobility. The indices used are the following: exchange arrangements, payments restrictions on current transactions and on capital transactions, and repatriation requirements for export proceeds, where each dummy takes a value of 1 if there is the restriction. The value of this variable varies from 0 to 1 in the sample.

In their paper, AKV are mainly interested in institutional quality. Lucas (1990) suggests that this factor is the most prominent candidate for an explanation of the low level of capital flows from rich countries to poor countries.

AKV find that establishing the measurements of institutional quality is a challenging task. They construct a yearly composite index using the International Country Risk Guide's (ICRG) variables from the PRS Group. The composite index is the sum of the indices of the investment profile, government stability, internal conflict, external conflict, non-corruption, non-militarized politics, protection from religious tensions, law and order, protection from ethnic tensions, democratic accountability, and bureaucratic quality. This index takes values from 0 to 10 for each country, where a higher score means lower risk. There is a large variation in this variable too. There are countries from the 75th percentile – with high institutional quality – such as the UK and Denmark, and countries with low level of institutional quality (25th percentile), such as Turkey and Mexico.

Another group of factors which can potentially explain the existence of the Lucas paradox is international capital market imperfections. AKV construct their own measure of international capital market imperfections based on the concept of distance, that has been already used in literature (among others: Coval and Moskowitz 1999, 2001, Portes and Rey 2005, Wei and Wu 2002).

The variable constructed by AKV is called "distantness" and is equal to the weighted average of the distances from the capital city of the particular country to the capital cities of the other countries, using the GDP shares of the other countries as weights (Kalemli-Ozcan et al. 2003). In the regression analysis AKV use the log of average "distantness" as an explanatory variable on the right-hand side. The main regression is represented in the following equation:

$$F_i = \mu + \alpha(\log Y_i) + \beta(I_i) + \gamma(X_i) + \varepsilon_i \tag{3.12}$$

Table 3.1 AKV results, OLS regressions of capital inflows per capita I-IMF flows data

	Whole world (1)	Whole world (2)	Base sample (3)	Base sample (4)	Base sample (5)
Log GDP per capita (PPP) in 1970	1.05*** (0.17)	0.20 (0.13)	1.18*** (0.19)	0.14 (0.20)	–
Average institutional quality, 1984–2000	–	0.68*** (0.14)	–	0.75*** (0.16)	0.82*** (0.12)
R^2	0.37	0.52	0.39	0.52	0.52
Countries	98	98	81	81	81

Note: ***indicates statistical significance at 1 percent.

where F is the average inflows of direct and portfolio equity investment per capita (inflows of capital per capita), μ is a constant, Y is log of GDP per capita in 1970, I is average institutional quality, X are other variables from the first and the second groups of factors, and ε is a random error term. The coefficients of interest are both α and β – that is, the effect of log GDP per capita and institutional quality on inflows of direct and portfolio equity investment per capita respectively. AKV's results are described in Table 3.1.

In the table, the "whole world" sample includes 98 countries with data available for inflows of capital, GDP per capita, and institutional quality, excluding outliers and countries with populations of less than a million. The core sample is composed of 81 countries for which all the main explanatory variables are available.

As we can see from the results, the only explanation variable which makes the logarithm of GDP per capita insignificant is the average institutional quality for the "whole world" sample and for the "base" sample.

In particular, the cross-country OLS regressions show that the Lucas paradox exists in both country samples: the coefficient of the log of GDP per capita is positively significant in regressions (3.1)–(3.6). The restrictions to capital mobility significantly and negatively affect the level of capital flows: explicit government restrictions on the capital market decrease the capital flows on average. The empirical tests conducted by AKV also show that the level of human capital in the country, proxied by the years of schooling, does not affect the capital flows. Also the international capital market imperfections seem not to affect the capital outflow of the country.

The main hypothesis of the paper cannot be rejected: the difference in institutional quality can be an explanation for the Lucas paradox. Institutional quality increases capital flows on average, but, at the same time, it makes the initial wealth effect insignificant. Thus, the difference in institutional quality can explain why the capital doesn't flow from rich countries to poor countries.

3.4.2 Institutional quality: one more step

In their work, AKV show that institutional quality can explain the Lucas paradox (i.e. the lack of the capital flows from rich countries to poor countries). But this conclusion has created more questions. For our purposes, the crucial question is how – or through which channels – institutional quality affects international capital flows: in other words, which institutional drivers can explain the Lucas paradox?

In order to conduct our investigation, it is useful to follow the reasoning proposed in the work by Elias Papaioannou (2009). In this study, Papaioannou uses a large panel of financial flow data from banks and different econometric techniques to assess how institutions affect international lending. The author shows that underdeveloped institutional settings can explain a significant part of the Lucas paradox through different channels.

The main model that is tested in the study is represented by the following equation:

$$\log(F_j) = X_j\beta + \gamma(IQL_j) + \varepsilon_j \tag{3.13}$$

where the dependent variable $\log(F_j)$is the logarithm of foreign net bank flows in country j, vector X includes control variables – such as income and population, which are mainly related to the size of the economy – and IQL_j represents an aggregate measure of institutional quality in country j.

The study discusses and addresses two problems associated with estimation of the effect of institutional quality on the capital inflows. The first problem is the omitted variables problem. Both institutional quality and capital inflows can be affected by many factors, for example, social capital, religious norms, trust, geography and initial endowment. The omitted variables problem is also magnified by the unobserved countries heterogeneity. To address this problem different versions of the gravity model have been estimated by using two large panel data sets of bilateral and aggregate bank flows. Gravity models are often used in social science. The traditional gravity model drew on analogy with

Newton's law of gravitation. A mass of goods or labor, or other factors of production, supplied at origin *i* – *Yi* – is attracted to a mass of demand for goods or labor at destination *j* – *Ej* – but the potential flow is reduced by the distance between them – *dij*. Strictly applying the analogy, we have that:

$$X_{ij} = \frac{Y_i E_j}{d_{ij}^2} \tag{3.14}$$

gives the predicted movement of goods or labor between *i* and *j*: that is, X_{ij} (Anderson, 2010).

In Papaioannou's work, the supplied good is the capital outflow from country *i*, the demanded good is represented by the capital inflow to the country *j*, and the distance is measure by the geographical distance between countries and other factors that might affect the capital flow between countries. The corresponding gravity model can be represented by the following equation:

$$\log(F_{ijt}) = X'_{jt}\beta_j + X'_{it}B_i + \delta_1(DIST_{ij}) + \delta_2\, TIE_{ij} + \gamma INST_{jt-1} + \phi_i + \phi_j + \alpha_t + [\alpha_{it} + \alpha_{jt}] + \varepsilon_{ijt}$$

where *i* and *j* indicate the "source" and "recipient" country respectively and *t* denotes time. The dependent variable is the natural logarithm of capital inflows from banks located in country *i* to all sectors of the economy in country *j*, in quarter *t*. The focus of the empirical analysis is on the time-varying institutional quality–political risk index in the recipient country INST. The specification controls for the standard gravity controls. Economic size is proxied by real per capita GDP, population and land area. Information frictions and transaction costs are captured with distance DIST, and a dummy variable TIE that takes on the value 1 when the source country and the recipient country have common colonial ties, or speak the same language; ϕ_i and ϕ_j are fixed effects that account for time-invariant country characteristics in the source country and recipient country, respectively. The specifications include either a general time fixed effect α_t or a source-country time-specific fixed effect $[\alpha_{it}]$. In many specifications, a vector of country pair fixed-effects $[\alpha_{jt}]$ has been included, as this fully accounts for unobserved heterogeneity in bank lending between the source and recipient countries.

The second problem associated with estimation of the effect of institutional quality on capital inflow is that of reverse causation. It is not only the institutional quality that can affect the capital inflows: the reverse

link is also possible. To resolve the endogeneity problem, instrumental variables techniques have been used.

To estimate the first model, quarterly data for 19 "source" countries and 50 "recipient" countries has been used for the period from 1984 to 2002. For the estimation of the second model the author uses annual aggregated data for the same period.

The bank flow measure is obtained from the data provided by the Bank of International Settlements (BIS). In the local banking statistics section, BIS reports aggregate asset holdings of banks located in up to 40 jurisdictions ("the reporting area"), in more than 150 countries ("the vis-à-vis countries"), taken on a quarterly basis since 1977. The data were originally collected by domestic monetary authorities and cover the international exposure of all (99 percent or 100 percent) domestic banking institutions. Data includes the banks' on-balance sheet exposure, such as cross-border loans, debt investment, and so on. The dataset mainly includes standard inter-bank lending activities, such as deposits, loans, bank-to-bank credit lines and trade-related credit.

As a proxy for institutional quality, a composite indicator constructed by political risk services (PRS) is applied, namely the International Country Risk Guide (ICRG) "political risk" rating. In contrast to most institutional measures that are purely cross-sectional or exhibit limited time-variability, the political risk rating (INST) exhibits substantial "within" country variation. This feature of the index enables the key policy question to be addressed: is controlling for time-invariant characteristics an institutional improvement associated with an increased volume of international capital movements? The ICRG index has been reported on a monthly basis since 1984. INST is a composite index of political, legal, and bureaucratic institutions. The index also reflects ethnic tensions and corruption. It ranges from 0 to 100, and lower values suggest poorly performing institutions.

Other measures are obtained from different sources: distance, ethno linguistic ties, and land area are retrieved from Andrew Rose's website (Glick and Rose 2002); GDP and population are taken from the IMF's International Financial Statistics (quarterly) and the World Bank's World Development Indicators Database (annual panel and the cross-sectional models); macroeconomic and financial sector developments are proxied by ICRG's "economic" and "financial" risk measures; the average years of schooling variable is obtained from Barro and Lee (2001); life expectancy is measure by variable from the World Bank's World Development Indicators Database (WB WDI).

Estimation results of the gravity model (1) are described in Table 3.2.

Table 3.2 The gravity model

	(1)	(2)	(3)	(4)	(5)	(6)
$\ln Y_{i,t}$	–0.1620	–0.2925	–	–0.0912	–	–
Log income "source"	(0.1535)	(0.1490)	–	(0.2606)	–	–
$\ln Y_{j,t}$	0.2795**	0.0711	0.0732	0.4434	0.4524*	0.4625*
Log income "recipient"	(0.0832)	(0.0837)	(0.0879)	(0.1835)	(0.1826)	(0.1778)
$\ln POP_{i,t}$	0.7381***	0.7789***	–	12.8198	–	–
Log population "source"	(0.1241)	(0.1233)	–	(3.4852)	–	–
$\ln POP_{j,t}$	0.4569**	0.7336***	0.7275***	–0.582	0.0576	–0.1334
Log population "recipient"	(0.1369)	(0.1278)	(0.1276)	(4.0539)	(4.1233)	(4.1807)
$\ln AREA_{i,t}$	–0.2117**	–0.2473**	–	–	–	–
Log land area "source"	(0.0765)	(0.0795)	–	–	–	–
$\ln AREA_{j,t}$	0.568	0.0027	–0.0020	–	–	–
Log land area "recipient"	(0.1224)	(0.1184)	(0.1176)	–	–	–
$TIE_{j,j}$	0.2475	0.3345	0.2212	0.3155	0.3121	–
Ethnolinguistic ties	(0.3893)	(0.3740)	(0.3951)	(0.3826)	(0.3822)	–
$\ln DIST_{i,j}$	–1.1337***	–0.8305***	–0.8187***	–0.9423***	–0.9638***	–
Log distance	(0.1447)	(0.1605)	(0.1601)	(0.2181)	(0.2201)	–
$INST_{j,t-1}$	–	0.0826***	0.0842***	0.1963***	0.1924***	0.19191***
Lagged institutions-political risk	–	(0.0182)	(0.0182)	(0.0310)	(0.0319)	(0.0324)
Adjusted *R*-squared	0.014	0.016	0.045	0.023	0.049	0.048
Observations	38688	37731	39013	37871	39153	39153
Source countries	19	19	19	19	19	19
Recipient countries	49	49	49	49	50	50
Time fixed effects	Yes	Yes	No	Yes	No	No
Source country fixed effects	No	No	No	Yes	No	No
Recipient country fixed effects	No	No	No	Yes	Yes	No
Source country time fixed effects	No	No	Yes	No	Yes	Yes
Country-pair fixed effects	No	No	No	No	Yes	Yes

Note: ***indicates statistical significance at 1 percent; **indicates statistical significance at 5 percent.

Model (1) in the table reports estimates of a standard gravity model of bank flows. Model (1) shows that the level of GDP per capita of the recipient has a significant and positive effect on the level of capital inflow. In this way, the author shows that the Lucas paradox exists: capital seems to flow not from rich countries to poor countries, but vice versa: from poor to rich.

Model (2) reports estimates of a gravity model with an additional explanatory variable: the institutional quality of the country-recipient at time ($t - 1$). According to the results, the institutional quality has a significant and positive effect on the capital inflow. The estimate implies that a 10 point increase in institutional quality is associated with an 8.3 percent increase in bank inflows.

Model (3) adds a vector of source-country time-specific fixed effects to control for time-varying "push" factors. This is important, since previous work has shown that macroeconomic conditions in the industrial world are a major factor that drives capital flows in the developing world (e.g. Frankel and Roubini 2001). The coefficient on the political risk measure retains its significance and is virtually unaffected.

In column (4) controls for time-invariant characteristics that add source-country and recipient-country fixed effects have been introduced. Model (5), besides recipient-country fixed-effects, includes source-country time-specific fixed-effects. Model (6) isolates the within-country variation, accounting jointly for source-country time-specific fixed effects and country-pair fixed effects. As we can see from Table 3.2, the institutional quality variable coefficient is still significant and positive in all models from (2) to (6). That result proves the hypothesis about the institutional quality difference being one of the possible explanations of the Lucas paradox.

The fixed effect model solves the problem of time-invariant country characteristics which can affect both institutional quality and bank inflows (i.e. the omitted variables problem). But those models cannot guarantee the absence of a different bias – a bias caused by reversed causality. The study provides different examples of how the reverse relationship between bank flows and institutional quality can occur and why it can create a bias in estimates:

1. Foreign banks push countries (directly and via their governments) to implement reforms.
2. Risk agencies construct the various institutional proxies after observing foreign investment. Thus, they might assign a higher rating to a country that has received a lot of foreign capital, in order

to please their customers (banks and large institutional investors), or because they believe that political risk has declined.
3. Foreign banks might increase lending in anticipation of future institutional reforms.
4. Institutional quality is measured with noise (since it is impossible to summarize in a single variable all the dimensions of the institutional environment) and thus the estimates may be attenuated.

In the presence of reversed causality, fixed effect estimates will be biased. To solve the endogeneity problem alternative methods can be implemented. The first method is a "between" estimate. This method removes the time-series dimension by using mean values of the dependent and explanatory variables. Table 3.3 columns (1)–(6) reports "between estimates."

According to the results, the coefficient for the institutional quality variable is statistically significant and positive. It is higher compared with the estimate from the gravity model: more than 40 percent of the overall variation in international bank lending, with the institutions measure alone. The coefficient retains significance when the author controls for income and population (in column (2)), economic risk (in column (3)) and financial risk in column (4)).

This suggests that the significant institutions–bank inflows relationship is not capturing the overall stage of development. To control for the difference in human capital levels, average years of schooling has been included in the model. Results for this model's specification are described in column (5). The institutional quality coefficient remains significant and positive. In column (6) the results of an alternative model specification have been reported. This specification includes a life expectancy variable as a proxy for labor productivity, instead of years of schooling. The institutional quality variable still retains its statistical and economic significance and positive sign.

To sum up, both AKV and Papaioannou show that institutional quality can explain the Lucas paradox. They show that when institutional quality is added as a variable to the regression of capital inflows per capita on the logarithm of initial income per capita, it makes its coefficient insignificant. This fact can explain the paradox.

The explanation of AKV and Papaioannou was unquestionable until recent times. But in 2013, Azemar and Desbordes argued that AKV's findings do not provide a definitive answer to the Lucas paradox. They replicated the model of AKV on the same data and found that, after excluding outliers, the result of AKV is not robust: in the regression with

Table 3.3 "Between" estimates

	Using average values						Using initial (1984) values					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
$INST_{j,t-1}$	0.4211***	0.3216***	0.3066***	0.2798***	0.3351***	0.3258***	0.2775***	0.2222***	0.2202***	0.1717*	0.2175***	0.2138***
Lagged institutions	(0.0419)	(0.0716)	(0.0730)	(0.1030)	(0.0970)	(0.0751)	(0.0332)	(0.0552)	(0.0579)	(0.0923)	(0.0636)	(0.0556)
$\ln POP_{j,t}$	–	0.2571	0.2289	0.1870	0.7330	0.2746	–	1.1712**	1.1711**	1.1556**	1.1204**	1.1491**
Log population		(0.3740)	(0.3748)	(0.3950)	(0.4535)	(0.3897)	–	(0.5184)	(0.5218)	(0.5207)	(0.5390)	(0.5177)
$\ln Y_{j,t}$	–	1.4019**	0.9840	1.2218*	1.9766*	1.3987	–	1.2333	1.1956	1.0884	1.1745*	0.3055
Log income		(0.6098)	(0.7262)	(0.6894)	(1.0714)	(0.8486)	–	(0.7407)	(0.8059)	(0.7728)	(1.0422)	(1.0950)
$ECON\_RISK_{j,t-1}$	–	–	0.0876	–	–	–	–	–	0.0082	–	–	–
Lagged economic risk	–	–	(0.0828)	–	–	–	–	–	(0.0665)	–	–	–
$FIN\_RISK_{j,t-1}$	–	–	–	0.0586	–	–	–	–	–	0.0664	–	–
Lagged financial risk	–	–	–	(0.1035)	–	–	–	–	–	(0.0969)	–	–
$SCH_{j,t}$	–	–	–	–	–0.6342	–	–	–	–	–	–0.3459	–
Schooling	–	–	–	–	(0.5379)	–	–	–	–	–	(0.5544)	–
$LIFEXP_{j,t}$	–	–	–	–	–	–0.0050	–	–	–	–	–	0.1949
Life expectancy	–	–	–	–	–	(0.1009)	–	–	–	–	–	(0.1697)
"Between" R^2	0.423	0.467	0.472	0.468	0.492	0.467	0.457	0.505	0.505	0.508	0.506	0.514
Observations	2262	2101	2101	2101	1604	2092	1600	1505	1505	1505	1410	1505
Countries	140	131	131	131	91	130	85	80	80	80	75	80

Notes: ***indicates statistical significance at 1 percent; **indicates statistical significance at 5 percent. Model estimates represented in columns (5) and (6) suggest that the result for the institutional quality variable in previous specifications was not driven by differences in human capital. In columns (7)–(12) the author repeats the estimation using initial (1984) values of political risk and the other controls. Using predetermined values helps to assuage reverse causality. In all permutations the coefficient on political risk remains statistically significant, while income and the other controls all enter with insignificant coefficients.

variable institutional quality, the coefficient of the logarithm of initial income per capita is still significant. Their result shows that the question about the relationship between the level of institutions and capital inflows of the country still remains.

In the next pages of this section we will discuss how, in recent attempts to investigate the relationship between international capital flows and institutional quality, the banking secrecy issue has emerged.

3.5 Behind the Lucas paradox: banking secrecy, soft regulation and capital flows

In previous sections, we discussed the fact that in the most recent literature the effect of institutional quality on international capital flows is ambiguous. Alfar et al. (2008) – who we refer to as AKV – tried to show that differences in institutional quality can explain the absence of capital inflows to poor countries from rich countries. But, as argued by Azemar and Desbordes (2013), this result is not robust.

Let us summarize the bottom line. In his seminal paper, Lucas proposed the institutional quality as the most prominent candidate for explaining his paradox. The institutional level of the financial markets can be represented by national regulation and international regulation. In their paper, AKV concentrate on national regulation for each country. The institutional quality is proxied by the composite index. AKV constructed a yearly composite index using the International Country Risk Guide (ICRG). The composite index is the sum of the indices of investment profile, government stability, internal conflict, external conflict, non-corruption, non-militarized politics, protection from religious tensions, law and order, protection from ethnic tensions, democratic accountability, and bureaucratic quality. As well as AKV, Papaioannou (2009) produced a paper that used the political risk index in the recipient country as a proxy for institutional quality.

One thing that both AKV and Papaioannou do not take into account is international regulation, which affects the institutional quality of the country. International regulation is independent of the initial level wealth of the country – it can therefore affect international capital flows.

At this point, the relevance of the stigma effect – which we discussed in Chapter 1 – comes in. The stigma effect is a paradigmatic case of possible association between capital flows and international regulation. In fact, the literature pointed out that the stigma effect can occur when

the soft regulation promoted by international organizations to combat banking secrecy becomes effective: that is, it influences capital flows.

There are several reasons for international soft regulation to be built up. After the recent financial crisis, tax evasion became the dominant motivation.

To describe the relevance of the tax evasion rationale we will use a clear example from Johannesen and Zucman (2014). The authors describe relations that may occur between a French household and a Swiss bank, given a situation in which the former attempts to evade taxes. If a French household entrusts assets to a French bank, the bank is obliged to report capital income to the French tax authorities. Thus, it is impossible for the household to evade taxes. But if the same household entrusts assets to a Swiss bank, there is no automatic reporting. To get data on the household's account, French tax authorities have to prove the illegal intentions of the household. This means that the French authorities have to provide proof of tax evasion.

The OECD has assumed the most active position in the "war" against tax evasion. Starting from the end of the 1990s, the OECD started encouraging tax havens to exchange information with other countries. In the example above it would be Switzerland sharing information about the bank account of the French citizen.

But until 2008, most of the heavens declined to sign those treaties. During the financial crisis, the tax evasion problem received a lot of attention and, consequently, the OECD decided to estimate the efficiency of the treaties too. According to the report published on the October 26, 2011, "The era of bank secrecy is over." This statement can be taken to mean that tax treaties concerning information-sharing among tax havens and other countries were effective – but only up until 2011.

The report provides some arguments which support the assertion that by the end of 2011 there was almost no bank secrecy. The table from the report is presented below (Table 3.4, "Main outcomes and next steps" in the original report).

The results that are mentioned in Table 3.4 are the outcomes of the agreement between the G20 countries, which was made in April 2009. In this agreement, the G20 leaders declared that they would take action to end the era of bank secrecy. The main measure that has been used since is the information exchange treaty. A country that signs the treaty with another country is obliged to report on any asset transaction to its domestic bank that is made by a citizen from the other country involved in the treaty.

Table 3.4 Main outcomes and next steps of the G20/OECD measures

G20/OECD efforts are paying off	Further action needed
Almost EUR 14 billion in additional tax revenue have been secured in the past two years in 20 countries where data is available and there is far more to come. This will make a substantial contribution to fiscal consolidation without raising tax rates.	Billions of dollars of undeclared tax remain offshore
The fairness of the tax systems has improved. Most of the additional revenue has been secured from wealthy citizens attempting to evade taxes. At the time when many governments are having to ask their citizens to accept higher taxes and reduce services, it is important that everyone pays their fair share.	The Global forum on Transparency and Exchange of Information for Tax Purposes needs to ensure that all countries rapidly achieve comprehensive and effective exchange of information.
Banks are changing their attitudes toward facilitating offshore evasion. They are moving away from relying on bank secrecy to gain a competitive edge.	We need to remove the practical barriers to a more effective automatic exchange of information in the countries which already use this approach.
	The forum on Tax Administration, which brings together 43 countries, including G20 countries, needs to strengthen its efforts to improve tax compliance by the corporate sector and to tackle aggressive corporate tax strategies.
	A whole government approach to tax crimes and other illicit flows needs to be established. Tax administration and other law enforcement agencies need to come together to fight tax evasion and other illicit financial activities.

Currently (May 2014), 44 countries have joined the declaration. The country that agreed on terms of the treaty most recently was Switzerland. It was a significant event since Switzerland is considered one of the world's largest offshore financial centers. According to the *Financial Times* from May 6, 2014, Switzerland "has pledged automatically to hand the details of foreign bank accounts to other countries."

So, on the one hand, according to OECD report, soft regulation of tax evasion was and will be effective. But on the other hand, there is evidence that tax treaties had no effect on the amount of tax evasion taking place.

The recent work by Johannesen and Zucman (2014), hereafter JZ, discuss the effect of bilateral treaties – an agreement between two countries to disclose information about asset transactions – on the bank

deposits in tax havens. The authors use a data set of 52 tax havens and more than 220 potential partner countries for the period from 2004 until the second quarter of 2011.

The main data source that JZ use is the Exchange of Tax Information Portal, which represents the most accurate information on tax treaties gathered by OECD. Locational statistics from BIS are a source for information on bank deposits in 41 countries (tax havens). The BIS publishes quarterly data, which is aggregated at country level, on the total deposits held by each country's residents in foreign banks. The BIS also provides information on the amount of total foreign deposits held by foreign residents in one country's banks. JZ investigate the deposits and obtain the bilateral deposit data of 18 tax havens (Austria, Bahamas, Bahrain, Belgium, the Cayman Islands, Chile, Cyprus, Guernsey, Hong Kong, the Isle of Man, Jersey, Luxembourg, Macao, Malaysia, Netherlands Antilles, Panama, Singapore, and Switzerland).

JZ analyze the effect of the G20 initiative using graphical representations and regression-based tests. The graphical representations are used because of data limitations. The hypothesis used will be discussed in due course.

One of the potential effects of tax treaties is their impact on the amount of foreign deposits in tax havens. A decrease in foreign deposits would indicate that the G20 initiative is effective: that is, foreign residents are willing to disclose their income and pay taxes. However, JZ show that despite the significant amount of treaties signed in 2009–2010, deposits in tax havens remained stable. JZ compare the evolution of the deposits held in aggregate in the countries that are not tax havens (non-havens) and aggregate deposits held in those that are. Deposits in havens and non-havens followed a similar pattern between 2004 and 2011. The G20 initiative did not cause a significant decrease in foreign bank deposits in tax havens.

Then JZ compare trends of deposits covered by treaties and deposits that are not. It is worth noting that the amount of deposits affected by treaties decreased moderately. At the same time, the deposits that were not affected remained stable.

Nevertheless, the aggregated effect might be different from the effect of the G20 on an individual level (i.e. the effect on each tax haven separately). Therefore JZ shows that the effect of treaties on foreign deposits differs significantly among tax havens.

The effect of tax treaties on some tax havens is significantly negative. At the same time the introduction of treaties had a positive effect on the amount of foreign deposits in other countries. JZ suggest that

foreign residents have just transferred assets from tax havens with a large amount of treaties to countries with a low number of treaties; this would explain the actual – rather than the hoped-for – effect of treaties on deposits in different countries.

In the third part of the study, JZ move from the graphical evidence to regression-based evidence. They try to answer three questions:

(a) Do treaties have an impact on bilateral deposits? And if there is any effect, is it positive or negative?
(b) Is the hypothesis about the deposit shift from countries with many treaties to countries with fewer treaties possible?
(c) Is there any regularity in the way that countries are signing tax treaties? And if there is, what kind of strategies do tax havens use?

To answer the first question, JZ tested whether treaties have had a statistically significant impact on deposits in tax havens at the bilateral level. JS ran the following regression:

$$\log(Deposits_{ijq}) = \alpha + \beta Signed_{ijq} + \gamma_{ij} + \theta_q + \varepsilon_{ijq}$$

where $Deposits_{ijq}$ denotes the deposits held by residents of country i, with banks of haven j at the quarter q; $Signed_{ijq}$ is a dummy equal to 1 if a treaty allowing for information exchange between countries i and j exists in quarter q; γ_{ij} denotes a country-pair with fixed effects, and θ_q denotes time fixed effects.

According to the estimation, the coefficient β is negative and only borderline significant. We cannot make any definite conclusions based on this result. JZ also tested the model for a restricted sample of pairs – haven-non-haven – to exclude the effect of treaties signed by havens with each other. In that case, the coefficient is significant at a level of 5 percent, but economically the effect is insignificant.

The results prove the hypothesis of JZ that tax havens sign treaties with each other in order to increase their compliance with the G20's soft regulation, but without restricting tax evasion in reality. The results show that treaties affect deposits in tax havens: on average, the number of deposits in tax havens which have signed treaties has decreased by 11 percent.

The second question that is addressed in the work of JZ is whether there is a shift in deposits from tax havens that have signed treaties to tax havens that have not. To answer this question, JZ introduce a new variable, $Treaty\ coverage_{ijq}$, which represents the number of treaties

signed by the country *i* with the world's 51 tax havens other than *j* in the quarter *q*. The panel regression coefficient for this variable is significant and positive (0.0059 at the 5 percent confidence level).

This result can be interpreted as the fact that tax havens that do not participate in the G20 initiative, and do not sign the treaties, only benefit from that. JZ show that there is a significant inflow of deposits to banks of non-compliant tax havens.

JZ propose the strategy that tax havens might use to increase compliance with G20 regulation and at the same time escape the decrease of capital flows from tax evaders. One possible strategy that tax havens can follow is that they might have systematically signed treaties with countries that were placing fewer and fewer deposits in their banks, relative to the global trend. To test this possibility JZ run the following regression:

$$Treaty_{ijq} = \alpha + \beta_2 Growth_{ijq} + \delta X_{ijq} + \gamma Distance_{ij} + \zeta_i + \theta_q + \varepsilon_{ijq}$$

where $Treaty_{ijq}$ is a dummy equal to 1 if *i* and *j* sign an information exchange treaty in quarter *q*; $Growth_{ijq}$ captures the growth rate of the deposits held by savers of country *i* in haven *j* before quarter *q*; X_{ijq} includes other bilateral factors; ζ_i denotes saver-country fixed effects; and θ_q denotes time fixed effects.

JZ want to find out if the probability of signing a treaty is affected by past deposit growth rates: that is, if the decreasing amount of deposits of country *i* in banks of the country *j* in the past has magnified the probability of the two countries signing a treaty. Their results show that the growth of deposits eight quarters (two years) ago and four quarters (one year) ago does not affect the probability of a treaty. This result can be used as an argument against the theory that tax havens strategically sign treaties with countries that have fewer financial ties.

Additionally, this test provides us with information about other determinants of the probability of signing a treaty. For example, the test shows that distance between counterparties decreases the probability of the two countries signing the treaty.

One of the main purposes of tests conducted by JZ is to determine the efficiency of the G20 initiative in decreasing tax evasion. Results are mixed. On the one hand, treaties decrease the amount of deposits in tax havens; but on the other hand, the effect is economically weak. JZ also show that tax havens are inclined to sign treaties with other tax havens. Finally, their results indicate that the G20 initiative has caused a relocation of deposits between tax havens, which leaves the amount of funds held offshore roughly unchanged at a global level.

The G20 initiative should increase the compliance of citizens with the tax regulation of their countries and it should decrease the real amount of evaded taxes post factum. JZ also address this problem. The authors provide graphical evidence that the treaties do not have a significant effect on the amount of interest income earned by EU residents in Swiss banks and declared to home country tax authorities. This test is only conducted for Switzerland, which is still considered to be one of the most important tax havens in the world.

In their study, Johannesen and Zucman provide evidence of the inefficiency of the G20 initiative in fighting tax evasion. They show that treaties have no significant effect on the amount of foreign deposits in tax havens. Additionally, they show that treaties do not affect the compliance of the depositors.

But tax evasion is only one part of the shadow capital flows. The general question concerns the role of international soft regulation in affecting the global financial markets. The effectiveness of international soft regulation in influencing the capital flows could be one more explanation of the Lucas paradox. If soft regulation is not effective, then capital flows from rich countries to poor countries stay unobservable.

As a cornerstone of the international soft regulation aimed at influencing the capital flows, we have to consider actions realized by the Financial Action Task Force (FAFT).

As already mentioned in Chapter 1, in 1999 FAFT established the international standards of the policy called Anti-Money Laundering and Combating the Financing of Terrorism (AML/CFT). Nowadays, the standards consist of 49 Recommendations for actions against money laundering and the financing of terrorism. Since 2000, FAFT has issued a list of countries that are non-compliant with recommendations (hereafter, blacklist). The blacklisting of a country, on the one hand, can be considered as an indication of its low institutional quality. On the other hand, being blacklisted once is a signal for a country to take some action and improve its level of regulation. Therefore, the effect of blacklisting can be investigated in dynamics: the immediate effect of the international signal of low institutional quality, and the lagged effect as a signal to improve the situation. The creation of the list itself can also be considered as an improvement in international institutional quality. So the effect of the blacklist can also be related to the Lucas paradox. The recent study by Masciandaro and Balakina (2014) investigates these questions first with a theoretical model and then with empirical tests.

The theoretical model internalizes the bank investment decision based on the signal – blacklisting – by investigating the following question: under which conditions do the potential monetary and reputational costs associated with blacklisting risk provide incentives for an international bank to change its business decisions?

The model assumes a world with n countries and perfectly competitive markets for banking, where $n - 1$ countries define and implement international AML/CFT regulation to supply public goods – such as financial stability and integrity – while the free-riding country F designs non-compliant regulation.

The country F faces a risk of being blacklisted by the other $n - 1$ countries. In other words, there is a probability different from 0 that the international community – that is, all countries except country F – will change the global regulatory environment by introducing blacklisting and applying the name and shame approach. A country is defined as country as BLC, when the probability of being listed, p, where $0 < p < 1$, is different from 0. In other words, financial markets evaluate the risk of a country being AML/CFT non-compliant.

The model highlights the fact that blacklisting procedures imply banning and obstacles for the bank to do business with BLCs, creating an indirect enforcement device on banking firms.

The model implies that there are essentially three reasons why the listing – or delisting – event can hit both inflows and outflows of the BLC. First, because of the supervisory costs carried by the $n - 1$ countries. Second, because an international bank can provide funds to the BLC (inflow) and borrow from the BLC (outflow). Third, the money laundering financial flows are characterized per se by mechanisms that involve both outflows and inflows of capital.

Therefore, when a country is blacklisted its capital flows suffer higher regulatory costs and the reputations of bank owners and managers are at risk.

In this world, an international bank is active, and its overall volume of business is equal to $W = 1$.

The international banker can decide to allocate a share Y ($0 < Y < 1$) of its business to the country F. Given the perfect competition in the banking world market, the international bank is price-taker – which means that the returns on the banking activities are given and the banker can just choose its optimal quantity.

In determining the level of its capital flow for country F, the banker takes into account both expected benefits and losses.

The bank's expected benefits can be formulated as the following:

$$B_F = (1 + b)(1 - p)Y \tag{3.15}$$

$$B_W = (1 - Y) \tag{3.16}$$

where B_F denotes the volume of the business activity in the country and B_W is the volume of the international bank's business activity in rest of the world. Given this business activity, banking benefits also depend on the expected net rate of return in each market; b represents the return differential, and p is the probability of the country being blacklisted.

In the model it has been assumed that the expected costs C for the banker depend on the volume of business activity in country F, taking into account AML/CFT regulatory costs. Everywhere but in country F, AML/CFT compliance costs are proportional, with respect to business activity, through a parameter $c \geq 0$. AML/CFT regulation produces costs for banks, which include transaction monitoring costs.

In country F, regulatory costs depend on the blacklisting event. If the BLC is not effectively listed, the compliance cost parameter is by definition smaller than c (again, for the sake of simplicity, it equals 0). Therefore, parameter c measures the regulatory lightness factor: large AML/CFT costs increase the incentive for doing business with the BLC. If listing occurs, the bank will suffer from non-linear costs, given the existence of both greater supervisory costs and of reputational costs (Picard and Pieretti 2011). The sensitivity of the bank, with regard to incurring additional costs for doing business with a BLC, depends on the reputational factor $d > 0$.

Therefore, banking costs can be formulated in the following way:

$$C_W = c(1 - Y) \tag{3.17}$$

$$C_F = pdY^2 \tag{3.18}$$

The banker, modeled as a risk-neutral agent, can now define the optimal level of activity in the BLC. The banker's utility function U is specified as:

$$U(Y) = (1 - c)(1 - Y) + (1 - p)(1 + b)Y - pdY^2 \tag{3.19}$$

Graphically, this is represented by Figure 3.1.

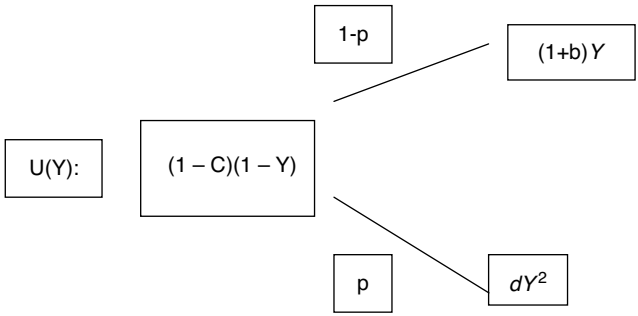

Figure 3.1 Defining the optimal level of international bank flows with a BLC country

From:

$$\frac{\partial U}{\partial Y} = -(1-c) + (1-p)(1+b) - 2pdY = 0 \tag{3.20}$$

the optimal level Y^* of foreign activities in country F is equal to:

$$Y^* = \frac{(1-p)(1+b) - (1-c)}{2pd} \tag{3.21}$$

Capital flows between the international bank and the BLC essentially depend on four factors: profitability of investments in the BLC (b); regulatory lightness (c); blacklisting costs (d); and probability of blacklisting (p). Increases in profitability of investments and increases in regulatory gains always lead to increases in the capital flow to the BLC. But the effect of the blacklisting costs is ambiguous: it depends on the size of the profitability factor and regulatory lightness.

$$\frac{\partial Y^*}{\partial d} = \frac{p - b(1-p) - c}{2d^2 p} < 0 \tag{3.22}$$

if

$$(b + c) > p(1 + b)$$

Finally, let us zoom on the key variable: the probability that the non-compliant country will be listed: that is, *the blacklisting factor*. It is

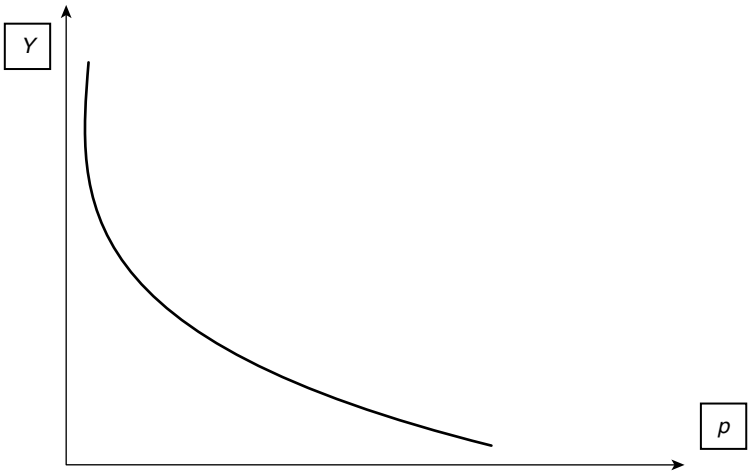

Figure 3.2 International bank flows and blacklisting risk

evident that higher probability can produce low levels of capital flows – the stigma effect – under well-defined conditions. More precisely, the growth of the banking flows is inversely associated with changes in the probability of black listing (Figure 3.2):

$$\frac{\partial Y}{\partial p} = \frac{(1-c)-(1+b)}{2p^2 d} < 0 \tag{3.23}$$

$$\frac{\partial^2 Y}{\partial^2 p} = \frac{c+b}{dp^3} > 0 \tag{3.24}$$

The economics is clear. First of all, given the non-linearity of the blacklisting costs, the listing event unambiguously reduces the capital flows of the BLC country. The stigma effect holds. Second, the relative dimension of two catalysts – the regulatory arbitrage factor and the profitability factor – is relevant in determining the shape of the stigma effect: capital flow sensitivity will be greater as the regulatory factor becomes higher. Otherwise the stigma paradox effect can emerge.

In fact, the stigma effect is only evident if doing banking business in a BLC country produces asymmetric effects in the benefits and costs: that is, if the benefits are linear while the costs are non-linear. If we suppose

that the bank also enjoys non-linear benefits in expanding its business toward the BLC country:

$$B_F = (1 + b)(1 - p)Y^2 \tag{3.25}$$

In this case, the optimal level Y^{**} of foreign activities in country F is equal to:

$$Y^{**} = \frac{(1-c)}{2\left[(1-p)(1+b) - pd\right]} \tag{3.26}$$

Now the relationship between the capital inflows and the probability of being blacklisted is ambiguous:

$$\frac{\partial Y^{**}}{\partial p} = \frac{(1-c)\left[d + (1+b)\right]}{\left[(2d^2 + 4(1+b)d + 2(1+b)^2)p^2 - (4(1+b)d + 4(1+b)^2)p + 2(1+b)^2\right]} \tag{3.27}$$

The blacklisting threat cannot be sufficient in the face of the international bank's appetite to expand its business in BLC countries. Therefore, the answer to the initial question – regarding the conditions under which the stigma effect holds – can be found in the asymmetry between the non-linear costs and linear benefits for an international bank hat is doing business with a BLC country; at the same time, the compliance costs of the international AML/CFT regulation are linear.

The *stigma paradox* can emerge as a peculiar case of regulatory arbitrage that creates the so-called race to the bottom strategy by eluding the more prudent regulation.

In other words, the features of the stigma effect are conditioned on the relevance of at least three factors: the compliance costs of the best practices in international AML/CFT regulation; the profitability and costs of doing business with a BLC country.

This answer is confirmed in a framework that is focused on banking strategy, with some specific results obtained by analysing the government strategy in designing AML/CFT policies, which indicate that the stigma effect holds when the blacklisting opportunity costs are larger than the compliance costs (Masciandaro 2005, 2008, Picard and Pieretti 2011). Otherwise the effect on the banking asset distribution is ambiguous from both the theoretical (Rose and Spiegel 2006) and empirical (Kudrle 2009) perspectives.

To test the hypothesis that blacklisting negatively affects the capital flows, the authors estimate the following model:

$$BankFlow_{i,t} = \alpha_0 + \alpha_1 FAFT_{i,t} + \alpha_2\, Regulation_{i,t} + \alpha_3\, InstQuality_{i,t} + \gamma X_{i,t} + \phi_i + \mu_t + \varepsilon_{i,t}$$

where i represents the country dimension of the sample, and t represents the time dimension;

- $FAFT_{i,t}$ is a dummy variable equal to 1 if the country was listed in year t, and 0 otherwise.
- $Regulation_{i,t}$ is a vector of regulation and supervision indexes, such as overall activity restrictiveness (OAR); independence of supervisory authority (ISA); and supervisory lightness index (SLI).
- $InstQuality_{i,t}$ is a vector of variables that representing features of the banking sector in country i at time t: deepness of traditional banking (bank private credit to GDP, BPS); degree of innovativeness of banking activities (net interest margin, nim); stability of the banking sector (Altman Z-score, Z-score).
- Vector of independent variables $X_{i,t}$ represents other political and macroeconomic variables.
- φ_i is a country fixed effect and μ_t is a time fixed effect (constructed by using dummy variables for each year).

The bank flow variable is constructed using data from international banking statistics published by the Bank of International Settlements (BIS). In more formal terms: the bank flow variable is equal to the difference between the logarithm of total foreign claims in period $(t + 1)$ and the logarithm of total foreign claims in period (t):

$$BankFlow_{i,t} = \alpha_0 + \alpha_1 FAFT_{i,t} + \alpha_2\, Regulation_{i,t} + \alpha_3\, InstQuality_{i,t} + \gamma X_{i,t} + \phi_i + \mu_t + \varepsilon_{i,t}$$

where $TFC_{i,t}$ is the value of total foreign claims in year t for country i.

Foreign claims are financial claims on residents of countries other than the reporting country (i.e. claims on non-residents of the reporting country). In the CBS, foreign claims are calculated as the sum of cross-border and local claims (in all currencies) of reporting banks' foreign affiliates or, equally, of international claims and local claims denominated in local currencies.

The variable of interest in this research study is the dummy variable FATF. The FATF variable was constructed using the Financial Action Task Force reports published annually (in June) by the FATF. The name of the report is "Review to Identify Non-cooperative Countries or Territories: Increasing the Worldwide Effectiveness of Anti-money Laundering Measures." The report covers the previous 12 months: that is, a report published in June 2009 represents blacklisting status of the country during 12 month from June 2008 until June 2009. We assigned listed status to the country in year (t), if in June of ($t + 1$) the country was in the FATF's list.

The Financial Task Force list consists of countries perceived to be non-cooperative in the global fight against money laundering and the financing of terrorism. To evaluate the involvement of a country in the financing of terrorism and money laundering FATF has created a list of recommendations: 40 recommendations on money laundering and 9 special recommendations on the financing of terrorism. The FATF blacklist – a list of non-cooperative countries and territories – includes countries which FATF members believed were uncooperative with other jurisdictions in the international effort to combat money laundering and the financing of terrorism. The lack of cooperation manifests itself as an unwillingness or inability to follow FATF recommendations. According to the 40 recommendations on money laundering and the FATF's report on non-cooperative countries and territories, countries are required to:

- Exclude the following loopholes in financial regulation:
  - inadequate regulation and supervision of financial institutions;
  - inadequate rules for the licensing and creation of financial institutions;
  - inadequate customer identification requirements;
  - excessive secrecy provisions regarding financial institutions;
  - lack of efficient suspicious transaction reporting system.
- Impediments set by other regulatory requirements:
  - inadequate commercial law requirements for the registration of business and legal entities;
  - lack of identification of the beneficial owner(s) of legal and business entities.
- Obstacles to international cooperation
  - at administrative level;
  - at the judicial level (absence of criminalization of money laundering, laws and regulations prohibiting international exchange of information, presence of tax evasion).
- Inadequate resources for preventing, detecting and repressing money laundering activities.

The judicial system is a core element of detection in a non-cooperative country or territory. Countries which can be characterized by the absence of laws that regulate money laundering and tax evasion, or countries that prevent information-sharing about suspicious business entities, are more likely to be included in the FATF blacklist.

Thus, blacklisting of the country is not affected by its international capital flows. In this paper we are interested in the effect of blacklisting on the growth rate of international capital flows. Since blacklisting is an exogenous event for the international capital flows, the problem of endogeneity is not crucial in our analysis.

In their empirical test, the authors also control for the internal level of institutional quality. To describe the depth of the financial institutions of the country, the authors use the measure from the Global Foundation for Democracy and Development (GFDD): bank private credit to GDP (BPC). BPC is equal to the amount credited to the private sector by deposit money banks and other financial institutions. It is calculated with the following formula:

$$BPC_t = 0.5 \frac{PC_t / P_{et} + PC_{t-1} / P_{et-1}}{GDP_t / P_{\alpha t}}$$

where PC_t is credit to the private sector in year t; P_{et} is end-of-period CPI; and $P_{\bar{e}t}$ is average annual CPI.

We also use the net interest margin (NIM) from the "Global Financial Development Database" as the measure of the financial institution efficiency. NIM is calculated as the portion of a bank's income that has been generated by non-interest related activities as a percentage of total income (net-interest income plus non-interest income). Non-interest related income includes net gains on trading and derivatives, net gains on other securities, net fees and commissions, and other operating income.

The bank *Z*-score (GFDD) is used as a measure of the stability of the financial institutions. It captures the probability of default of a country's banking system, calculated as a weighted average of the *Z*-scores of a country's individual banks (the weights are based on the individual banks' total assets). The *Z*-score compares a bank's buffers (capitalization and returns) with the volatility of those returns.

Other control variables include measures for various aspects of bank regulation and supervision, such as the overall activities restrictions index and the independence of the supervisory authority index from

the three worldwide surveys conducted by Barth, Caprio and Levine ("Banking Regulation Survey") in 2001 and 2004.

We also include several country-level variables to control for the differences in economic development among countries. We control for the GDP growth of the country using GDP growth as an independent variable. Also, to estimate the effect of the introduction of external soft regulation, we use a dummy variable to distinguish the period after the introduction of the FATF blacklist (the dummy is equal to 1 for the periods after 2001, and 0 for the periods before).

The main result of the paper is described in Table 3.5.

From the results, we can see that the blacklisting increases the growth rate of the capital flow to the country. Therefore, the stigma paradox holds. At the same time, if we assume that on average the blacklisted countries are not advanced countries, in this special case the Lucas paradox seems to be solved: capital flows looking for opaqueness seem to migrate from compliant countries to non-compliant ones.

However, these empirical results are far from being the definitive and complete answer. In fact, when doing the same econometric exercise with a different database (Masciandaro 2013), with 34 Latin American

Table 3.5 Masciandaro and Balakina: main results

Dependent variable	**Main regression**
FAFT listing	36.78**
	(2.06)
Supervisory lightness index	–6.066**
	(–2.14)
Overall activities restrictions index	5.334
	(0.26)
Independence of the supervisory authority index	–11.22
	(–1.04)
Bank private credit to GDP	–2.159***
	(–6.07)
Net interest margin	1.348
	(0.39)
Bank Z-score	0.0313
	(0.06)
Log GDP	47.10
	(1.33)

Note: ***indicates statistical significance at 1 percent; **indicates statistical significance at 5 percent.

countries in the period 1996–2007 using annual panel data, the results are different because the stigma effect is obtained.

3.6 New frontiers against banking secrecy: the beggar-thy-neighbor regulation

In the previous section we addressed our fundamental question: under which conditions can international soft regulation produce an interest alignment between banks and countries, in order to highlight excessive banking secrecy?

The answer has been found in the asymmetry between non-linear costs and linear benefits for an international bank doing business with an opaque country, depending on how the international regulations are designed.

Therefore, the international banks operating in global financial markets must take into account two sources of rules concerning bank secrecy: hard national legislations; and soft international law.

Nowadays, banking secrecy is a hot issue. The demand for hidden banking is still active and robust. The more agents and organizations there are involved in illegal and criminal activities, the more the demand for banking secrecy will be kept high and stable. Fly for secrecy still to trigger the international capital movements. When the probability of detection and/or of sanction arises in a country, the incentives to deposit and keep money abroad increase greatly.

Despite the fact that the origin of the fly for secrecy is illegal, most national politicians are happy to ignore all of this as long as the opaque money keeps flowing into their banks and economies. The supply of banking secrecy is still alive, notwithstanding the increased OECD effort to enforce the automatic exchange of banking information among countries and territories.

The international pressure to implement treaties on information-exchange drives all the countries, including the financial centers,[1] to reform their regulations.

However, the flows that need to be hidden can still be kept in the jurisdictions which *de jure* or *de facto* have not committed to exchanging information. It is still easy for non-compliant countries to get around the OECD directive. The loopholes in the network of the bilateral and

[1] Ayadi and Arbak (2014) assessed to what extent the current effort to increase the cooperation in regulation could allow European financial centers to evolve more successfully in the period after the global financial crisis.

multilateral treaties simply force the launderers to the countries that are not covered by treaties.

The asymmetry in the national regulations against banking secrecy is a strong source of regulatory arbitrage. Offering banking secrecy can be a national asset, especially if it is supplied together with a reputation of overall stability and professionalism in managing banking and professional assets.

However, in very recent times international banks have experienced a new source of obligations: the beggar-thy-neighbor regulation, which occurs through extra-territorial procedures. We can define a beggar-thy-neighbor regulation against banking secrecy as being a situation when a national authority requires disclosure of information about banking customers and the obligation is applied to the banks, both in national and foreign jurisdictions. Usually the extra-territorial obligation is enforced via monetary and/or reputational sanctions, which hit foreign banks and therefore their home countries.

The extra-territorial approach is moving toward preventing and highlighting serious crimes, such as tax evasion and the financing of terrorism. Different countries – mainly the US, but also the UK and Germany – are demanding that international banks cooperate with them by disclosing information; and they are threatened with fines and sanctions, investigations and suits if they do not comply.

Under which condition can extra-territorial regulation be effective?

The answer can be found by applying a simple framework, as proposed in Masciandaro et al. (2012). Our model assumes a world with two countries, where an international banker headquartered in country A (recipient country) can be sanctioned for its opaque activity by country B (source country). The opaque activity increases the welfare of the recipient country.

Consider that the banker can decide to allocate a share Y ($0 < Y < 1$) of its business in opaque and risky activities: that is, offering banking secrecy, but knowing that the banking secrecy business can be sanctioned through a beggar-thy-neighbor regulation designed and implemented by the source country.

The banker's welfare function, $W(Y)$, can thus be written:

$$W(Y) = Y - \left(\frac{1}{p}\right) C(Y) \tag{3.28}$$

Equation (3.28) expresses the tradeoff faced by the banker in deciding how to be involved in opaque banking businesses. The first term of

his welfare function, Y, represents the opportunity cost of undertaking opaque banking, while $(1/p)\ C(Y)$ reflects the fact that the banker incurs a risk of sanction, which decreases in probability p when the BTN regulation is avoided, and increases in the costs of being sanctioned, which in turn are associated with the volume of the opaque banking business.

By maximizing the banker welfare function with respect to Y we obtain:

$$\frac{\partial W(Y)}{\partial Y} = 1 - \left(\frac{1}{p}\right)\frac{\partial C(Y)}{\partial Y} = 0 \tag{3.29}$$

The problem has an interior solution. Solving for the optimal level of Y, using for the sake of simplicity a general power function $C(Y) = Y^{z+1}$, with $z > 0$, returns:

$$Y^{*} = \left(\frac{p}{z+1}\right)^{\frac{1}{z}} \tag{3.30}$$

The reduced form (3.30) can easily be used to discuss the effects of the existence of a BTN regulation in influencing the optimal volume Y^{*} of the opaque banking business.

On the one hand, one can easily observe from equation (3.30) that, *ceteris paribus*, the optimal level of the opaque banking decreases as the curvature of the cost function – expressed by z – increases. Since the latter reflects the harshness of the BTN sanctions, equation (3.30) rationalizes the fact that the more the bankers are sensible to the costs imposed via the BTN regulation, the less opaque banking there will be.

On the other hand, *ceteris paribus*, higher levels of p increase the involvement of the intermediaries in banking secrecy.

Our results suggest that the harshness of the BTN regulation and its credibility can be seen as complementary in determining the banker's choice of whether to be active in opaque businesses. The amount of banking secrecy supplied depends on how effective the BTN regulation is.

Furthermore, the features of the BTN regulation can also influence the welfare of the sanctioned banks' home countries, as their macroeconomic performances increasingly depend on banking activities as a whole.

In this respect, our analysis of the recent examples of beggar-thy-neighbor regulation is consistent with the rationale applied in all the previous sections the effectiveness of policies that aim to fight banking secrecy will depend on how the concrete regulation designed and implemented by the source country influences the costs and benefits

analysis of the international banks and the recipient countries – where, in general, the asymmetry between costs and benefits for each goal function is the necessary condition for effectiveness.

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Appendix: Financial Intelligence Units around the World

A.1 Introduction

In this Appendix we focus on the descriptive analysis of the financial FIU (FFIU) and its independence.

First of all, we need to build an index representing the presence of the FIU and its independence in each country of our sample. In doing so, our variable *INDFFIU* ranges 0–2. If the FIU is not a financial–administrative type, it takes value 0. If the FIU is financial, the variable takes the value ≥1. In the case of a FFIU, we have three scenarios. First, the FFIU is a unit or department within the government, meaning that it is not independent and the variable takes value 1. Second, the FFIU is a unit or department within the central bank, meaning that the FIU's independence is linked to the independence of the central bank. In this case, the variable takes value 1 + GMT index, representing central bank independence. Third, the FFIU has a mixed system of governance. In this case, its board is appointed by both the government and the central bank: the variable takes the value 1 + a weighted average by considering a share of the independence of each agency which supervises the FFIU. For instance, consider Malta. Its FIU board has four members: three of them are appointed by the government; one of them is appointed by the central bank. In this case, the variable takes the following value: 1 + [(0 + 0 + 0 + GMTmalta)/4].

We are also interested in disaggregating the independence of the FIUs in the political (i.e. autonomy on goals) *INDFFIUp*, and operational (i.e. autonomy on tools) *INDFFIUo*, subcomponents. In doing so, we follow the same procedure as the overall *INDFFIU* index.

A.2 Financial intelligence units: nature and governance

Country: Albania.

FIU: The General Directorate for the Prevention of Money Laundering (GDPML).

Institutional model: Financial administrative.

Main features: The mission includes:

- To proactively network with local law enforcement, regulators and international counterparts to effectively assist in detecting, assessing and eradicating all threats to the national economy that stem from money laundering and financing of terrorism.
- The General Directorate for the Prevention of Money Laundering is the Albanian FIU empowered by the AML/CFT (Anti-Money Laundering and Countering the Financing of Terrorism) legislation to collect, manage and

analyze reports filed by the obligors in order to prevent and combat money laundering and financing of terrorism.
- The GDPML disseminates information to Albanian law enforcement authorities if there are grounds to suspect that money laundering or financing of terrorism offenses have been or are currently being committed. It also cooperates closely with other FIUs around the world.
- The GDPML also has a supervisory role whereby it oversees the obligor's compliance with the requirements of the AML/CTF Law and in that regard it cooperates with all the supervisory authorities, and in particular with the Bank of Albania and the Financial Supervisory Authority.

Principal: The GDPML depends on the Ministry of Finance.
Year of establishment: 2000.
Banking authority: Bank of Albania.
Securities authority: Albanian Financial Supervisory Authority (AFSA).
Insurance authority: Albanian Financial Supervisory Authority (AFSA).

Country: Argentina.
FIU: Financial Information Unit.
Institutional model: Administrative.
Main features: The FIU's mission is to counter possible financing of terrorism and laundering of the proceeds of criminal activity, such as drug trafficking, gunrunning, child sexual abuse, and fraud. To this end, the FIU analyzes information brought up by different persons who are bound to report, and by individuals, which if appropriate, is submitted to the Attorney General's Office, in order to continue with the investigation. These powers are assigned pursuant Law 25.246 as amended by Law 26.268.
Principal: The Financial Information Unit works within Ministry of Justice and Human Rights.
Year of establishment: 2000.
Banking authority: Central Bank of Argentina.
Securities authority: Argentine National Securities Commission.
Insurance authority: Superintendency of Insurance (SSN).

Country: Australia.
FIU: AUSTRAC.
Institutional model: Administrative.
Main features: AUSTRAC's purpose is to protect the integrity of Australia's financial system and contribute to the administration of justice through its expertise in countering money laundering and the financing of terrorism. In particular, AUSTRAC has two main tasks: AUSTRAC oversees the compliance of Australian businesses, defined as "reporting entities," with their requirements under the Anti-Money Laundering and Counter-Terrorism Financing Act 2006 and the Financial Transaction Reports Act 1988. These requirements include: implementing programs for identifying and monitoring customers and for managing the risks of money laundering and the financing of terrorism; reporting suspicious matters, threshold transactions and international funds transfer instructions; and submitting an annual compliance report. Second, in its intelligence role, AUSTRAC provides financial information to state, territory and Australian

law enforcement, security, social justice and revenue agencies, and certain international counterparts. The intelligence provided is analyzed by highly qualified AUSTRAC personnel who use sophisticated tools to identify information that can assist AUSTRAC's partner agencies to investigate and prosecute criminal and terrorist enterprises in Australia and overseas.

Principal: The Chief Executive Officer of AUSTRAC is accountable to the Parliament of Australia through the Minister for Home Affairs.

Year of establishment: 1988.

Banking authority: Australian Prudential Regulation Authority.

Securities authority: Australian Securities and Investments Commission.

Insurance authority: Australian Prudential Regulation Authority.

Country: Austria.

FIU: Austrian laws and regulations do not explicitly provide for the establishment of an FIU. The fight against money laundering is a complex subject, which requires the cooperation of several authorities.

Institutional model: Hybrid.

Main features: The essential aim for the financial sector is to prevent the exploitation of the Austrian financial system for the purposes of deception and shifting criminal money. The financial institutions are called upon to act preventively, to know the identity of their customers and to enable the traceability of cash flows. Thus, financial institutions are in positions to provide all information to the investigating authority and to submit suspicious transaction reports in the case of suspicious activities.

Principal: The role of the Austrian Financial Market Authority (FMA)

- The FMA is responsible for the supervision of credit institutions, insurance undertakings, investment firms, investment service providers as well as payment institutions. As a supervisory authority, the FMA supervises compliance with legal provisions and due diligence to obligations in the area of money laundering and the financing of terrorism and takes appropriate steps if these responsibilities are violated.

The role of the Criminal Intelligence Service (.BK)

- The .BK is the national center for the receiving, analysis and dissemination of suspicious transaction reports submitted by credit institutions, insurance, jewelers, auditors, accountants and solicitors. The .BK regularly holds information events for all professions, who are obliged to submit suspicious transaction reports. These events are based on a multidisciplinary approach. Depending on the situation, investigations against terrorist financing are carried out in cooperation with the Federal Agency for State Protection and Counter-Terrorism (BVT).

The role of the Federal Agency for State Protection and Counter-Terrorism (BVT)

- If there is a suspicious transaction report on terrorist financing, the report will be disseminated to the BVT by the Criminal Intelligence Service. The

BVT investigates these cases in cooperation with local authorities. The contact point for the private sector remains the Austrian financial intelligence unit.

The role of the Federal Ministry of Justice (BMJ)

- The Federal Ministry of Justice is responsible for developing criminal law and regulations for lawyers and notaries. The courts and the public prosecutor's offices are responsible for prosecution.

The role of the Federal Ministry of Finance (BMF)

- The Federal Ministry of Finance adapts the Banking Act (BWG), the Insurance Supervision Act (VAG), the Securities Supervision Act (WAG) and the Gambling Law to incorporate the latest international standards in the area of money laundering and the financing of terrorism. It also represents Austria in international fora (e.g. FATF – Financial Action Task Force on Money Laundering), where the international policy on money laundering and the financing of terrorism is developed.

The role of the Oesterreichische Nationalbank (OeNB)

The Oesterreichische Nationalbank is entrusted with conducting off-site monitoring and on-site examinations and is part of the Austrian system in the fight against money laundering and the financing of terrorism. The OeNB issues regulations based on the Foreign Exchange Act and Sanctions Act with regard to payment transactions.

Furthermore, the Federal Ministry of Economics and Family and Youth (BMWFJ) and the Austrian Foreign Ministry (BMEIA), as well as the Chamber of Attorneys at Law, the Chamber of Notaries and the Chamber of Auditors and Accountants, are involved in the fight against money laundering in Austria.

Year of establishment: 2011 (given the hybrid model, we refer to the Regulation on Money Laundering and Terrorist Financing Risk GTV law).

Banking authority: Financial Market Authority.

Securities authority: Financial Market Authority.

Insurance authority: Financial Market Authority.

Country: Belgium.

FIU: Belgian Financial Intelligence Processing Unit (CTIF-CFI).

Institutional model: Administrative (partially financial).

Main features: The Belgian Financial Intelligence Processing Unit (CTIF-CFI), established by the Law of January 11, 1993, is a central part of the Belgian AML/CFT system.

CTIF-CFI is an independent administrative authority with a legal personality and is supervised by the Ministers of Justice and Finance. It is led by a magistrate, Mr. Jean-Claude Delepiere, and is composed of legal and financial experts and a senior officer seconded from the federal police (see the website of the CTIF-CFI for details of its composition).

Its composition, organization, operation and independence are stipulated in the Royal Decree of June 11, 1993. The CTIF-CFI is in charge of processing suspicious financial facts and transactions that are linked to money laundering and the financing of terrorism, and reported by institutions and individuals – as specified in the law.

Principal: Supervised by Ministry of Justice and Finance.
Year of establishment: 1993.
Banking authority: National Bank of Belgium.
Securities authority: National Bank of Belgium.
Insurance authority: National Bank of Belgium.

Country: Brazil.
FIU: The Council for Financial Activities Control (COAF).
Institutional model: Financial administrative.
Main features: To prevent the use of economic sectors for money laundering and the financing of terrorism; promotion of cooperation and exchange of information between the public and private sectors. The Council for Financial Activities Control (COAF), a body established under the Ministry of Finance, was established by Act 9613 of 1998, and aims primarily to prevent and combat money laundering and the financing of terrorism.

The powers of COAF are defined in Articles 14 and 15 of that Act, namely:

- Receive, examine and identify information regarding suspicions of illegal activity;
- Notify the competent authorities in order to establish appropriate procedures in situations where the Council has concluded that there is evidence of crimes of "laundering," concealment of assets, rights and values, or any other unlawful activity;
- Coordinate and propose mechanisms for cooperation and exchange of information that allow for fast and efficient action in combating the concealment or disguise of property, rights and value shares;
- Discipline and apply administrative penalties.

The § 3 of Article 11 of the law also assigned to COAF the residual jurisdiction to regulate economic sectors for which there is no governing body or specific surveillance. In such cases, it is set to COAF the covered persons and the means and criteria for sending communications and dispatching instructions for customer identification and keeping records of transactions, besides the application of penalties under Article 12 of the law.

Principal: COAF depends on the Ministry of Finance.
Year of establishment: 1998.
Banking authority: Central Bank of Brazil.
Securities authority: Securities Commission.
Insurance authority: Superintendency of Private Insurance.

Country: Bulgaria.
FIU: Financial Intelligence Directorate of National Security Agency (FID).
Institutional model: Law enforcement.

Main features: The State Agency for National Security incorporates within its structure a specialized administrative directorate for financial intelligence. The Financial Intelligence Directorate (FID) collects, stores, investigates, analyzes and discloses financial intelligence under the terms and procedures of the Law on Measures against Money Laundering (LMML) and the Law on Measures against the Financing of Terrorism (LMFT). The FID is a financial intelligence unit of the Republic of Bulgaria under Article 2, paragraphs 1 and 3 of the Decision of the Council of the EU from October 17, 2000. The FID holds responsibility for the protection of shared intelligence on the website of the Egmont Group and the security of the site itself. It performs functions of detection and prevention against money laundering and the financing of terrorism, and with regard to capital flows, corruption and bribery in international trade transactions and confiscation. In the fulfillment of its functions, the FID closely interacts with the Bulgarian security and public order services and its foreign counterparts. The State Agency for National Security works in close collaboration with the FATF (Financial Action Task Force) and MONEYVAL (Committee of Experts on the Evaluation of Anti-Money Laundering Measures and the Financing of Terrorism) through a Financial Intelligence Directorate. The FATF is an organization which sets the standards for the prevention of money laundering and the financing of terrorism. MONEYVAL is an organization that bears responsibility for the measures taken within Europe to combat money laundering and financing of terrorism.

Principal: The Bulgarian FIU is a department within the National Security Agency.

Year of establishment: 2000.

Banking authority: Bulgarian National Bank.

Securities authority: Financial Supervision Commission.

Insurance authority: Financial Supervision Commission.

Country: Cameroon.

FIU: National Agency for Financial Investigation (NAFI).

Institutional model: Financial administrative.

Main features: The Cameroonian mechanism for combating money laundering and the financing of terrorism places the National Agency for Financial Investigation (NAFI) at the center of a process: upstream are its partners, which are liable professional groups (reporting entities), and downstream are the judicial authorities. The NAFI is Cameroon's FIU. It was established by Presidential Decree No. 2005/187 of May 31, 2005 in which its organization and function were laid out.

Principal: The NAFI is a department within the Ministry of Finance.

Year of establishment: 2005.

Banking authority: Banking Commission of the Central African States.

Securities authority: Commission de Surveillance du Marche Financier de L'Afrique Central (COSUMAF).

Insurance authority: Conference Interafricaine des Marches d'Assurances (CIMA).

Country: Canada.

FIU: Financial Transactions and Reports Analysis Centre of Canada (FINTRAC).

Institutional model: Financial Administrative.

Main features: The Financial Transactions and Reports Analysis Centre of Canada (FINTRAC), Canada's FIU, was created in 2000. It is an independent agency that reports to the Minister of Finance, who is accountable to parliament for the activities of the Centre. It was established and operates within the legal ambit of the Proceeds of Crime (Money Laundering) and the Terrorist Financing Act (PCMLTFA) and Regulations.

Its mandate is to facilitate the detection, prevention and deterrence of money laundering and the financing of terrorist activities, while ensuring the protection of personal information under its control. It fulfills its mandate through the following activities:

- Receiving financial transaction reports and voluntary information on money laundering and terrorist financing in accordance with the legislation and regulations, and safeguarding personal information under its control.
- Ensuring compliance of reporting entities with the legislation and regulations.
- Producing financial intelligence relevant to money laundering, the financing of terrorist activity and threats to the security of Canada.
- Researching and analyzing data from a variety of information sources that shed light on trends and patterns in money laundering and the financing of terrorism.
- Maintaining a registry of money services businesses in Canada.
- Enhancing public awareness and understanding of money laundering and the financing of terrorist activity.

Priorities:

1. Provide valued financial intelligence to law enforcement and national security partners.
2. Maximize the delivery of an effective and robust national compliance program based on risk considerations for the production of financial intelligence that enhances the quality and quantity of reported data available to FINTRAC, and the enforcement of compliance regimes.
3. Pursue policy and legislative opportunities to strengthen the anti-money laundering and anti-terrorist financing regime.
4. Leverage advancements in information technology as FINTRAC seeks to transform its data business processes.
5. Strengthen leadership capacity throughout the Centre by enhancing its ability to recruit, develop and retain talent that aligns with its objectives and deepens its expertise.
6. Strengthen the Centre's approach to its security posture to ensure a high level of assurance that information, assets, and services are protected against compromise.

Broadly speaking, the mission is to contribute to the public safety of Canadians and help protect the integrity of Canada's financial system through the detection and deterrence of money laundering and terrorist financing.

Principal: FINTRAC depends on the Ministry of Finance.
Year of establishment: 2000.
Banking authority: Office of the Superintendent of Financial Institutions.
Securities authority: Canadian Securities Administrators.
Insurance authority: Office of the Superintendent of Financial Institutions.

Country: Chile.
FIU: Unidad de Analisis Financiero (UAF) (in English: The Financial Analysis Unit).
Institutional model: Financial administrative.
Main features: The Financial Analysis Unit (UAF in Spanish) has the legal role of preventing and impeding money laundering (ML) and the financing of terrorism (TF: terrorism financing) in Chile. Therefore, it conducts financial intelligence, issues rules, monitors its compliance and disseminates information of a public nature in order to protect the country and its economy from the distortions generated by both crimes.

The UAF was established after the enactment of Law No. 19.913 on December 12, 2003. It is a decentralized public entity, with a legal personality and its own patrimony, which is related to the President of the Republic through the Ministry of Finance. Since 2010, the UAF has also coordinated the National System for the Prevention of Money Laundering and Terrorism Financing of the country, representing Chile in the Financial Action Task Force of South America (GAFISUD) that sets the policies for the prevention and control of ML/TF for Chile, Argentina, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, Mexico, Panama, Paraguay, Peru and Uruguay. The UAF exerts its preventive role through the issuance of instructions; the dissemination of warning signs; the training of entities forced to inform the service of suspicious transactions of ML or TF; and the compliance control of the rules issued. The companies and individuals from 34 economic sectors listed in Article 3 of the Law No. 19.913 are required to regularly submit suspicious transaction reports (STRs) to the UAF; these reports record suspicious business transactions and the cash transactions (ROE in Spanish) greater than 450 UF or the equivalent in the local currency. Likewise, the UAF receives and processes cash carriage and transport statements (DPTE in Spanish) for over 10,000 US dollars (or the equivalent in other currencies), sent by the National Customs Service, within the framework of the controls conducted when entering and leaving the country. In the intelligence processes carried out by the UAF, in order to detect incriminatory signs of money laundering or the financing of terrorism, both the facts sent by the entities forced to inform and the National Customs Service are utilized – such as the enquiries that the service makes to a variety of public and private databases and external agencies. This data is analyzed and systematized. When the facts show evidence of ML or TF, the information is immediately submitted to the Prosecution (MP in Spanish), the only agency empowered to decide whether or not to begin a criminal investigation of money laundering or the financing of terrorism. The MP is also the only agency that can request information to the UAF. The main customers, users and beneficiaries of the UAF are:

- the prosecution;
- judiciary;
- State Defense Council (when the cases correspond to transactions prior to the effective date of the current criminal justice system);

- Foreign Financial Intelligence Units.
- entities forced to inform;
- authorities related to the prevention and detection of money laundering;
- international agencies linked to the prevention and detection of money laundering.

Principal: UAF depends on the Ministry of Finance.
Year of establishment: 2003.
Banking authority: Superintendency of Banks and Financial Institutions.
Securities authority: Superintendence of Securities and Insurance.
Insurance authority: Superintendence of Securities and Insurance.

Country: Colombia.
FIU: Information and Financial Analysis Unit (UIAF).
Institutional model: Financial administrative.
Main features: The Information and Financial Analysis Unit (UIAF) is a special administrative unit ascribed to the Ministry of Treasury and Public Credit, the purpose of which purpose is the prevention and detection of money laundering in the different economy sectors. The UIAF was created pursuant to Act number 526, August 1999; it has legal capacity, administrative autonomy, independent patrimony and special regulations concerning staff administration, nomenclature, classification, salaries and fringe benefits, and the Unit has a technical character.

The Unit has the following external strategic objectives:

1. To reinforce technologies of information.
2. To reinforce the integral system of fighting against money laundering crimes and the financing of terrorism (LA/FT).
3. To generate mechanisms of prevention and detection of money laundering crimes and the financing of terrorism (LA/FT).
4. To position itself in a strategic and proactive role in the value chain of the fight against LA/FT.

The Unit has the following internal strategic objectives:

1. To augment the satisfaction of clients and suppliers.
2. To improve continuously through an integral system of management.

Principal: UIAF depends on the Ministry of Treasury and Public Credit.
Year of establishment: 1999.
Banking authority: Superintendency of Finance of Colombia.
Securities authority: Superintendency of Finance of Colombia.
Insurance authority: Superintendency of Finance of Colombia.

Country: Croatia.
FIU: Office for Money Laundering Prevention.
Institutional model: Financial administrative.

Main features: The Office for Money Laundering Prevention ("Office") is the central authority for reporting under the relevant anti-money laundering law.

The Office is an independent administrative unit within the Ministry of Finance and is entrusted with the prevention of money laundering and the financing of terrorism by the Act on Prevention of Money Laundering and Financing of Terrorism (Official Gazette of Republic of Croatia No. 87/08, 25/2012: "Act") and related regulations. As an FIU and a central national unit, the Office performs the following duties:

- collection, analysis and maintenance of prescribed information regarding certain transactions;
- delivery of notification on suspicious transactions to the competent authorities for further processing;
- imposition of appropriate measures upon the persons obligated under the Act ("Subjects"), jointly with the authorities;
- administrative supervision over the Subjects, concerning the proper implementation of the Act;
- international exchange of information on suspicious transactions with the appropriate authorities and departments of foreign states dealing with the prevention of money laundering, provided the reciprocity requirement is met;
- other duties in connection to the development of strategies for preventing money laundering.

Principal: The FIU depends on the Ministry of Finance.
Year of establishment: 2012.
Banking authority: Croatian National Bank.
Securities authority: Croatian Financial Services Supervisory Agency.
Insurance authority: Croatian Financial Services Supervisory Agency.

Country: Cyprus.
FIU: Unit for Combating Money Laundering (MOKAS).
Institutional model: Judicial.

Main features: In accordance with relevant provisions of the former Law of 1996, the Government of the Republic of Cyprus established its financial intelligence unit, under the name of Unit for Combating Money Laundering (MOKAS), which became operational in January 1997.

The Unit is comprised of representatives from the Attorney General's Office, the Customs and Excise Department and the police, and is headed by a senior official of the Attorney General's Office.

The Law provides for the mandatory reporting of suspicious transactions to MOKAS by all persons and professionals who are engaged in financial and non-financial businesses, including lawyers and accountants. The Unit may apply to the court and obtain freezing, confiscation and disclosure orders. It is worth noting that bank secrecy can be lifted with disclosure orders.

Furthermore, the Unit is also engaged in policy issues in the area of anti-money laundering measures, as well as in various awareness raising and training activities on the subject, involving both the public and private sectors. The Law also provides

for the establishment of an Advisory Authority against Money Laundering. This Authority was established by the Council of Ministers on November 7, 1997. It consists of representatives from a wide spectrum of public and private bodies and is presided over by the Permanent Secretary of the Ministry of Justice and Public Order. Its main tasks are to inform the Council of Ministers of any measures taken and of the general policy against money laundering and the financing of terrorism, and to advise on any necessary additional measures.

Concerning preventive measures in the financial sector, the law designates the Central Bank of Cyprus as the competent supervisory authority for banks and money transfer businesses; the Securities and Exchange Commission with regard to investment firms ; the Superintendent of Cooperative Societies and Cooperative Development for the cooperative credit societies; the Superintendent of Insurance for insurance companies; the Cyprus Bar Association for lawyers; the Institute of Certified Public Accountants for accountants and auditors; and MOKAS for real estate agents and dealers in precious metals and stones. All supervisory authorities have issued legally binding directives to persons falling under their responsibility; these directives prescribe the measures which need to be taken to achieve compliance with the law.

Principal: MOKAS depends on various authorities: the Attorney General's Office, the Customs and Excise Department and the police; it is headed by a senior official of the Attorney Office.

Year of establishment: 1996.

Banking authority: Central Bank of Cyprus.

Securities authority: Cyprus Securities and Exchange Commission.

Insurance authority: Ministry of Finance – Insurance Companies Control Service.

Country: Czech Republic.

FIU: Financial Analytical Unit (FIA).

Institutional model: Financial administrative.

Main features: The department covers work for which the Ministry of Finance is responsible under the special legal regulations on measures against the legalization of the proceeds of crime and the financing of terrorism, and the special legal regulations on the application of international sanctions with a view to maintaining and renewing international peace and safety, protection of human rights and the fight against terrorism ("international sanctions"), in accordance with the measures adopted by the UN Security Council and the EU institutions. It collects and analyzes information on suspicious transactions and performs other work resulting from those analyses. It performs conceptual work within the scope of its responsibilities and produces comprehensive proposals to extend and perfect the system of measures against the legalization of the proceeds of crime and the financing of terrorism, as well as for the area of the application of international sanctions in national and international contexts. Within the scope of its responsibilities, it prepares draft bills and statutory instruments, including their harmonization with EC/EU legal regulations and preparation of the Czech Republic's standpoints on draft regulations and other EU documents. It participates in the creation of EC/EU legal regulations. Within its sphere of competence it collaborates with international organizations, the authorities of

other states that have the same material scope, central administrative authorities and legal entities. Within the scope of its responsibilities it issues decisions on administrative procedures in accordance with special legal regulations, and represents the Ministry in administrative procedures. It also implements and organizes training and lectures.

Principal: The FIA depends on the Ministry of Finance.
Year of establishment: 2006.
Banking authority: Czech National Bank.
Securities authority: Czech National Bank.
Insurance authority: Czech National Bank.

Country: Denmark.
FIU: HVIDVASK.
Institutional model: Judicial.
Main features: N/A (website available only in Danish).
Principal: The Public Prosecutor's Office.
Year of establishment: N/A.
Banking authority: Danish Financial Supervisory Authority.
Securities authority: Danish Financial Supervisory Authority.
Insurance authority: Danish Financial Supervisory Authority.

Country: Ecuador.
FIU: Financial Intelligence Unit (FIU).
Institutional model: Administrative.
Main features: Ecuador launched the Financial Intelligence Unit (FIU) in 2006, following the introduction of the country's first anti-money laundering legislation. The FIU is a financial intelligence organization, which analyzes information that concerns unusual or unjustified financial operations or transactions. The purpose of the FIU is to process information regarding suspicious financial activity and, on a case-by-case basis, to make recommendations to the Ministerio Público to carry out criminal investigations. The FIU is part of the Consejo Nacional Contra el Lavado de Activos, which is the public entity that devises and approves plans to prevent asset laundering.
Principal: The FIU is part of the Consejo Nacional Contra el Lavado de Activos, whose governance is mixed: Banking Supervision Authority, Public Prosecutor's Office, Ministry of the Interior.
Year of establishment: 2005.
Banking authority: Superintendency of Banks and Insurers of Ecuador.
Securities authority: Superintendency of Companies – National Securities Commission.
Insurance authority: Superintendency of Banks and Insurers of Ecuador.

Country: Egypt.
FIU: Egyptian Money Laundering Combating Unit (EMLCU).
Institutional model: Financial administrative.
Main features: The Egyptian Money Laundering Combating Unit (EMLCU) is the Egyptian FIU responsible for combating money laundering and the financing of terrorism in Egypt. It was established in 2002 by virtue of Law No. 80 for 2002.

Its mission is to improve AML/CFT systems in Egypt's financial institutions, in order to prevent them from being used to process criminal proceeds or finance terrorism. The EMLCU is responsible for receiving, analyzing and disseminating financial disclosures to the competent authorities. The EMLCU receives reports of suspicious transactions from financial institutions; it takes the necessary measures for the examination and investigation of these reports, in coordination with the competent authorities.

Principal: EMLCU is a department within the Central Bank of Egypt.
Year of establishment: 2002.
Banking authority: Central Bank of Egypt.
Securities authority: Egyptian Financial Supervisory Authority (EFSA).
Insurance authority: Egyptian Financial Supervisory Authority (EFSA).

Country: Estonia.
FIU: Estonian Financial Intelligence Unit (FIU).
Institutional model: Law Enforcement.
Main features: The Estonian Financial Intelligence Unit (FIU) is an independent structural unit of the Estonian Police and Border Guard Board. The FIU analyzes and verifies information about suspicions of money laundering or the financing of terrorism, takes measures to preserve property where necessary, and immediately forwards materials to the competent authorities upon detection of the elements of a criminal offense. All persons who suspect that a transaction may be connected with either money laundering or the financing of terrorism are encouraged to notify the FIU of suspicious transactions. Since January 2008, it has been possible to send an electronic notification to the FIU by using the digital format on its website.
Principal: The Estonian Financial Intelligence Unit (FIU) is an independent structural unit of the Estonian Police and Border Guard Board.
Year of establishment: 2007.
Banking authority: Estonian Financial Supervision Authority.
Securities authority: Estonian Financial Supervision Authority.
Insurance authority: Estonian Financial Supervision Authority.

Country: Finland.
FIU: Financial Intelligence Unit.
Institutional model: Law Enforcement.
Main features: In Finland, the FIU operates in connection with the National Bureau of Investigation and deals with the reports on suspicious transactions that are submitted to it. Responsibility for the development of anti-money laundering legislation lies with the Ministry of the Interior. The FIU, in turn, is responsible for ensuring that the procedures, risk management and internal control of supervised entities meet statutory requirements.

A supervised entity or its employee may be sentenced to receive punishment for failure to comply with the obligations of customer due diligence, concerning the prevention of money laundering and the financing of terrorism, under the Act on Preventing and Clearing Money Laundering and Terrorist Financing. A supervised entity may be found guilty of negligent money laundering, for example,

if it assists or counsels a customer in connection with investment activities, the establishment of fictitious companies, or the transfer of funds, even though there are weighty reasons to be suspicious of that customer's business.

These instructions have been issued in accordance with the Act on Preventing and Clearing Money Laundering and Terrorist Financing (AML Act), which became effective on August 1, 2008. The Act is supplemented by Government Decree 616/2008, Government Decree 1204/2011, Decision by the Ministry of the Interior 156/2010 and Government Decision 1022/2010. The AML Act transposed into Finnish legislation the requirements of the EU's Third Anti-Money Laundering Directive and its complementary European Commission Directive.

Principal: The FIU is supervised by the National Bureau of Investigation.
Year of establishment: 2008.
Banking authority: The Finnish Financial Supervisory Authority.
Securities authority: The Finnish Financial Supervisory Authority.
Insurance authority: The Finnish Financial Supervisory Authority.

Country: France.
FIU: Financial Intelligence Unit for Fighting Money Laundering and Terrorist Financing (Tracfin).
Institutional model: Financial administrative.
Main features: Tracfin came into being via the decree of May 9, 1990; this decree created a unit with the remit of processing intelligence and taking action against illicit financial networks.

It was legalized by the Act of July 12, 1990, which was voted following the adoption of the 40 recommendations of the Financial Action Task Force on Money Laundering (FATF). Initially, Tracfin was attached to the Customs and Excise General Directorate. In 2006, Tracfin was designated a service with national scope, and placed under the twin authority of the Ministry for the Economy, Industry and Employment and the Ministry for the Budget, Public Accounts and State Reform. This transformation was part of changes to the French anti-money laundering structure, which was driven by an ever-increasing number of suspicious transaction reports (STRs) submitted by the declaring professions.

An operational unit

Tracfin is an operational unit that is the sole collection point for STRs. Based on these reports, or on intelligence received from its foreign counterparts, Tracfin gathers, analyzes, supplements and makes use of any and all intelligence in order to establish the criminal origin or destination of a transaction. When the investigation reveals facts that may constitute an offense punishable by more than a year's imprisonment, Tracfin must refer the case to the public prosecutor's office. The unit may also supply information to various public offices, including, under the Order of January 30, 2009, French intelligence services and the tax authorities. To successfully carry out its investigations, Tracfin has a right to communication, which permits the Unit to question all of the reporting professions and public entities. Tracfin may set deadlines for obtaining answers, and the right can

be exercised on site, as need be. Tracfin can also exercise a right of opposition, with respect to transactions, for a two-day period, which may be extended by a judge.

Principal: The Tracfin depends on the Ministry for the Economy, Industry and Employment and the Ministry for the Budget, Public Accounts and Reform.

Year of establishment: 1990.

Banking authority: Prudential Supervisory Authority.

Securities authority: The Financial Market Authority.

Insurance authority: Prudential Supervisory Authority.

Country: Georgia.

FIU: Financial Monitoring Service (FMS) and other agencies (Central Bank, Ministry of Finance, Ministry of Justice, LEPL Insurance State Supervision Service and Accounting authority).

Institutional model: Hybrid.

Main features: *The* Financial Monitoring Service of Georgia (FMS) was created in 2003 on the basis of the law of Georgia "On Facilitating the Prevention of Illicit Income Legalization" (June 6, 2003) and the Regulation of the Financial Monitoring Service of Georgia – Legal Entity of Public Law. Its main objective is to facilitate the prevention of illicit income legalization and terrorism financing. According to the AML/CFT Law of Georgia, transactions that are subject to monitoring include cash as well as non-cash settlements, if the amount of the transaction or the series of transactions exceeds GEL 30,000 (or its equivalent in another currency) and/or the transaction is suspicious regardless of its amount. The FMS is a member of MONEYVAL (Committee of Experts on the Evaluation of Anti-Money Laundering Measures and the Financing of Terrorism) and actively cooperates with international organizations and foreign FIUs. In 2004 it became a member of the Egmont Group, which connects 131 analogue authorities around the world. In this way, the FMS provides a rapid exchange of information with competent authorities of different countries.

Principal: FMS is within the Central Bank.

Year of establishment: 2003.

Banking authority: National Bank of Georgia.

Securities authority: National Bank of Georgia.

Insurance authority: National Bank of Georgia.

Country: Germany.

FIU: Financial Intelligence Unit.

Institutional model: Law enforcement.

Main features: The strategy to check money flows for their rightful origin on an incident-related basis, in order to identify illegal assets, has been implemented by almost every country – including Germany – by establishing a special FIU. With the amendment of the German Money Laundering Act (MLA), the legal basis for the establishment of the FIU in Germany as an organizational (police) unit within the Bundeskriminalamt was laid on August 15, 2002. Being aware of the fact that money laundering in most cases is an international offense that virtually transgresses borders again and again, the FIU in Germany has been, and is, strongly committed to working beyond national borders as well.

Principal: The FIU is a department within the Federal Criminal Police Office.
Year of establishment: 2002.
Banking authority: Deutsche Bundesbank and BAFIN.
Securities authority: BAFIN.
Insurance authority: BAFIN.

Country: Greece.
FIU: Anti-Money Laundering, Counter-Terrorist Financing and Source of Funds Investigation Authority.
Institutional model: Hybrid.
Main features: As a result of Law 3932/2011, which amended Law 3691/2008, the Anti-Money Laundering, Counter-Terrorist Financing Commission was renamed the Anti-Money Laundering, Counter-Terrorist Financing and Source of Funds Investigation Authority.

The Authority is a national unit which aims to fight the legalization of proceeds from criminal activities and terrorist financing and to assist in maintaining the security and sustainability of fiscal and financing stability. Its mission, according to L.3691/2008, as amended by L.3932/2011, is the collection, the investigation and the analysis of suspicious transactions reports (STRs). These reports are forwarded to the Authority by legal entities and natural persons who are under special obligation to do so. It also deals with all other information that is related to the crimes of money laundering and the financing of terrorism, along with other situations which require investigation into the source of the funds used in a transaction. The Authority has been restructured into three (3) individual units as follows:

- The financial intelligence unit (FIU). In addition to the President, the FIU comprises seven board members. At the end of each year, the FIU submits an activities report to the Institutions and Transparency Committee of the Hellenic Parliament and the Ministers of Finance, Justice, Transparency & Human Rights and Citizen Protection.
- The Financial Sanctions Unit (FSU). In addition to the President, the FSU comprises two board members. At the end of every year, the FSU submits an activities report to the Ministers of Foreign Affairs, Justice, Transparency & Human Rights and Citizen Protection.
- The Source of Funds Investigation Unit (SFIU). In addition to the President, the SFIU comprises two board members. At the end of every year, the SFIU submits an activities report to the Institutions and Transparency Committee of the Hellenic Parliament and the Ministers of Finance and Justice, Transparency & Human Rights.
- The President is an acting Public Prosecutor to the Supreme Court, appointed by a Decision of the Supreme Judicial Council and serves on a full-time basis.

Principal: The authority depends on various institutions: Parliament, the Ministry of Finance, Justice, Transparency & Human Rights and Citizen Protection, Ministry of Foreign Affairs.
Year of establishment: 2008.

Banking authority: Bank of Greece.
Securities authority: Hellenic Capital Market Commission.
Insurance authority: Bank of Greece.

Country: Hong Kong.
FIU: Joint Financial Intelligence Unit (JFIU).
Institutional model: Law enforcement.
Main features: JFIU stands for the Joint Financial Intelligence Unit. The JFIU was set up in 1989 to receive reports about suspicious financial activity made under the provisions of the Drug Trafficking (Recovery of Proceeds) Ordinance (DTROP) and, since 1995, the Organized and Serious Crimes Ordinance (OSCO). Since the enactment of the United Nations (Anti-Terrorism Measures) Ordinance (UNATM) in 2002, the JFIU has also received suspicious transaction reports (STRs) related to terrorist property. The JFIU, as the name implies, is jointly run by the staff of the Hong Kong Police Force and the Hong Kong Customs & Excise Department. The JFIU manages the administration of STRs for Hong Kong and its role is to receive, analyze and STRs and to disseminate them to the appropriate investigative unit.
Principal: The JFIU is supervised by the Hong Kong Police Force and the Hong Kong Customs & Excise Department.
Year of establishment: 1989.
Banking authority: Hong Kong Monetary Authority.
Securities authority: Securities and Futures Commission.
Insurance authority: Office of the Commissioner of Insurance.
Country: Hungary.

FIU: Hungarian Financial Intelligence Unit (HFIU).
Institutional model: Law enforcement.
Main features: On the basis of the AML/CFT Act, the HFIU carries out AML/CFT supervision of service providers that have no state and professional supervision. Service providers under HFIU supervision are:

- real estate agents;
- accountants;
- tax advisors, tax consultants.

The HFIU, as supervisory body, ensures the compliance of service providers with the provisions of the AML/CFT Act through its supervisory activity. The HFIU carries out its supervisory functions in a nationwide jurisdiction, in accordance with Act CXL of 2004 on the General Rules of Administrative Proceedings and Services (APS Act).
Principal: The HFIU is a department within the National Tax and Customs Administration (NTCA).
Year of establishment: 2004.
Banking authority: Hungarian Financial Supervisory Authority.
Securities authority: Hungarian Financial Supervisory Authority.
Insurance authority: Hungarian Financial Supervisory Authority.

Country: Iceland.
FIU: Ríkisssaksóknari (RLS).
Institutional model: Law Enforcement.
Main features: The FIU, which is a member of the Egmont Group, operates within the Economic Crime Unit, which, in turn, comes under the jurisdiction of the National Commissioner of the Icelandic Police. It performs the basic function of receiving, processing and disseminating suspicious transaction reports (STRs). The Icelandic authorities have adopted Act No. 64/2006 to harmonize their domestic AML framework with the Third EU Money Laundering Directive. The new legislation was passed by the Parliament on June 2, 2006 and came into force on June 22, 2006. It expands upon previous AML requirements from 1993 and 1999 and includes stronger client due diligence measures, comprehensive record-keeping measures and a clear obligation to report suspicious transactions related to terrorist financing. Amendments were made to the Anti-Money Laundering Act No. 64/2006 in 2008 (Act No. 77/2008) due to remarks in the FATF's report on Iceland, dated October 13, 2006. Shortly after Act No. 77/2008 came into force, the Icelandic Government received comments from the ESA (EFTA Surveillance Authority) owing to the adoption of directive 2005/60/EC. The response to this was to make further amendments to the Anti-Money Laundering Act No. 64/2006 in 2009 (Act No. 116/2009).
Principal: The RLS is a part of Economic Crime Unit within the National Commissioner of Police.
Year of establishment: 2006.
Banking authority: Financial Supervisory Authority (FME).
Securities authority: Financial Supervisory Authority (FME).
Insurance authority: Financial Supervisory Authority (FME).

Country: India.
FIU: Financial Intelligence Unit (FIU).
Institutional model: Financial administrative.
Main features: The Financial Intelligence Unit in India (FIU-IND) was set up by the Government of India on November 18, 2004. As the central national agency, it is responsible for receiving, processing, analyzing and disseminating information that relates to suspect financial transactions. The FIU-IND is also responsible for coordinating and strengthening the work of national and international intelligence, investigation and enforcement agencies, so that they may contribute to global efforts to combat money laundering and related crimes. The FIU-IND is an independent body that reports directly to the Economic Intelligence Council (EIC), which is headed by the Finance Minister.
Principal: FIU is a body within the Ministry of Finance.
Year of establishment: 2004.
Banking authority: Reserve Bank of India.
Securities authority: Securities and Exchange Board of India.
Insurance authority: Insurance Regulatory and Development Authority.

Country: Ireland.
FIU: Financial Intelligence Unit.
Institutional model: Law enforcement.

Main features: The Garda Bureau of Fraud Investigation (GBFI) is a specialist bureau that investigates fraud-related crime that involves complex issues of criminal law or procedure. It is headed by a Detective Chief Superintendent who reports to the Assistant Commissioner of the National Support Services. The Bureau investigates serious and complex cases of commercial fraud, check and payment card fraud, counterfeit currency, money laundering, computer crime and breaches of the Companies Act and the Competition Act. The Bureau is divided into five operational units with a Detective Inspector allocated to each specialist area:

- Fraud Assessment Unit and Commercial Fraud Investigation Unit.
- Money Laundering Investigation Unit, which includes the FIU.
- Check, Payment Card, Counterfeit Currency and Advance Fee Fraud Investigation Unit.
- Computer Crime Investigation Unit.
- Corporate Enforcement – Detectives from GBFI are seconded to the Office of the Director of Corporate Enforcement (ODCE).

Principal: FIU is within the Garda Bureau of Fraud Investigation (GBFI).
Year of establishment: 1996.
Banking authority: Central Bank of Ireland.
Securities authority: Central Bank of Ireland.
Insurance authority: Central Bank of Ireland.

Country: Israel.
FIU: Israel Money Laundering Prohibition Authority (IMPA).
Institutional model: Administrative.
Main features: IMPA was created as Israel's FIU in answer to the urgent need to fight money laundering and the financing of terrorism. IMPA's mandate is to provide the competent authorities, both in Israel and abroad, with information regarding suspicious money laundering activities, and thus aid and facilitate the investigation of money laundering and terror financing offenses.
Its mandate is to:

- Receive and collect currency transaction reports and unusual reports from financial institutions, as well as additional information relevant to money laundering and the financing of terrorism.
- Manage, analyze and secure a database, which accumulates reports from the institutions required to do so under the law.
- Analyze and assess the information received.
- Disseminate information to the Israeli police upon suspicion of money laundering activities.
- Disseminate information to the Israeli Security Service for the purpose of prevention and investigation of activities of terrorist organizations or of acts against national security.
- Ensure that the information received is protected from unauthorized disclosure.

- Disseminate information to foreign FlUs for the purposes of implementing Israel's law, as part of the international fight against money laundering and the financing of terrorism.

IMPA strives to ensure the existence of an adequate anti-money laundering regime in Israel by strengthening the flow of financial intelligence information to the competent authorities. It sees itself as a leading force in an interagency effort to effectively participate in the global struggle against money laundering and the financing of terrorism.

Principal: The IMPA is a unit within the Ministry of Justice.
Year of establishment: 2002.
Banking authority: Bank of Israel.
Securities authority: The Israel Securities Authority.
Insurance authority: Capital Markets, Insurance and Savings Division.

Country: Italy.
FIU: Financial Intelligence Unit (former Foreign Exchange Office).
Institutional model: Financial administrative.
Main features: The international standards for preventing and combating money laundering and the financing of terrorism encourage the institution in each country of an FIU. The FIU is charged with receiving and analyzing reports on suspicious transactions and other information related to money laundering, the associated predicate offenses and the financing of terrorism, and with transmitting the results of its analyses to the competent bodies for subsequent investigation.

The FIU for Italy was established at the Bank of Italy on January 1, 2008 pursuant to Legislative Decree 231/2007, which was issued in implementation of Directive 2005/60/EC (the Third Anti-Money Laundering Directive). The decree abolished the Italian Foreign Exchange Office (UIC), which was the entity that had previously carried out the tasks of the FIU.

The FIU performs its functions autonomously and independently by using financial, human and technical resources assigned by the Bank of Italy. The organization and activity of the FIU are governed by a Bank of Italy regulation. In order to prevent and combat money laundering and the financing of terrorism, the FIU carries out financial analyses of suspicious transactions that have been reported by persons who are subject by law to do so (financial intermediaries, non-financial enterprises and professionals) and examines any other fact that could be related to money laundering or the financing of terrorism. To this end, it collects additional data from reporting parties – including by means of inspections – cooperates with foreign FIUs and, within Italy, exchanges information and cooperates with financial supervisory authorities, the judicial authorities and other competent authorities, and law enforcement bodies. In addition the FIU:

- analyzes and studies financial flows with a view to detecting and preventing money laundering or the financing of terrorism;
- conducts analyses and studies of individual anomalies relating to possible criminal activities of this kind, specific sectors of the economy considered to be at risk, categories of payment instruments and specific local economies;

- carries out statistical analyses of the aggregate data transmitted on a monthly basis by banks and other intermediaries, with a view to detecting possible instances of money laundering or the financing of terrorism within certain territorial zones;
- collaborates with the competent authorities in the issuing of secondary legislation; develops anomaly indicators, subsequently issued by the various competent authorities; elaborates models and patterns of anomalous conduct with reference to specific lines of business or phenomena relating to possible money laundering or terrorist financing; and issues instructions on the data and information required in suspicious transaction reports;
- carries out controls, including inspections, and initiates sanction procedures in matters within its sphere of competence;
- participates in the work of various European and international organizations engaged in preventing and combating money laundering, the financing of terrorism and the proliferation of weapons of mass destruction (the Financial Action Task Force, the Egmont Group, the European Union's FIU Platform, the Committee for the Prevention of Money Laundering and Terrorist Financing).

Principal: The Italian FIU is a department within the Central Bank of Italy.
Year of establishment: 2007.
Banking authority: Bank of Italy.
Securities authority: CONSOB.
Insurance authority: IVASS.

Country: Jamaica.
FIU: Financial Investigations Division (FID).
Institutional model: Financial administrative.
Main features: The Financial Investigations Division (FID) is a division within the Ministry of Finance and Public Service which was established on December 16, 2002. The FID has evolved with time and its objectives now focus on the need to deter the use of Jamaica's economy for money laundering and other financial crimes, thereby contributing to a stable financial sector and an investor-friendly environment. Since the passage of the Proceeds of Crimes Act, 2007 the FID has had increased responsibility for granting "consent to perform a prohibited act" to financial institutions. The main objectives of the Division are to:

- Investigate allegations of money laundering, financial crimes and corruption.
- Detect, deter and aid the prosecution of offenses committed under the various acts dealing with financial crimes, by reducing the actual and expected profits that would evolve from such corruptive practices.
- Collaborate with overseas bodies in fighting transnational crimes under the Mutual Assistance (Criminal Matters) Act.

Mission

To deter, investigate and prosecute financial crimes.

The FID consists of five units:

1. Financial Intelligence: there are two sections in this unit: intelligence officers and financial analysts. The intelligence officers garner data from all sources and convert it to useful information to assist with the work of the investigative units. The financial analysts are specially trained to identify trends in financial transactions from reports filed under the Money Laundering Act.
2. Financial Crimes Investigations (FCI): this unit investigates serious financial crimes such as money laundering and any matter that affects the stability of the economy and the financial sector. The aim of the FCI is to identify assets gained from the perpetration of criminal activities with a view to depriving the individual of their ill-gotten gains. The FCI provides investigative support to the police, specifically the Narcotics Division, Customs, Inland Revenue Department, Overseas Law Enforcement Agencies and the Major Crimes and Counter Narcotics Taskforce. The unit also has responsibility for the management of forfeited and seized assets.
3. Information Technology: this unit provides information technology support for the operation of the division, while providing support to the investigative units in the form of computer forensics and data mining.
4. Planning and Administrative Services: this unit performs all the administrative functions for the Division, including human resource and training matters, facilities management and accounting support.
5. Legal Services: this unit provides legal support and advice on cases being investigated by the Division. They prepare legal documents and review case files before submission to the Director of Public Prosecution/Clerk of Courts.

Principal: The Financial Investigations Division is a department within the Ministry of Finance and Public Service.
Year of establishment: 2002.
Banking authority: Bank of Jamaica.
Securities authority: Financial Services Commission.
Insurance authority: Financial Services Commission.

Country: Japan.
FIU: Japan Financial Intelligence Center (JAFIC).
Institutional model: Law enforcement.
Main features: JAFIC was established within the Organized Crime Department, which is within the Criminal Investigation Bureau of the National Police Agency, on April 1, 2007, when the Act on Prevention of Transfer of Criminal Proceeds came into force. JAFIC is an institution that plays a central role in the enforcement of the said law, mainly by collecting, arranging and analyzing suspicious transaction reports (STRs) that have been filed by specified business operators and disseminating such information to public prosecutors, and so on. JAFIC is in charge of the following tasks, as provided in the Act on Prevention of Transfer of Criminal Proceeds:

- Collection, arrangement, analysis and dissemination of information on suspicious transactions to investigative authorities etc.

- Dissemination of information to foreign FIUs.
- Provision of information and complement of supervisory measures by administrative authorities to ensure that specified business operators take required measures.

JAFIC also plans and examines the legal system with regard to AML/CFT, and various measures such as "the Guideline for Promotion of the Criminal Proceeds Control." It also participates in the discussion of international standards related to AML measures.

It is currently composed of about 90 people, who work under the Director for Prevention of Money Laundering.

Principal: JAFIC operates within the Organized Crime Department, in the Criminal Investigation Bureau of the National Police Agency.

Year of establishment: 2007.

Banking authority: Financial Services Agency.

Securities authority: Financial Services Agency.

Insurance authority: Financial Services Agency.

Country: Kenya.

FIU: Financial Reporting Centre (FRC).

Institutional model: Financial administrative.

Main features: The Financial Reporting Centre (FRC) (Kenya's FIU) was established by Section 21 of Proceeds of Crime and Anti-Money Laundering Act (POCAMLA). It is an independent body with the principal objective of assisting in the identification of the proceeds of crime and combating money laundering.

The other objectives of the FRC are to:

- Make the information collected available to investigating authorities and supervisory bodies, in order to facilitate the administration and enforcement of Kenya's laws.
- Ensure compliance with international standards and best practice in anti-money laundering measures.
- Exchange information on money laundering activities and related offenses with similar bodies in other countries.

Under POCAMLA, the FRC has extensive functions and powers. These include:

- Implementation of a registration system for reporting institutions.
- Receipt and analysis of reports of unusual or suspicious transactions and cash transactions made by reporting entities, as well as cash declaration forms received from border points.
- Dissemination of reports received under the Act to appropriate law enforcement authorities or other supervisory body for further handling.
- Undertaking the inspection and supervision of reporting institutions to ensure compliance with AML/CFT reporting obligations as prescribed in POCAMLA.
- Facilitating the exchange of information on money laundering activities with other financial intelligence units in other countries.

- Formulating policies on anti-money laundering in consultation with the board;
- Developing AML/CFT regulations to provide guidance that will support the implementation of the Act.
- Developing AML/CFT training programs for reporting institutions.
- Compiling of statistics and records.
- Dissemination of information within Kenya or elsewhere, and making recommendations that emerge from any information received.
- Issuing guidelines to reporting institutions and advising the Minister.
- Creating and maintaining a database of all reports of suspicious transactions, related government information, and other materials that the Director may determine to be relevant to the work of the Center.

Principal: The FRC is supervised by the Ministry of Finance.
Year of establishment: 2009.
Banking authority: Central Bank of Kenya.
Securities authority: Capital Markets Authority.
Insurance authority: Insurance Regulatory Authority.

Country: Latvia.
FIU: Office for Prevention of Laundering of Proceeds Derived from Criminal Activity.
Institutional model: Judicial.
Main features: The Latvian FIU receives, registers, processes, compiles, stores and analyzes information on unusual and suspicious transactions and provides this information to pre-trial investigative authorities and the court. Such information may only be utilized for the prevention, detection, pre-trial investigation or adjudication of activities linked to laundering or attempted laundering of criminal proceeds and the financing of terrorism or the respective predicate crime. The information is deemed confidential and it is protected by the law. Its release is subject to strict regulations. To encourage reporting, an exemption from legal liability applies to the persons that have reported unusual or suspicious transactions to the FIU (reporting entities). Failure to report unusual or suspicious transactions can lead to administrative and/or criminal sanctions. Another key responsibility of the FIU is the establishment of channels of communication and coordination with persons subject to AML law, state institutions, law enforcement authorities and foreign counterparts.
Principal: The Public Prosecutor's Office chairs the meetings of the Board of the Office for Prevention of Laundering of Proceeds Derived from Criminal Activity.
Year of establishment: 1997.
Banking authority: Finance and Capital Market Commission.
Securities authority: Finance and Capital Market Commission.
Insurance authority: Finance and Capital Market Commission.

Country: Lithuania.
FIU: Financial Crime Investigation Service.
Institutional model: Law enforcement.
Main features: The Financial Crime Investigation Service ("Service") implements money laundering and terrorist financing prevention measures aimed

at creating an effective national anti-money laundering system and ensures its proper functioning as well as conducting pre-trial investigation of the legalization of the funds and property derived from the criminal activity. The Service is the main state institution responsible for the coordination of cooperation among the institutions related to the implementation of money laundering prevention measures.

The Money Laundering Prevention Division of the Analysis and Prevention Board (MLPD) is the main unit within the Service and is responsible for the prevention and analysis of money laundering and the financing of terrorism. It is the Lithuanian FIU and its responsibilities are as follows:

- Collect and record the information about the monetary operations and transactions of the customer – and about the way that the customer carries out such operations and transactions.
- Accumulate, analyze and publish information that relates to the implementation of measures to prevent money laundering and the financing of terrorism.
- Communicate to law enforcement and other state institutions the information about the monetary operations and transactions carried out by the customer.
- Provide financial institutions and other entities with information on the criteria for identifying possible money laundering and financing of terrorism, and suspicious or unusual monetary operations or transactions.
- Notify financial institutions and other entities – such as law enforcement departments and other state institutions – about the results of the analysis and investigation of their reports on suspicious or unusual monetary operations and transactions, and about the observed indications of possible money laundering and financing of terrorism or other related violations.
- Evaluate legal acts and submit proposals for their improvement following the international standards and recommendations.

Principal: The Financial Crime Investigation Service is responsible to the Ministry of the Interior.
Year of establishment: 2010.
Banking authority: Bank of Lithuania.
Securities authority: Bank of Lithuania.
Insurance authority: Bank of Lithuania.

Country: Luxembourg.
FIU: Cellule de renseignement financier (CRF).
Institutional model: Law enforcement.
Main features: N/A (website only available in French).
Principal: The CRF principal is the Public Prosecutor's Office.
Year of establishment: 2004.
Banking authority: Commission de Surveillance du Secteur Financier (CSSF).
Securities authority: Commission de Surveillance du Secteur Financier (CSSF).
Insurance authority: Insurance Commission.

Country: Macedonia.
FIU: Money Laundering Prevention Directorate (MLPD).
Institutional model: Hybrid.
Main features: The MLPD is based on Norway's model.
Principal: N/A.
Year of establishment: 2013.
Banking authority: National Bank of the Republic of Macedonia.
Securities authority: Securities and Exchange Commission of the Republic of Macedonia.
Insurance authority: Insurance Supervision Agency.

Country: Malaysia.
FIU: Unit Perisikan Kewangan (UPK).
Institutional model: Financial Administrative.
Main features: N/A.
Principal: The UPK is a division of the Central Bank of Malaysia.
Year of establishment: 2002.
Banking authority: Bank Negara Malaysia.
Securities authority: Securities Commission Malaysia.
Insurance authority: Bank Negara Malaysia.

Country: Malta.
FIU: Financial Intelligence Analysis Unit (FIAU).
Institutional model: Financial administrative.
Main features: The Financial Intelligence Analysis Unit is the central national agency in Malta. It is responsible for the collection, collation, processing, analysis and dissemination of information, with a view to combating money laundering and the funding of terrorism.

The Unit became operational on the October 1, 2002 when it was established by virtue of Legal Notice 297 of 2002, which brought into force the comprehensive amendments to the Prevention of Money Laundering Act that were enacted by means of Act XXXI of 2001. Though it was set up as an agency within the ministry responsible for finance, the Unit has a separate judicial personality and operates autonomously from its own offices with its own staff.

The responsibilities related to the governance of the Unit are divided among the Board of Governors and the Director, with the Board establishing the policy and the Director being tasked with the execution of that policy. The Director is also responsible for carrying out all other functions of the Unit that are not attributed to the Board by the Prevention of Money Laundering Act. The Director is assisted by permanent staff, who operate within four distinct sections that are responsible for financial analysis, compliance, legal and international relations, and administration and IT.

Principal: Mixed Governance: Government and Central Bank. Out of four members of the Board of Governors, one is appointed by the Central Bank of Malta. Other members are appointed by the government.
Year of establishment: 1994.
Banking authority: Malta Financial Services Authority.
Securities authority: Malta Financial Services Authority.
Insurance authority: Malta Financial Services Authority.

Country: Mauritius.
FIU: Financial Intelligence Unit (FIU).
Institutional model: Financial Administrative.
Main features: The FIU was established under Section 9 of the Financial Intelligence and Anti-Money Laundering Act in August 2002. It is the central Mauritian agency for the request, receipt, analysis and dissemination of financial information to relevant authorities regarding suspected proceeds of crime and alleged money laundering offenses, as well as the financing of any activities or transactions related to terrorism.

The FIU also issues guidelines to banks, financial institutions, cash dealers and members of the relevant professions on the manner in which a suspicious transaction report should be made. There is cooperation between the FIU and domestic investigatory or supervisory authorities and exchange of information with overseas FIUs or comparable bodies.

Furthermore, the FIU is assigned to conduct research on the causes and consequences of money laundering, and the financing of terrorism, through participation in projects.

The FIU is a member of the National Committee on AML/CFT and is involved in instruction and raising awareness on AML/CFT issues.

Principal: The Board of the FIU is appointed by the President on the recommendation of the Prime Minister and in consultation with the Leader of the Opposition.
Year of establishment: 2002.
Banking authority: Bank of Mauritius.
Securities authority: Financial Services Commission.
Insurance authority: Financial Services Commission.

Country: Mexico.
FIU: Financial Intelligence Unit (FIU).
Institutional model: Financial administrative.
Main features: The Financial Intelligence Unit of the Ministry of Finance and Public Credit (SHCP) is a national central governmental unit responsible for receiving, analyzing and disseminating information concerning transactions suspected of being related to money laundering or the financing of terrorism (ML/TF). Moreover, the FIU is responsible for the implementation of mechanisms established in the Federal Criminal Code to prevent, detect, and deter criminal activities, such as:

i. transactions involving resources illegally obtained;
ii. national terrorism and its funding; and
iii. international terrorism and its funding.

Principal: The FIU is a unit within the Ministry of Finance and Public Credit.
Year of establishment: 2004.
Banking authority: National Banking and Securities Commission.
Securities authority: National Banking and Securities Commission.
Insurance authority: National Commission of Insurance and Bonds.

Country: Netherlands.
FIU: Financial Intelligence Unit (FIU).
Institutional model: Law enforcement.
Main features: The FIU-Netherlands was created in 2006 as the lawful predecessor of the Reporting Point for Unusual Transactions (MOT) and is currently an independent and autonomous entity within the Department of International Police Information (Dienst IPOL) of the Netherlands Police Agency (KLPD).

It is FIU-Netherlands' mission to contribute, nationally and internationally, to strengthening the quality of investigation, prosecution and prevention of crime – in particular, money laundering the financing of terrorism – in order to guarantee the integrity of the (Dutch) financial system and maintain public trust in financial enterprises and institutions. This mission is realized by:

- providing (special) investigative, intelligence and security services with specific, up-to-date and enriched transaction information and analyses available within FIU-Netherlands;
- informing, among others, reporting groups and supervisory bodies about "upcoming" trends, methods, techniques and typologies;
- providing expertise;
- fostering international collaboration with and between other FlUs and investigative services;
- developing an up-to-date/relevant network of business relationships, as far as persons, ideas and information are concerned (and/or maintaining an active account management).

FIU-Netherlands wants to lead the way as far as making high-quality products (such as transaction information, and the financial analyses and expertise based on this information) available to the relevant partners in the chain in a timely fashion, with a view to supporting the national and international fight against crime, particularly money laundering and terrorist financing.

Principal: The FIU is an entity within the Department of International Police Information (Dienst IPOL) of the Netherlands Police Agency (KLPD).
Year of establishment: 2006.
Banking authority: The Netherlands Bank.
Securities authority: The Netherlands Bank.
Insurance authority: The Netherlands Bank.

Country: New Zealand.
FIU: NZ Police Financial Intelligence Unit.
Institutional model: Law enforcement.
Main features: The FIU, based at Police National Headquarters in Wellington, helps with the detection and investigation of money laundering, the financing of terrorism and other serious offenses. It collects and analyzes information about suspicious financial activity supplied by reporting entities and other information sources. The results are shared and used to help all government agencies that have a law enforcement role, financial sector supervisors and other domestic and international partner agencies.
Principal: The FIU is a unity within the NZ Police.

Year of establishment: 2009.
Banking authority: Reserve Bank of New Zealand.
Securities authority: Financial Markets Authority.
Insurance authority: Reserve Bank of New Zealand.

Country: Norway.
FIU: The Norwegian National Authority for Investigation and Prosecution of Economic and Environmental Crime (ØKOKRIM).
Institutional model: Hybrid.
Main features: The Norwegian National Authority for Investigation and Prosecution of Economic and Environmental Crime (ØKOKRIM) is the central unit for investigation and prosecution of economic and environmental crime, and the main source of specialist skills for the police and the prosecuting authorities in their combat against crime of this kind. ØKOKRIM was established in 1989, and is both a police specialist agency and a public prosecutor's office with national authority.
Goals include:

- to uncover, investigate, prosecute and bring to trial its own cases;
- to assist the national and international police and prosecuting authorities;
- to raise the level of expertise of the police and the prosecuting authorities and to engage in the provision of information;
- to engage in criminal intelligence work, dealing in particular with reports of suspicious transactions;
- to act as an advisory body to the central authorities;
- to participate in international cooperation.

ØKOKRIM's objective is to be the leading organization in the combat against economic and environmental crime. ØKOKRIM strives to create the best possible general deterrence by investigating and prosecuting criminal cases and by collecting and analyzing financial intelligence.
One of ØKOKRIM's key objectives is general deterrence. Through our work in specific criminal cases, we warn the general public that violation of the rules within our jurisdiction could result in punishment. The majority of ØKOKRIM's resources are devoted to specific criminal cases.
Most cases that fall under ØKOKRIM's mandate are handled by the police districts. ØKOKRIM investigates and brings to trial the larger, more complex cases and/or cases of legal principle. Several of these cases extend beyond its national borders. The senior management at ØKOKRIM decide which cases will be investigated.
In 2010, ØKOKRIM had twelve teams, each team holding prime responsibility for a specific area. Most of the teams are tasked with investigating and prosecuting their own criminal cases, with the exception of the Assistance Team, which assists the police districts, and the financial intelligence unit (FIU), which receives and handles intelligence.
The teams are composed of special investigators, some of the investigators have law enforcement experience, while others have financial and environmental experience. Most of the teams are headed by a senior public prosecutor, and they also have a police prosecutor.

ØKOKRIM has an executive group comprising, in addition to the Director and the Deputy Director, seven heads of departments. These heads represent the investigation teams handling economic and environmental crime, the FIU, the IT Department and the Administration Department.

Principal: The ØKOKRIM is supervised by the Ministry of Finance and Justice.

Year of establishment: 1989.

Banking authority: The Financial Supervisory Authority of Norway.

Securities authority: The Financial Supervisory Authority of Norway.

Insurance authority: The Financial Supervisory Authority of Norway.

Country: Peru.

FIU: Financial Intelligence Unit (FIU).

Institutional model: Financial administrative.

Main features: The FIU is in charge of receiving, analyzing and elaborating on information with regard to the fight against money laundering and the financing of terrorism. At the same time, the FIU helps financial institutions to implement proper mechanisms with regard to the fight against money laundering and the financing of terrorism.. The FIU was established by Law No. 27693, April 2002 and emended by Law Nos 28009 and 28306. Law No. 29038 unified the FIU with the Unidad Especializada a la Superintendencia de Banca, Seguros y Administradoras Privadas de Fondos de Pensiones.

Principal: The FIU is an agency within the Ministry of Finance.

Year of establishment: 2004.

Banking authority: Superintendence of Banking, Insurance and Private Pension Funds Administrators.

Securities authority: Superintendency of Securities Markets.

Insurance authority: Superintendence of Banking, Insurance and Private Pension Funds Administrators.

Country: Philippines.

FIU: Anti-Money Laundering Council (AMLC).

Institutional model: Financial administrative.

Main features: The AMLC aims to be a world-class financial intelligence unit that will help establish and maintain an internationally compliant and effective anti-money laundering regime which will provide the Filipino people with a sound, dynamic and strong financial system in an environment conducive to the promotion of social justice, political stability and sustainable economic growth. Towards this goal, the AMLC, without fear or favor, investigates and implements the prosecution of money laundering offenses.

Mission

- To protect and preserve the integrity and confidentiality of bank accounts.
- To ensure that the Philippines shall not be used as a money laundering site for the proceeds of any unlawful activity.
- To extend cooperation in transnational investigation and prosecution of persons involved in money laundering activities wherever committed.

The Anti-Money Laundering Council is composed of the Governor of the Bangko Sentral ng Pilipinas (BSP) as Chairman, the Commissioner of the Insurance

Commission (IC) and the Chairman of the Securities and Exchange Commission (SEC) as members. It acts unanimously in the discharge of its functions. The AMLC is assisted by a Secretariat, which is headed by an Executive Director and consists of five units; the Compliance and Investigation Group (CIG), the Legal Evaluation Group (LEG), the Information Management and Analysis Group (IMAG), Technical Services Staff (TSS) and the Administrative and Financial Services Division (AFSD).

The functions include:

- Require and receive opaque or suspicious transaction reports from covered institutions (banks and all other institutions and their subsidiaries and affiliates supervised or regulated by the BSP; insurance companies and all other institutions supervised or regulated by the IC; and securities dealers and other entities supervised or regulated by the SEC).
- Issue orders addressed to the appropriate supervising authority (the BSP, IC or SEC), or the covered institution, to determine the true identity of the owner of any monetary instrument/property subject to a opaque or suspicious transaction report or request for assistance from a foreign state, or believed by the AMLC – on the basis of substantial evidence – to represent, involve, or relate to the proceeds of an unlawful activity.
- Institute civil forfeiture proceedings and all other remedial proceedings through the Office of the Solicitor General.
- Implement the filing of complaints with the Department of Justice or the Ombudsman for the prosecution of money laundering offenses.
- Investigate suspicious transactions and opaque transactions deemed suspicious after an investigation by AMLC, money laundering activities, and other violations, as defined in the AMLA.
- Apply before the Court of Appeals, ex parte, for the freezing of any monetary instrument/property alleged to be proceeds of any unlawful activity as defined in the AMLA.
- Implement such measures as may be necessary and justified to counteract money laundering.
- Receive and take action in respect of any request for assistance from foreign states in their own anti-money laundering operations.
- Develop educational programs on the pernicious effects of money laundering, the methods and techniques used in money laundering, the viable means of preventing money laundering and the effective ways of prosecuting and punishing offenders.
- Enlist the assistance of any branch, department, bureau, office, agency or instrumentality of the government, including government-owned and -controlled corporations, in undertaking any and all anti-money laundering operations, which may include the use of its personnel, facilities and resources for the more resolute prevention, detection and investigation of money laundering offenses and the prosecution of offenders.
- Impose administrative sanctions for the violation of laws, rules, regulations and orders and resolutions issued pursuant thereto.
- Inquire or examine any particular deposit or investment, including related accounts, with any banking institution or non-bank financial institution upon

> the order of any court, based on an ex parte application in cases of violation of the AMLA, as specified, when it has been established that there is probable reason that the deposits or investments, including related accounts involved, are associated with an unlawful activity or a money laundering offense under the AMLA, as specified.

Principal: The AMLC is supervised by the Central Bank of Philippines.
Year of establishment: 2001.
Banking authority: Central Bank of Philippines.
Securities authority: Securities and Exchange Commission.
Insurance authority: Insurance Commission.

Country: Poland.
FIU: General Inspector of Financial Information (GIFI).
Institutional model: Financial administrative.
Main features: At the heart of the national system of counteracting money laundering and the financing of terrorism is General Inspector of Financial Information (the GIFI). The GIFI complies with the Act of November 16, 2000 on counteracting money laundering and terrorism financing, appointed and dismissed by the Prime Minister at the request of the minister competent for financial institutions (OJ 2010, No. 46 item 276 with amendments). Following the Act, the GIFI is ranked as an undersecretary of state in the Ministry of Finance.

In the performance of its tasks, the GIFI is supported by the Department of Financial Information of the Ministry of Finance, which acts as the Polish Financial Intelligence Unit (PFIU). The PFIU describes itself in this way:

> "Financial intelligence unit (hereinafter referred to as 'FIU') means a central, national agency responsible for receiving (and, as permitted, requesting), analysing and disseminating to the competent authorities, disclosures of financial information:
>
> i) concerning suspected proceeds and potential financing of terrorism, or
> ii) required by national legislation or regulation,
> in order to combat money laundering and financing of terrorism."

The GIFI works in accordance with Article 1 letter f) of the Council of Europe Convention on Laundering, Search, Seizure and Confiscation of the Proceeds from Crime and on the Financing of Terrorism (OJ 2008, No. 165 item 1028).

The system of combating money laundering and the financing of terrorism in Poland consists of:

- the GIFI;
- obligated institutions (inter alia credit and financial institutions – including banks, cooperative savings and credit unions, investment funds, investment fund associations, life insurance companies, factoring and leasing companies, payment institutions; legal professionals – notaries public, lawyers and legal advisors, certified auditors and tax advisors, non-profit organizations; foundations, associations with a corporate personality and those receiving payments in cash of the total value equal to or exceeding the equivalent of 15,000 euro; property value intermediaries – auction houses, exchange offices, pawnshops,

second-hand shops, real estate agencies, Polish Post, and so on. The complete list of the obligated institutions is prescribed in Article 2 (1) of the Act);
- cooperating units (central administration and local government authorities and other state organizational units, also the National Bank of Poland, the Commission for Banking Supervision and Supreme Chamber of Control – Article 2 (8) of the Act).

Obligated institutions and cooperating units inform the GIFI about suspicious transactions or suspicious activity. The GIFI, which operates within the Ministry of Finance, verifies the reported cases of suspected money laundering and financing of terrorism on the grounds of information gathered from obligated institutions, cooperating units and foreign financial intelligence units. In the case of justified suspicion of money laundering or the financing of terrorism, the information is forwarded to the Prosecutor's Office which, in cooperation with the law enforcement authorities, undertakes actions aiming at completing the indictment against the suspects.

The Prosecutor's Office and law enforcement authorities advise the GIFI on all cases in which information is received that indicates suspected crimes of money laundering or the financing of terrorism, initiation and completion of proceedings on money laundering or terrorism financing crime, presentation of charges relating to those crimes (also when the proceedings were initiated on information from other resources than the GIFI/PFIU).

The authorized entities – mainly the prosecutor's office and law enforcement agencies – use the GIFI's data about the transactions (gaining information via written request or on the GIFI's own initiative). On account of the transnational dimension of money laundering and the financing of terrorism, the GIFI exchanges information with foreign financial intelligence units. The exchange is effected either on the basis of bilateral agreements concluded between the GIFI and its foreign counterparts or on the basis of Council Decision 2000/642/JHA concerning arrangements for cooperation between financial intelligence units in respect of exchanging information (OJ L 271/4 of October 24, 2000, p. 4). The effectiveness of the system is reinforced by control of the performance of tasks resulting from the Act of November 16, 2000 on counteracting money laundering and the financing of terrorism. The control primarily consists of checking whether individual obligated institutions are adequately prepared to combat money laundering. It is exercised by the GIFI and other authorities that supervising the obligated institutions.

Principal: The GIFI is a department of the Ministry of Finance.
Year of establishment: 2000.
Banking authority: Polish Financial Supervision Authority.
Securities authority: Polish Financial Supervision Authority.
Insurance authority: Polish Financial Supervision Authority.

Country: Portugal.
FIU: Financial Information Unit (FIU).
Institutional model: Law enforcement.
Main features: Portugal has a comprehensive AML regime that criminalizes the laundering of proceeds of serious offenses, including terrorism, arms trafficking, kidnapping and corruption. Financial and non-financial institutions have a

mandatory requirement to report all suspicious transactions to the public prosecutor, regardless of threshold amount. All financial institutions, including insurance companies, must identify their customers, maintain records for a minimum of ten years and demand written proof from customers regarding the origin and beneficiary of transactions that exceed 12,500 euros. Non-financial institutions, such as casinos, property dealers, lotteries and dealers in high-value assets, must also identify customers engaging in large transactions, maintain records and report suspicious activities to the Office of the Public Prosecutor. Portugal's FIU, known as the Financial Information Unit, or Unidade de Informação Financeira (UIF), was established in 2002 and operates independently as a department of the Portuguese Judicial Police (Polícia Judiciária). At the national level, the UIF is responsible for gathering, centralizing, processing, and publishing information pertaining to investigations of money laundering and tax crimes. It also facilitates cooperation and coordination with other judicial and supervising authorities. At the international level, the UIF coordinates with other FIUs. The UIF has policing duties but no regulatory authority.

Principal: The FIU is a department within the Portuguese Judicial Police.

Year of establishment: 2002.

Banking authority: Bank of Portugal.

Securities authority: Portuguese Securities Market Commission.

Insurance authority: Portuguese Insurance and Pensions Funds Supervisory Authority.

Country: Romania.

FIU: National Office for Prevention and Control of Money Laundering.

Institutional model: Hybrid.

Main features: The National Office for Prevention and Control of Money Laundering is the Romanian FIU and is based on the administrative model. It has a leadership role in drafting, coordination and implementation of the national system of combating money laundering and the financing of terrorism.

The National Office for Prevention and Control of Money Laundering started its activity in 1999: it functioned as a specialized body with a legal personality and was subordinated to the Government of Romania, in accordance with the provisions of Article 26 (2) of Law No. 656/2002 on the prevention and sanctioning of money laundering. The FIU was also responsible for setting up measures to prevent and combat the financing of terrorism, republished, has as activity object " prevention and combating of money laundering and terrorism financing, for which purpose it receives, analyses, processes information and notifies, according to the provisions of the Article 8 (1), the General Prosecutor's Office by the High Court of Cassation and Justice," or in case of transactions that are suspected to be related to the financing of terrorism, it notifies the Romanian Intelligence Service.

The main functions of the National Office for Prevention and Control of Money Laundering are the following, in accordance with the provisions of Law No. 656/2002, republished and with provisions of GD No. 1599/2008:

- Receiving, analyzing and processing financial information. If from the analysis of the data and information processed at the institutional level, this results in solid evidence of money laundering, the Office notifies the General

Prosecutor's Office by the High Court of Cassation and Justice; in the case of transactions that are suspected of being related to the financing of terrorism, it notifies the Romanian Intelligence Service, in accordance with the provisions of the special law, which outlines the procedures for the dissemination of information to the competent authorities.

- Supervision, verification and control of the reporting entities which are not, according to the law, under the prudential supervision of another authority. Its implementation consists of the evaluations and systematical supervision of the risk indicators of money laundering, which is realized at the headquarters of the Office – off-site, and at the headquarters of the reporting entities – on site.
- The Office's function is to be a responsible factor in the international sanctions regime, by entering into force of the Law No. 217/2009 on the approval of the EGD No. 202/2008 on applying some international sanctions, taking into account its quality of supervisor for those reporting entities which are not, according to the law, under the prudential supervision of another authority, according to the special law.
- To prevent and combat acts related to the financing of terrorism. The Office, through the attributes set up by the legislation, has an important role in preventing and combating the financing of terrorism, being a component of the National System for Prevention and Combating the Terrorism (NSPCT). It actively takes part, in accordance with its directives, in stopping the activity of possible flows to finance the activities of terrorist groups, as well analyzing and evaluating the financing of terrorism risks to which the reporting entities are/might be exposed.
- Receiving, processing and analyzing requests for information. In order to perform complex analyses, which involve financial operations with foreign elements, the Romanian FIU is actively involved, at international level, in enhancing the exchange of information with foreign institutions which have similar functions to the Office, in order to prevent and combat money laundering or terrorism financing, in accordance with legal provisions.
- The Office cooperates with national and international authorities, in order to operatively fulfill its mission.
- The management of human, financial and accountancy resources and the realization of internal public audits.

In accordance with the legal provisions, the Office receives from the reporting entities three types of reports:

- Suspicions transactions reports;
- Cash transaction reports in RON or foreign currency, which exceed the threshold of 15,000 euro;
- External transaction report in and from accounts, for amounts exceeding the threshold of the RON equivalent of 15,000 euro.

The Board's Decision No. 674/May 29, 2008 establishes the form and content of the three types of reports mentioned above.

At an international level, the National Office for Prevention and Control of Money Laundering has been a member of the Egmont Group since May 2000.

The Egmont Group is an organization made up of FIUs from around the world, which was established in 1995. It ensures the effective exchange of information and know-how in the field of money laundering and the financing of terrorism. Currently, the Egmont Group has 126 members.

In accordance with the Best Practices on Exchange of Information, and taking into account the reciprocity principle, the FIUs exchange financial information, based on a standard memorandum of understanding (MOU) which is negotiated and concluded between the Egmont's members.

Also, with regard to information exchange, it is noteworthy that, at EU level, a European Platform, the FIU.NET, has been created. FIU.NET facilitates cooperation between the FIUs from member states in the field of preventing and combating money laundering and the financing of terrorism.

From a technical point of view, the FIU.NET is a secure system formed by a decentralized computer network; it has been designed to connect the FIUs from the European Union by using the modern technology to facilitate the exchange of financial information.

The National Office for Prevention and Control of Money Laundering became a member of the FIU.NET network in 2004, following the Regional Phare Program 2003–2005, which was implemented by the FIU.NET Bureau from the Ministry of Justice of the Netherlands.

Currently, within the Project of the European Commission FIU.NET Unlimited HOME/2011/ISEC/MO/FIU.NET (2011–2013), the National Office for Prevention and Control of Money Laundering has the role of partner in the management body of this project.

Principal: The Board is appointed by various institutions, such as the Ministry of Administration and Interior, the Ministry of Public Finance, the Ministry of Justice, the General Prosecutor's Office by the High Court of Cassation and Justice, the National Bank of Romania, the Court of Accounts and the Romanian Banking Association.

Year of establishment: 1999.

Banking authority: National Bank of Romania.

Securities authority: Romanian National Securities Commission.

Insurance authority: Insurance Supervisory Commission.

Country: Russia.

FIU: Federal Financial Monitoring Service (Rosfinmonitoring).

Institutional model: Financial administrative.

Main features: Pursuant to the regulations on the Federal Financial Monitoring Service, approved by Presidential Decree No. 808 dated June 13, 2012, the functions of the Federal Financial Monitoring Service are as follows:

- monitor legal entities' and individuals' compliance with Russia's anti-money laundering and terrorist financing legislation, and prosecution of violators;
- submit draft versions of federal laws, presidential and government acts and other documents concerning its activities to the President of the Russian Federation and the Government of the Russian Federation for consideration;

- issue regulations concerning its activities;
- collect, process and analyze data on transactions with monetary funds or other assets that are subject to monitoring in accordance with applicable Russian state and federal laws;
- verify the information on transactions with monetary funds or other assets, including by request of additional customer transaction data from organizations and entities carrying out transactions with monetary funds, or other assets, in accordance with the established procedures, as well as information about account (deposit) activity of credit institutions' customers;
- identify indicators of potential money laundering and the financing of terrorism in transactions with monetary funds or other assets;
- exercise control over transactions made with monetary funds or other assets in accordance with applicable Russian laws and regulations;
- receive information concerning its activities, except for private personal data; this includes information given in response to requests, from the federal bodies of state power, bodies of state power of constituent entities of the Russian Federation, local government bodies and the Central Bank of the Russian Federation;
- assess the threats to national security posed by money laundering and the financing of terrorism; submit an annual report to the President of the Russian Federation on such threats and measures, with a view to neutralizing them;
- keep a record of organizations carrying out transactions with monetary funds or other assets without having a designated oversight body in their main field of activities;
- suspend transactions with monetary funds or other assets in accordance with applicable Russian laws and regulations;
- prepare and implement measures aimed at the preventing violations of Russia's legislation with regard to the combating of money laundering and the financing of terrorism;
- coordinate activities of the federal bodies of executive power in areas within its purview;
- work closely with the Central Bank of the Russian Federation on the issues within its purview;
- cooperate and share information on matters within its purview with competent authorities of foreign countries, in accordance with international treaties of the Russian Federation or based on the principles of reciprocity;
- engage on behalf of the Russian Federation in cooperation with international organizations, public authorities, businesses and private individuals of foreign states on matters within its purview;
- disseminate information to law enforcement authorities based on sufficient grounds to suspect the transactions (deals) of being linked to legalization (laundering) of criminally gained proceeds or the financing of terrorism, and make disclosures at the request of law enforcement authorities in accordance with applicable federal laws and regulations;
- create a unified information system to cover the designated field of its activities;
- create and maintain the federal database and ensure the methodological unity and coordinated functioning of the information systems existing in the areas of its activity;

- ensure an adequate storage and protection mode for data that constitutes a state, service, banking, tax, commercial or communication secret, as well as any other confidential information obtained in the course of its activities;
- participate in the development and implementation of international cooperation programs, as well as in the preparation and conclusion of international – including interagency – treaties and agreements that govern matters within its purview;
- engage, including on a contractual basis, in the prescribed manner and in strict compliance with the law that governs the protection of state or other secrets the services of scientists, experts, research institutes and other organizations allowed to conduct expert examinations, develop training programs and teaching manuals, software and information applications and create information systems in the field of financial monitoring;
- place orders in the prescribed manner and conclude state procurement contracts for the supply of goods, performance of work and provision of services in areas within its purview, as well as research contracts and other types of civil contracts;
- carry out the functions of a chief steward and recipient of budgetary funds allocated in the federal budget for the needs of Rosfinmonitoring;
- ensure timely and proper processing of citizens' requests, effective decision-making and provision of timely feedback;
- provide mobilization training to Rosfinmonitoring's staff;
- conduct civil defense drills involving Rosfinmonitoring's staff;
- provide vocational, retraining and advanced training and internship opportunities for Rosfinmonitoring's federal civil servants;
- in accordance with the laws of the Russian Federation, carry out work on compiling, storing, recording and using Rosfinmonitoring's archival documents;
- exercise other powers in areas within its purview.

Principal: The Federal Financial Monitoring Service reports directly to the President of the Russian Federation.

Year of establishment: 2001.

Banking authority: Bank of Russia.

Securities authority: Federal Financial Markets Service.

Insurance authority: Federal Financial Markets Service.

Country: Slovak Republic.

FIU: Financial Intelligence Unit (FIU).

Institutional model: Law enforcement.

Main features: The Slovak FIU is an FIU based on a police model and this fact assumes effective use of police experience in gathering and analysis of financial intelligence related to suspicions of economic crimes and related money laundering. Under AML/CFT Law the Slovak FIU serves as a national unit which receives and analyzes United Traded Sessions (UTs) from obliged entities and – after checks, verifications and evaluation – provides information from reports completed with its results to competent law enforcement authorities (LEAs) performing tasks under Act on Police Force, to tax administrators or to foreign FIUs.

Additionally, the Slovak FIU maintains control of obliged entities' compliance; cooperates with the respective authorities of the member states and international organizations; and serves as a national authority that is responsible for detection and identification of property derived from criminal activity.

The Slovak FIU also has a consulting and preventive function towards state authorities in the area of money laundering and the financing of terrorism. Another very important function of the Slovak FIU is its performance in the area of educating obliged entities and competent units of the police force.

Principal: The FIU is incorporated within the Bureau of the Financial Police, Ministry of the Interior.

Year of establishment: 1996.

Banking authority: National Bank of Slovakia.

Securities authority: National Bank of Slovakia.

Insurance authority: National Bank of Slovakia.

Country: Slovenia.

FIU: Office for Money Laundering Prevention.

Institutional model: Financial administrative.

Main features: The Office for Money Laundering Prevention (hereafter the Office) is the central authority for the collecting and analyzing of financial data on clients and transactions regarding which there are reasonable grounds to suspect money laundering or the financing of terrorism; The Office also forwards this data to the competent authorities.

The Office is a constitutive body of the Ministry of Finance, which started operating on January 1, 1995. It plays the role of a clearinghouse between the institutions of the financial system on the one hand, and the authorities for the detection and prosecution of criminal offenses on the other. The Office receives, gathers, analyzes and disseminates the information that it obtains from financial and other obliged entities referred to in Article 4 of the Act on the Prevention of Money Laundering and Terrorist Financing (Official Gazette of the Republic of Slovenia, No. 60/2007; hereafter referred to as the APMLFT).

The obliged entities referred to in Article 4 of the APMLFT must forward to the Office information on the following:

- Cash transactions exceeding 30,000 euro (except those conducted by auditing companies, independent auditors and legal and natural persons performing accounting and tax advisory services).
- Transactions or clients in connection with which there exist reasons to suspect money laundering or the financing of terrorism.

Lawyers, law firms and notaries are obliged to forward to the Office information on:

- Transactions or clients in connection with which there exist reasons to suspect money laundering or the financing of terrorism.

If in the judgment of the Office, reasons exist to suspect money laundering or the financing of terrorism in connection with a transaction or certain persons, it may request from obliged entities: as stipulated in the Paragraph 1, Article 4

of APMLFT, data from the Paragraph 1; as stipulated in Article 83 of APMLTF, data on the statement of the funds and other assets of those persons at the obliged entity; data on transactions with the funds and assets of those persons at the obliged entities; data on other business relationships established with the obliged entity; and all other data gained by the obliged entity, or transactions conducted by it on the basis of APMLTF, that is needed to detect and prove the criminal offenses of money laundering and the financing of terrorism. Obliged entities must, upon its request, send to the Office also all the necessary documentation.

The Office can also require from obliged entities written information, data and documentation regarding the performance of their duties according to the APMLTF and other data, if it is needed for the execution of supervision.

If in the judgment of the Office, reasons exist to suspect money laundering or terrorist financing in connection with a transaction or certain persons, the Office may request from the lawyer, law firm or notary, the data, information and documentation required for the detection and provision of proof of money laundering. The Office may, likewise, request from these subjects written information, data and the documentation concerning the execution of their duties according to the provisions of the APMLFT, and other data required for the execution of supervision.

The organizations referred to in Article 4 of the APMLFT must forward to the Office the data, information and documentation requested; this should be done without delay, and not later than 15 days from the day of receiving the request. Noncompliance with this deadline constitutes to a most serious violation of the provisions of the APMLFT (violations) and is punishable with a heavy fine.

If in the judgment of the Office, reasons exist to suspect money laundering or the financing of terrorism in connection with a transaction or certain persons, the Office may request from state bodies and organizations with public authorizations, the data, information and documentation required for the detection of money laundering or terrorist financing. The Office may, likewise, request from these subjects the data, information, and documentation required for the execution of supervision and institution of proceedings.

In accordance with the provision of Article 53 of the APMLFT, data, information and documentation are forwarded from personal data records to the Office, free of charge.

If, upon analyzing the data, information and documentation received, the Office judges that reasons exist to suspect that the criminal offenses of money laundering or the financing of terrorism have taken place in connection with a transaction or a certain person, the Office sends a written report, accompanied by the necessary documentation, to the competent authorities (the Police and State Prosecutor's Office).

The Office may issue a written order temporarily postponing execution of a transaction for 72 hours if it judges that there are reasonable grounds to suspect money laundering or terrorist financing. The Office must notify the competent authorities about such an action. The APMLTF outlines the obligation of competent authorities to take very quick action after receiving notification of the temporary postponement of a transaction; these authorities must, within 72 hours of the temporary postponement of the transaction, act in accordance with their competencies.

The Office can also forward written information to the competent authorities if it judges, on the basis of the data, information and documentation obtained under the APMLFT, that there are reasonable grounds to suspect in connection with a transaction or certain person, the commitment of the offense of criminal association, corruption and other serious criminal offenses (punishable by a prison sentence of not less than five years). With such regulation – which broadens the possibilities of using the information gathered at the Office and therefore assists with the detection and prosecution of certain other criminal offenses – the APMLFT is able to keep abreast with international regulations and standards, as well as with the practices of other countries that have more experience in this field.

The Office provides the court, on its written request, with certain data from the personal records and transactions referred to in the Paragraph 1, Article 38 of the APMLFT (cash transactions exceeding 30,000 euro) and Article 73 of APMLTF (transfers of cash exceeding the amount of 10,000 euro when entering or leaving the EU), needed by the court for investigating the circumstances which are vital for the insurance or dispossession of the assets, in accordance with the provisions of the Criminal Procedure Act. This obligation widens the possibilities for use of the data gathered in the detection and dispossession of illegally derived assets. The aim of this regulation is to assist and simplify the work of the court with regard to the search for property that may be subject to seizure.

For the purpose of the centralization and analysis of all data in the field of money laundering and the financing of terrorism, the courts, State Prosecutor`s Offices and other state bodies are obliged to forward to the Office certain data on money laundering or the financing of terrorism, as well as information regarding the violations stipulated by APMLTF.

The Office is authorized, under specific conditions, to exchange data with foreign bodies that are competent in preventing money laundering and the financing of terrorism.

Furthermore, the Office also conducts (indirectly) control over the work of the obliged entities, as referred to in Article 4 of the APMLFT, with respect to their execution of the tasks stipulated by the APMLFT.

The Office performs duties concerning the prevention of money laundering such that:

1. it proposes changes and amendments to the competent bodies, with regard to the regulations concerning the prevention and detection of money laundering and the financing of terrorism;
2. it participates in the preparation of indicators for the identification of transactions, in respect of which there are grounds for suspecting money laundering and the financing of terrorism;
3. it prepares and issues recommendations and guidelines for the unified execution of APMLTF and regulations issued on its basis by the obliged entities from the Paragraphs 1 and 2/Article 4 of APMLTF;
4. it participates in the expert training of workers in obliged entities, state bodies, organizations with public authorizations, lawyers, law firms and notaries;
5. it publishes, at least once every year, statistical data in the field of money laundering and the financing of terrorism (especially with regard to the number

of suspicious transactions received according to APMLTF; the number of cases investigated each year; the number of persons prosecuted; the number of persons accused of committing criminal offenses related to money laundering or the financing of terrorism; and the extent of "frozen," seized or confiscated funds;

6. it informs the public, in an appropriate manner, about the various forms of money laundering and financing of terrorism.

The Office also submits a report on its work to the government at least once a year.

Principal: The Office for Money Laundering Prevention is responsible to the Ministry of Finance.

Year of establishment: 1995.

Banking authority: Bank of Slovenia.

Securities authority: Securities Market Agency.

Insurance authority: Insurance Supervision Agency.

Country: South Africa.

FIU: Financial Intelligence Centre (FIC).

Institutional model: Financial administrative.

Main features: The FIC's mission is to establish and maintain an effective policy and compliance framework and operational capacity with which to oversee compliance and to provide high-quality financial intelligence for use in the fight against crime, money laundering and the financing of terrorism, so that South Africa can protect the integrity and stability of its financial system, develop economically and be a responsible global citizen. The Centre strives to be the leading player in the aggressive prevention of money laundering and the financing of terrorism in order to reduce crime for the benefit of South African citizens today and in the future. The Centre aims to earn the trust, respect and support of its stakeholders for the quality of our information, and to be internationally recognized for the sustainability of its organization, the loyalty and achievements of skilled staff and the success of its efforts.

Principal: FIC is an institution that functions within the Ministry of Finance.

Year of establishment: 2001.

Banking authority: South African Reserve Bank.

Securities authority: Financial Services Board.

Insurance authority: Financial Services Board.

Country: South Korea.

FIU: Korea Financial Intelligence Unit (KoFIU).

Institutional model: Financial administrative.

Main features: The KoFIU was established pursuant to Article 3 Paragraph 1 of the Financial Transaction Reports Act (FTRA) and Article 5 of the Enforcement Decree of the FTRA in order to effectively implement the AML/CFT system. KoFIU was originally located within the Ministry of Finance and Economy (MOFE), but, as a result of the government reorganization in February 2008, it was transferred to the Financial Services Commission (FSC). The KoFIU is staffed with AML/CFT experts from the FSC, Ministry of Justice (MOJ), National Police Agency (NPA), National Tax Service (NTS), Korea Customs Service (KCS) and Financial

Supervisory Service (FSS). The independence and autonomy of the KoFIU is guaranteed by law. The KoFIU works as an institutional link between financial institutions and law enforcement agencies by receiving suspicious transaction report (STRs) from financial institutions, analyzing the STRs and disseminating them to law enforcement agencies for further action. The KoFIU is also the primary organization responsible for AML/CFT policy formulation and implementation, and AML/CFT supervision and education of financial institutions.

The Financial Transaction Reports Act, which was enacted in November 2001, is a key AML/CFT law in Korea. It provides for the establishment and operation of the KoFIU, the KoFIU's authority to collect, analyze and disseminate financial transaction information, the preventive measures to be undertaken by financial institutions and casinos such as CDD, STR, CTR, and the establishment and operation of internal control systems. The Proceeds of Crime Act (POCA), also enacted in November 2001, criminalizes money laundering and provides for the confiscation of proceeds of serious crimes. Under Article 3 of POCA, any person who disguises the acquisition or disposition of criminal proceeds, disguises the origin of criminal proceeds or conceals criminal proceeds is punished by imprisonment not exceeding five years, or a fine not exceeding 30 million KRW. Article 8 of POCA provides for confiscation of criminal proceeds and Article 10 of the same Act provides for confiscation of property that is of equivalent value to the criminal proceeds.

Principal: The KoFIU is responsible to the Financial Services Commission (FSC), Ministry of Finance.

Year of establishment: 2001.

Banking authority: Financial Services Commission.

Securities authority: Financial Services Commission.

Insurance authority: Financial Services Commission.

Country: Spain.

FIU: Executive Service of the Commission for the Prevention of Money Laundering and Monetary Offenses (SEPBLAC).

Institutional model: Financial administrative.

Main features: N/A.

Principal: SEPBLAC is supervised by the Government and the Central Bank of Spain.

Year of establishment: 1993.

Banking authority: Bank of Spain.

Securities authority: National Commission of the Securities Markets.

Insurance authority: General Directorate for Insurance and Pension Funds.

Country: Sweden.

FIU: Swedish Financial Intelligence Unit.

Institutional model: Law enforcement.

Main features: N/A.

Principal: The Swedish Financial Intelligence Unit is part of the Swedish Police Board and the Swedish National Criminal Police.

Year of establishment: N/A.

Banking authority: Swedish Financial Supervisory Authority.

Securities authority: Swedish Financial Supervisory Authority.

Insurance authority: Swedish Financial Supervisory Authority.

Country: Switzerland.
FIU: Money Laundering Reporting Office Switzerland (MROS).
Institutional model: Law enforcement.
Main features: The Money Laundering Reporting Office Switzerland (MROS) at the Federal Office of Police (fedpol) is Switzerland's central anti-money laundering office and functions as a relay and filtration point between financial intermediaries and the law enforcement agencies. According to the Money Laundering Act MROS is responsible for receiving and analyzing suspicious activity reports in connection with money laundering and, if necessary, forwarding them to the law enforcement agencies. The MROS is also a specialized body that publishes annual statistics on developments in Switzerland's fight against money laundering, organized crime and the financing of terrorism, and identifies typologies that are useful for training financial intermediaries. MROS is organized as a section within the Federal Office of Police; it is not a police authority in itself, but rather an administrative unit with special tasks. The MROS is a member of the Egmont Group, which is an international association of FIUs; as mentioned previously, the group's objective is to foster a safe, prompt and legally admissible exchange of information in order to combat money laundering and the financing of terrorism.
Principal: The MROS is a section of the Federal Office of Police.
Year of establishment: 1997.
Banking authority: Swiss Financial Market Supervisory Authority (FINMA).
Securities authority: Swiss Financial Market Supervisory Authority (FINMA).
Insurance authority: Swiss Financial Market Supervisory Authority (FINMA).

Country: Thailand.
FIU: Anti-Money Laundering Office (AMLO).
Institutional model: Judicial.
Main features: Established in 1999, the Anti-Money Laundering Office (known as AMLO) is central to Thailand's fight against money laundering and the financing of terrorism. As an enforcement agency, AMLO has been empowered to authorize the searches of premises and vehicles; it has also been given authority to seek court approval to conduct electronic surveillance where there is evidence of a money laundering offense. The office works with the Transaction Committee, which has authority to seize suspicious money and property and pursue the forfeiture of assets through civil proceedings. AMLO has responsibility for the custody, management, and disposal of seized property. During the past eight years of its operation, AMLO has seized assets, pertaining to predicate offenses, of up to an amount of 4,124.8 million baht (approximately 117.85 million US dollars) (As of December 31, 2008). The seized assets ranged from land and premises to bank accounts, gemstones, cash and vehicles. AMLO also plays a financial intelligence role, similar to that of FinCEN in the US and AUSTRAC in Australia. The Information Technology and Financial Investigation Bureau manages information inputs in huge amounts from financial institutions and other reporting entities. It has access to a database, analyzes the financial data and disseminates it to other competent authorities, at the domestic and international levels, for further investigation.

On overseas front, AMLO has been a member of world anti-money laundering bodies such as the Egmont Group and the FATF-style regional body: the Asia-Pacific Group on Money Laundering (APG).

Principal: The AMLOS is responsible to the Ministry of Justice.
Year of establishment: 1999.
Banking authority: Bank of Thailand.
Securities authority: Securities and Exchange Commission.
Insurance authority: Office of Insurance Commission.

Country: Trinidad and Tobago.
FIU: Financial Intelligence Unit (FIU).
Institutional model: Financial administrative.
Main features: The mission of the FIU is to effectively detect and deter money laundering and the financing of terrorism, in collaboration with local law enforcement, regulators and international counterparts, thereby contributing towards a safe and stable financial, social and economic environment. The FIU is the primary institution for the collection of financial intelligence and information, and the analysis, dissemination, and exchange of such financial intelligence; this will also include the circulation of information among law enforcement authorities, financial institutions and listed businesses (as stated under the Proceeds of Crime (Amendment) Act, 2009) in Trinidad and Tobago and internationally.

Among its functions are:

1. To receive reports of suspicious transactions and suspicious activity from financial institutions and listed businesses.
2. Request financial information from financial institutions or listed businesses to facilitate the application of its powers.
3. Analyze and evaluate reports and information upon receipt thereof, to determine whether there is sufficient basis to transmit reports for investigation by any local or foreign law enforcement authority.
4. Collect information as required for:
   i. the annual and periodic reports;
   ii. tactical analyses, in order to generate activity patterns, investigate leads and identify possible future behavior.
5. Set reporting standards to be followed by financial institutions and listed businesses.
6. Engage in the exchange of financial intelligence with members of the Egmont Group (www.egmontgroup.org).
7. Disseminate at regular intervals, financial intelligence and information to local and foreign authorities and its affiliates within the intelligence community, including statistics on recent money laundering practices and offenses.
8. Facilitate the sharing of information among local financial institutions, listed businesses and prosecutorial authorities.
9. Provide assistance to financial institutions and listed businesses in connection with their obligation under the FIU Act.
10. The FIU retains all pertinent information it receives for a minimum of six years.

The powers of the FIU include:

1. If, after the analysis of a suspicious transaction or suspicious activity report from the financial institution or listed businesses, the Director is of the view that further information may disclose that a specified offense has been or may be committed, or the proceeds of a crime are or may be in Trinidad and Tobago, or elsewhere, he may:
   i. Request further information from a financial institution or listed business within a specified time, which information shall be provided accordingly; or
   ii. After the FIU has concluded its analysis or evaluation of a suspicious transfer or activity report, and if the Director is of the view that circumstances warrant investigation:
      1. A report shall be submitted to the relevant law enforcement authority for investigation to determine whether a money laundering offense has been committed, or whether the proceeds of the crime are in Trinidad and Tobago, or elsewhere.

The FIU may, in the performance of its functions, cooperate and liaise with:

1. The Central Bank and any other agency of government.
2. The relevant authorities specified by or under a treaty for cooperation.
3. Any person who, in the opinion of the Director, can assist in the provision of information relevant to an analysis of intelligence or other information.

Principal: The FIU is an agency within the government.
Year of establishment: 2009.
Banking authority: Central Bank of Trinidad and Tobago.
Securities authority: Trinidad and Tobago Securities and Exchange Commission.
Insurance authority: Central Bank of Trinidad and Tobago.

Country: Tunisia.
FIU: Tunisian Financial Analysis Committee (TFAC).
Institutional model: Financial Administrative.
Main features: The Tunisian Financial Analysis Committee (TFAC) was created by Law No. 2003–75 of December 10, 2003 (Article 78) related to the support of international efforts to combat terrorism and repress money laundering. It was established within the Central Bank of Tunisia that ensures the general secretariat. It has an administrative status. The TFAC is the national center for receiving and analyzing suspicious transactions reports (STRs) and disseminating them, if the suspicion is confirmed, to judicial authorities. In this regard, the TFAC can order an administrative temporary freezing of assets, subject to an STR, which cannot exceed ten days. The TFAC's tasks also include cooperation with local regulatory and supervisory authorities on issues related to AML/CFT, such as establishing policies and programs of prevention, conducting studies and researches, organizing training. The TFAC has the right to obtain from reporting entities and administrative law enforcement agencies, the information needed to properly undertake the analysis of STRs. The TFAC is also empowered to cooperate with foreign FIU.

Principal: The TFAC is a unit within the Central Bank of Tunisia.
Year of establishment: 2003.
Banking authority: Central Bank of Tunisia.
Securities authority: Financial Market Council.
Insurance authority: Ministry of Finance.

Country: Turkey.
FIU: Financial Crimes Investigation Board (MASAK).
Institutional model: Financial Administrative.
Main features: The MASAK was established with the enactment of Law No. 4208 on Prevention of Money Laundering on November 19, 1996 and started to carry out its functions on February 17, 1997. The functions and powers of MASAK were determined with the Law No. 5549 on Prevention of Laundering Proceeds of Crime which was put into force on October 18, 2006.

Article 19 of the Law No. 5549 is as follows, in which the duties and powers of MASAK are listed:

Article 19

1. The Presidency of Financial Crimes Investigation Board is directly attached to the Minister of Finance. The duties and powers of the Presidency are as follows:
   (a) To develop policies and implementation strategies, to coordinate institutions and organizations, to conduct collective activities, to exchange views and information in order to prevent laundering proceeds of crime.
   (b) To prepare law, by-law and regulation drafts in accordance with the policies determined, to make regulations for the implementation of this Law and the decisions of Council of Ministers regarding the Law.
   (c) To carry out researches on the developments and trends on laundering proceeds of crime, and on the methods of detecting and preventing them.
   (d) To make sectoral studies, to improve measures and to monitor the implementation on the purpose of prevention of laundering proceeds of crime.
   (e) To carry out activities to raise the public awareness and support.
   (f) To collect data, to receive suspicious transaction reports, to analyze and evaluate them in the scope of prevention of laundering proceeds of crime and terrorist financing.
   (g) To request for examination from law enforcement and other relevant units in their fields, when required during the evaluation period.
   (h) To carry out or to have carried out examinations on the subject matters of this Law.
   (i) To denounce files to the Chief Public Prosecutor's Office for the necessary legal actions according to the Criminal Procedure Law in the event of detecting serious findings at the conclusion of the examination that a money laundering offense is committed.
   (j) To examine the cases conveyed from Public Prosecutors and to fulfill the requests relating to the determination of money laundering offense.

(k) To convey the cases to the competent public prosecutor's office in cases where serious suspicion exists that a money laundering or terrorist financing offense is committed.
(l) To ensure inspection of obligations within the scope of this Law and relevant legislation.
(m) To request all kinds of information and documents from public institutions and organizations, natural and legal persons, and unincorporated organizations.
(n) To request temporary personnel assignment from other public institutions and organizations within the Presidency, when their knowledge and expertise is necessary.
(o) To carry out international affairs, to exchange views and information for the subjects in the sphere of its duties.
(p) To exchange information and documents with counterparts in foreign countries, to sign memorandum of understanding that is not in the nature of an international agreement for this purpose.

2. The unit requested according to the sub-paragraph (f) of paragraph (1) by the Presidency shall respond to the request promptly.
3. The Presidency fulfills its duties of examination on money laundering offense through examiners. The examiners are designated upon the request of the President by the proposal of the Head of the related unit and by the approval of the Minister to whom they are attached or related.
4. The examiners assigned upon the request of the Presidency are authorized to request information and document, to make examination, to inspect the obligations, to scrutinize all kinds of documents on the matters of the assignment.

MASAK performs the following functions within the scope of duties and powers determined:

- Developing policies and improving legislation
- Data collecting, analyzing, evaluation
- Supervision
- Coordination
- Investigation

Principal: MASAK is a unit within the Ministry of Finance.
Year of establishment: 1996.
Banking authority: Banking Regulation and Supervision Agency.
Securities authority: Capital Markets Board of Turkey.
Insurance authority: The Undersecretariat of Turkish Treasury.

Country: Ukraine.
FIU: State Committee for Financial Monitoring (SCFM).
Institutional model: Financial Administrative.
Main features: 1. The State Committee for Financial Monitoring of Ukraine (hereafter: SCFM of Ukraine) is the central agency of the executive power with special status, the activity of which is directed and coordinated by the Cabinet of Ministers of Ukraine.

The SCFM of Ukraine is the specially authorized agency of the executive power in the area of financial monitoring.

2. SCFM of Ukraine in its activity is guided by the Constitution and Laws of Ukraine, Acts of the President of Ukraine and the Cabinet of Ministers of Ukraine, international agreements and this Statute.

SCFM of Ukraine in its activity uses recommendations of international organizations aimed at counteraction to the legalization (laundering) of the proceeds from crime and terrorist financing.

3. The main tasks of the SCFM of Ukraine are:
    1. participation in realization of state policy in the area of prevention and counteraction of the legalization (laundering) of the proceeds from crime and the financing of terrorism;
    2. collecting, processing and analyzing of information on financial transactions, subject to obligatory financial monitoring;
    3. creation and ensuring of the functioning of the Unified State Information System in the area of prevention and counteraction to the legalization (laundering) of the proceeds from crime and terrorist financing;
    4. arrangement of cooperation, interaction and information exchange with the state agencies, competent authorities of foreign countries and international organizations in the area of prevention and counteraction of the legalization (laundering) of the proceeds from crime and the financing of terrorism;
    5. ensuring, according to the set procedure, the representation of Ukraine in international organizations regarding prevention and counteraction of the legalization (laundering) of the proceeds from crime and the financing of terrorism.
4. SCFM of Ukraine according to the tasks assigned to it:
    1. develops and approves complex actions on prevention and counteraction of the legalization (laundering) of the proceeds from crime and the financing of terrorism;
    2. participates in development of the Activity Program of the Cabinet of Ministers of Ukraine;
    3. cooperates with central agencies of executive powers and other state bodies, which, according to legislation, execute functions of regulation and supervision over the activity of entities of initial financial monitoring, as well as other state bodies in the area of prevention and counteraction of the legalization (laundering) of the proceeds from crime and the financing of terrorism;
    4. provides to the law enforcement agencies appropriate case referrals, given the availability of reasonable grounds to consider the financial transaction as one that might be related to the legalization (laundering) of the proceeds from crime and the financing of terrorism;
    5. conducts, in the area of prevention and counteraction of the legalization (laundering) of the proceeds from crime and the financing of terrorism, the methodical provision of entities of initial financial monitoring, central agencies of executive power and other state bodies which, according to legislation, execute functions of regulation and supervision over such entities; and coordinates actions conducted by them in this area;

6. establishes qualification requirements for persons that are to be appointed as responsible for carrying out internal financial monitoring;
7. conducts efficiency analysis of measures, undertaken by entities of initial financial monitoring for prevention and counteraction of the legalization (laundering) of the proceeds from crime and the financing of terrorism;
8. introduces suggestions regarding the elaboration of legislative acts; participates, according to the set procedure, in preparing of other normative-legal acts in the area of prevention and counteraction to the legalization (laundering) of the proceeds from crime and the financing of terrorism;
9. generalizes information – received from the law enforcement and other state bodies – related to the legalization (laundering) of the proceeds from crime; analyzes the dynamics of the evolution of negative tendencies in this area; researches methods and financial schemes of the legalization (laundering) of the proceeds from crime and the financing of terrorism; develops and provides, according to the set procedure, proposals concerning improvement of legislation in this area;
10. promotes detection of financial transactions that indicate the use of the proceeds from crime;
11. ensures conducting, according to set by legislation procedure, the registration of financial transactions that have indicators of ones that are subject to financial monitoring;
12. approves draft normative–legal acts of the central agencies of executive power which, according to legislation, execute the functions of regulation and supervision regarding the activity of the entities of initial financial monitoring to prevent and counteract the legalization (laundering) of proceeds from crime and the financing of terrorism;
13. organizes meetings, seminars, conferences in the area of preventing and counteracting the legalization (laundering) of the proceeds from crime and the financing of terrorism;
14. provides guidelines on normative–legal acts adopted in the area of preventing and counteracting the legalization (laundering) of the proceeds from crime and the financing of terrorism;
15. participates in international cooperation in the area of preventing and counteracting the legalization (laundering) of the proceeds from crime and the financing of terrorism; studies, generalizes and extends world experience concerning these issues;
16. participates under the Order of the Cabinet of Ministers in the development of international agreements of Ukraine in the area of preventing and counteracting the legalization (laundering) of the proceeds from crime and the financing of terrorism, and ensures their fulfillment;
17. conducts according to legislation functions of administration of the objects of state ownership, that belong to the scope of its administration;
18. executes other functions resulting from the assigned tasks.

5. SCFM of Ukraine has the right to:
   1. receive information that is necessary for fulfillment of the assigned tasks, particularly in the cases of violation of legislation by entities of initial financial monitoring, according to the procedures set by legislation; this information can be received from the agencies of executive power; other state bodies that, according to legislation, execute the functions of regulation

and supervision over the activity of the entities of initial financial monitoring; law enforcement agencies; other state bodies; self-governing bodies; and information freely given by companies, institutions and organizations, irrespective of the ownership form (including information on bank or commercial secrecy and copies of documents that certify it);
receive, from the law enforcement agencies which receive case referrals on financial transactions, information on processing and appropriate measures undertaken in the basis of mentioned referrals;
receive, from entities of initial financial monitoring, information (including copies of documents that certify it) necessary for executing assigned tasks related to financial transactions subject to initial financial monitoring, in particular concerning persons that execute such transactions;

2. provide access – as set by the legislation procedure, including automotive – to the databases of entities of state financial monitoring, central agencies of executive power and other state bodies;
3. involve specialists from state bodies, companies, institutions and organizations (under approval by their directors) in the examination of issues that are under its supervision;
4. within the framework of international cooperation:
   conclude, as set by legislation procedure, international interagency agreements with competent authorities of foreign states concerning cooperation in the area of preventing and counteracting the legalization (laundering) of the proceeds from crime and the financing of terrorism; conduct information exchange with competent authorities of foreign states; participate in international conferences, symposiums, seminars, meetings, consultations in the area of its competence.
5. The SCFM of Ukraine fulfills tasks assigned to it directly and through appropriate structural divisions created by it in the country's regions.
6. The SCFM of Ukraine, while executing assigned tasks, interacts with central and local agencies of executive power, other state bodies, self-governing bodies, citizen unions, competent bodies of foreign states and international organizations.
7. SCFM within its competence on the basis and for execution of legislative acts issues orders, organizes and controls their execution.

Normative-legal acts of SCFM of Ukraine are subject to state registration according to procedure set up by the legislation.

If necessary, the SCFM of Ukraine issues joint acts in cooperation with central agencies of executive power and other state bodies.

8. The SCFM of Ukraine is headed for seven years by an individual appointed following the advice of the Prime Minister of Ukraine; after seven years, the Head is dismissed by the President of Ukraine.

The Head presides over the SCFM of Ukraine, bears personal responsibility for the execution of tasks assigned to the SCFM of Ukraine and fulfillment of its functions; the Head answers directly to the President of Ukraine and the Cabinet of Ministers of Ukraine.

The Head of the SCFM of Ukraine has First Deputies and Deputies. The First Deputies and Deputies are appointed following the advice of the Prime Minister and they are dismissed by the President of Ukraine.

Head of the SCFM of Ukraine manages the SCFM, distributes functions among his First Deputies and Deputies; determines the degree of responsibility of Deputy Heads and directors of the structural divisions; appoints and discharges employees, including those under the approval of the Cabinet of Ministers of Ukraine, and directors of independent structural divisions of the SCFM of Ukraine;

9. For coordinated settlement of issues under the authority of the SCFM of Ukraine, and for discussion of top-priority directions of its activity, a Board of the SCFM of Ukraine composed of the Head (Chair of the Board), Deputy Heads and directors of the structural divisions shall be established.

Other persons can be members of the Board in compliance with the established procedure if needed.

Members of the Board shall be approved and discharged by the Cabinet of Ministers following advice from the Head of the Committee. Decisions of the Board shall be implemented by the orders of the SCFM of Ukraine.

10. To carry out retraining and professional development of the experts in the AML/CTF sphere a Training and Methodical Centre shall be established.
11. For consideration of scientific recommendations and other proposals regarding top-priority directions of the development of the system for preventing and counteracting the legalization (laundering) of the proceeds from crime and the financing of terrorism, scientific councils, other consultative and advisory bodies can be established within the SCFM of Ukraine. Membership of the scientific councils, other consultative and advisory bodies – as well as its statutes – shall be approved by the Head of SCFM of Ukraine.
12. A limited number of the employees of the SCFM of Ukraine shall be approved by the Cabinet of Ministers of Ukraine.
13. Personnel arrangements and the estimated budget of the SCFM of Ukraine shall be authorized by the Head under the approval of the Ministry of Finance.
14. The structure of the SCFM of Ukraine shall be confirmed by the Head of the SCFM of Ukraine under approval of the Cabinet of Ministers of Ukraine. Statutes of the structural divisions of the SCFM of Ukraine shall be approved by the Head of SCFM of Ukraine.
15. The SCFM of Ukraine is a legal entity with an independent balance, accounts in the authorities of State Treasury and a seal representing State Emblem and its title.

Principal: The SCFM is directed and coordinated by the Cabinet of Ministers.
Year of establishment: 2003.
Banking authority: National Bank of Ukraine.
Securities authority: National Securities and Stock Market Commission.
Insurance authority: National Commission for Regulation of Financial Services Markets in Ukraine.

Country: United Kingdom.
FIU: UK Financial Intelligence Unit (UKFIU).
Institutional model: Law enforcement.
Main features: The UK Financial Intelligence Unit (UKFIU) receives, analyzes and distributes financial intelligence gathered from suspicious activity reports (SARs).

An SAR is a piece of information that alerts law enforcement to potential money laundering or financing of terrorism. This could be large cash purchases or a series of large, out of character deposits. The UKFIU receives over 200,000 SARs a year. These are used by a wide variety of law enforcement bodies to help investigate all levels and types of criminal activity: from benefit fraud to international drug smuggling, human trafficking to the financing of terrorism. The UKFIU identifies the most sensitive SARs and sends them to the appropriate organizations for investigation. The remainder are made available to UK law enforcement bodies via a secure channel.

Principal: The UKFIU is a division within the National Crime Agency.
Year of establishment: 2002 (Proceeds of Crime Act).
Banking authority: Prudential Regulatory Authority – Bank of England.
Securities authority: Prudential Regulatory Authority – Bank of England.
Insurance authority: Prudential Regulatory Authority – Bank of England.

Country: USA.
FIU: Financial Crimes Enforcement Network (FinCEN).
Institutional model: Financial administrative.
Main features: The law has established the FinCEN as a bureau within the Treasury Department and FinCEN's duties and powers include:

- Maintaining a government-wide data access service with a range of information about financial transactions.
- Analysis and dissemination of information in support of law enforcement investigatory professionals at the Federal, State, Local, and International levels.
- Determine emerging trends and methods in money laundering and other financial crimes.
- Serve as the FIU of the United States.
- Carry out other delegated regulatory responsibilities.

Principal: The FinCEN is a bureau within the Department of Treasury.
Year of establishment: 2001.
Banking authority: Federal Reserve System and other Federal Agencies plus States Regulators.
Securities authority: United States Securities and Exchange Commission and US Commodity Futures Trading Commission plus State Regulators.
Insurance authority: States Insurance Regulators.

Country: Zimbabwe.
FIU: Financial Intelligence Unit (FIU).
Institutional model: Financial Administrative.

Main features: The Bank Use Promotion and Financial Intelligence Unit was established in 2004 in accordance with Section 3 of the Bank Use Promotion and Suppression of Money Laundering Act [Chapter 24:24]. The Unit exists as a part of the Reserve Bank of Zimbabwe, but has its own governing statutes, giving it a mandate distinct from that of the central bank.

Principal: The FIU is a unit within the Central Bank of Zimbabwe.

Year of establishment: 2004.

Banking authority: Reserve Bank of Regulator.

Securities authority: Securities and Exchange Commission of Zimbabwe (SECZ).

Insurance authority: Insurance and Pensions Commission (IPEC).

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