GLOBAL FINANCIAL INTEGRITY

Russia: Illicit Financial Flows and the Role of the Underground Economy

Dev Kar and Sarah Freitas

February 2013

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Global Financial Integrity Wishes to Thank
The Ford Foundation for Supporting this Project

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We are pleased to present here our report, **Russia: Illicit Financial Flows and the Role of the Underground Economy.**

This report has been a particularly interesting analysis for Global Financial Integrity. Utilizing the usual World Bank Residual model plus trade misinvoicing yields a figure of US$782 billion in unrecorded outflows from Russia for the period 1994 to 2011. Utilizing an alternative model—Hot Money Narrow plus trade misinvoicing—yields a figure of US$211 billion for the period. What can account for this difference in the two results?

The traditional World Bank Residual model can include both recorded and unrecorded private sector flows. The Hot Money Narrow model focuses on Net Errors and Omissions, that is, unrecorded flows. The difference in the two figures suggests that there has been a great deal of recorded private sector outflows from Russia.

There is a basic difference between legal and illegal flight capital. The legal component stays on the books of the entity or individual making the outward transfer. The illegal component is structured to disappear from the books of the entity or individual making the outward transfer. How much of what appears to be legal flight capital from Russia has in fact stayed on the books of the transferring entities? This is a most interesting question, beyond the scope of this analysis but one we would like to address in subsequent studies.

Another major component of illicit financial flows from Russia does not show up in this study or indeed in our other studies. There are two ways to misprice trade—reinvoicing and same invoice faking. When IMF Direction of Trade Statistics reveal a substantial difference between export and import values of merchandise trade recorded by pairs of trading countries, this indicates that trade has been reinvoiced somewhere between export and import. However, incorporating the mispricing within the same invoice as a matter of agreement between exporters and importers does not show up as a difference between export and import values. Russian companies have aggressively utilized same invoice faking for years. Beginning in the 1990s, many Russian corporations established subsidiaries in Europe to function as buying offices. In addition, hundreds of corporations established their own “pocket” banks to handle their trade documentation and financial transfers. By selling exports to their foreign subsidiaries and by buying imports from their foreign subsidiaries and by utilizing their own pocket banks to handle the transactions, Russian corporations have been able to transfer hundreds of billions of dollars out of their country. None of this shows up in our data or in other analyses of flight capital from the country. Moreover, IMF trade data does not include services and intangibles, so that mispricing in these areas also is not covered in our study.

With these qualifiers, it should be noted that our analysis of illicit financial flows from Russia broadly accords with other analyses done by the International Monetary Fund and by economic scholars.

Another element we have added to this report is an analysis of unrecorded inflows. We have long maintained that economies are damaged by both unrecorded outflows and inflows, neither of which effectively contributes to economic growth or government revenues. We find that our analysis of outflows and inflows together are strongly correlated to Russia's weak overall governance, with the latter feeding back to drive unrecorded flows. Indeed, it is the governance deficit manifest in so many aspects of the Russian state that presents an enormous problem for the nation itself and for its economic and political relations with other nations.

A major part of the work of Global Financial Integrity is unpacking the opaque. Russia is the most opaque economy we have analyzed, and we look forward to deepening our analysis of its economic realities in the future.

We thank Dev Kar and Sarah Freitas for their very insightful work on this challenging effort. The continuing support of the Ford Foundation is gratefully acknowledged and appreciated.

Raymond W. Baker
Director, Global Financial integrity
January 30, 2013

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Abstract

This study presents estimates of various types of capital flows to and from post-Soviet Russia. We argue that while netting out is a valid concept related to licit flows, illicit flows in both directions should be added in order to assess their adverse impact on the economy. Simultaneous equation modeling shows that total illicit flows both drive and are driven by underground economic activities. The latter is used as a proxy for the state of overall governance in Russia, which continues to be a serious issue. We suggest a range of domestic and international policy measures to curtail the cross-border transmission of illicit financial flows to and from Russia.

Executive Summary

This study quantifies and evaluates the volume and significance of illicit financial flows from Russia since 1994, the earliest year for which balance of payments data are available for the country. We use the balance of payments framework, which permits estimation of three types of capital flows—broad capital flight consisting of a mix of licit and illicit capital, legal or licit capital flight, and illicit financial flows. While the World Bank Residual (WBR) method affords a measure of broad capital flight, the net errors and omissions or the Hot Money Narrow (HMN) measure, which is part of the balance of payments, permits a sharper focus on illicit flows. Hence, we use the HMN method in line with those followed by the Central Bank of Russia and used in IMF country reports.

That said, we point out that economists have netted out inflows and outflows of capital regardless of whether they are licit or illicit. They also net out inward from outward capital flight when it comes to the WBR method. We discuss at length why a net measure is logically flawed. For example, deriving a net balance position may make sense when it comes to licit flows like FDI or recorded capital flight, netting out illicit flows makes little sense. This is because when it comes to illicit capital, flows are illicit in *both* directions and netting them out would be akin to deriving a position that corresponds to "net crime" rather than a net benefit or cost to an economy. In light of this argument, we develop estimates of net licit flows, gross illicit outflows, and broad capital flight from Russia. We also introduce the concept of total illicit flows (i.e., illicit inflows plus outflows) to examine the link between the total volume of such flows and underground economic activities in Russia.

The study finds that over the period 1994-2011, outflows consisting of a mix of licit and illicit capital from Russia amounted to US$782.5 billion or about US$43.5 billion per annum on average. This compares to outflows of US$211.5 billion in illicit capital or about US$11.8 billion per annum. These estimates include outflows due to the deliberate misinvoicing of trade. Because we do not provide estimates of broad capital flight or illicit financial flows on a net basis these estimates cannot be directly compared to those found in previous studies. Nevertheless, we present different estimates of capital flight from Russia in order to afford readers a sense of the variation in estimates, keeping in mind the differences in their underlying methodologies. While there is considerable variation in capital flight estimates, we find that CED+GER estimates are closer to the IMF's net estimates of capital flight even though the former are on a gross outflow basis. CED estimates correspond to outflows obtained through the WBR method while GER estimates correspond to outflows due to trade misinvoicing.

An important point which emerges from a comparison of estimates is that because illicit flows are a narrower measure of capital flight, cumulative outflow estimates are typically far below any of

the other capital flight estimates for overlapping periods of study. For the period 2000-2005, our CED+GER estimates are again closer to the IMF's estimates than any other. However, for the next six-year period 2006-2011, the difference between the IMF and GFI estimates widen considerably due mainly to an increase in trade misinvoicing outflows, which are not included in the IMF estimates. In general, outflows of illicit capital of US$14 billion per annum are around two to three times lower than broad capital flight estimates found by previous researchers. We also compare our estimates of gross illicit flows from Russia against the Central Bank of Russia's estimates of broad capital flight, which are on a net basis. Because of the netting process adopted by the CBR, its estimates are generally significantly less than estimates based on the CED+GER measure although the CBR's estimate of cumulative outflows amounting to US$343.2 billion are significantly more than illicit outflows of US$211.5 billion noted above.

Regarding illicit inflows, the study finds that, while inflows through the balance of payments are minimal, totaling around US$9.9 billion over the period 1994-2011, inflows through trade misinvoicing are not. Cumulative illicit inflows through export over-invoicing (perhaps to fraudulently collect export subsidies) amounted to US$145.8 billion while inflows through import under-invoicing (possibly driven by avoidance of customs duties) amounted to US$397.1 billion. We strongly recommend that the Russian authorities examine more closely whether such illegal practices are undermining the government's fiscal policies (loss of revenues and increase in expenditures).

To examine the interaction between total illicit flows and the underground economy we begin by estimating the size of the underground economy using the currency demand approach. This approach estimates the difference in currency demand with and without taxes based on the assumption that higher taxes stimulate the underground economy and that the higher use of cash in that economy raises the demand for currency. Comparing the results of our estimates of the underground economy with those found in a recent study at the World Bank based on the multiple-indicators-multiple-causes (MIMIC) model, we find that over the period 1999-2007, the Bank's average estimate of 43.8 percent of official GDP from 1999 to 2007 compared favorably with our average at 46.0 percent of official GDP.[2]

We explain how total illicit flows and the underground economy are generated and test the link between them using macroeconomic, structural, and governance-related variables. Moreover, we found governance to be the most important driver of both illicit flows and the underground economy. The objective here was to obtain the best goodness-of-fit (indicated by the adjusted R^2) with the lowest number of variables without the presence of serial correlation.

In fact, the underground economy was found to be highly significant at that level in all specifications explaining illicit flows. Using a dynamic simulation model we find evidence that *Russia's*

[2] Schneider, F. Buehn, A. Montenegro, C.E. (2010). *Shadow Economies All over the World: New Estimates for 162 Countries from 1999 to 2007.* World Bank Policy Research Working Paper WPS5356. Washington DC: The World

underground economy both drives and is driven by gross illicit flows confirming that, unlike licit capital, illicit flows in both directions are harmful to the economy. Under the circumstances, the question of netting illicit inflows with illicit outflows does not arise. Rather, the harmful effect of illicit flows on an economy can best be measured by the sum of inflows plus outflows.

Finally, based on our analysis of the drivers and dynamics of illicit flows, the study concludes with a range of policy measures intended to curtail their generation and cross-border transmission. These embrace the entire gamut of policies related to the domestic economy as well as policy actions that need to be taken on a bilateral and multilateral basis. Because macroeconomic instability can also drive out illicit capital, there is a need to maintain price and exchange rate stability and tax structures that are not burdensome or encourage evasion. In light of our finding that overall governance has weakened significantly in Russia, there is also a need to strengthen various aspects of governance ranging from voice and accountability to the rule of law and the control of corruption (there are six aspects to governance). Endemic misinvoicing of trade is a symptom of a weak customs administration that is perhaps in serious need of comprehensive reform. Weaknesses in customs administration were also reported by the Financial Action Task Force (FATF), which noted that such weaknesses can undermine anti-money laundering and terrorist financing efforts. *Hence, there are important and serious security aspects of weak overall governance that the authorities should heed in order to strengthen national security. The massive illicit flows from Russia and how they both drive and are driven by its huge underground economy are symptomatic of weak overall governance. Action on strengthening governance and curtailing illicit flows should therefore be accorded the highest priority by the Russian Government.*

Regarding action on the international front, we outlined (i) measures to curb abusive transfer pricing by multinationals and bilateral agreements such as (ii) Automatic Exchange of Information and (iii) Double Tax Avoidance Agreements that Russia can enter into with other countries in order to curtail tax evasion. At the same time, the Russian government could seek greater transparency and accountability of financial institutions and multinational corporations through international regulatory action under the aegis of the G-20, the G-8 and the OECD.

I. Introduction

The term 'capital flight' typically refers to an outflow of capital from a country, although academic literature on the subject is often ambiguous as to the nature of the capital in question. While most studies have included licit and illicit funds in the analysis of capital flight, there is typically no attempt to distinguish the two. Some studies focus on the flight of legal capital and fewer still deal with illicit flows, which involve capital earned illegally through tax evasion, corruption, transactions involving contraband goods, and other criminal activities. Studies on capital flight from Russia in particular lack clarity regarding the legality of capital fleeing the country.

A comprehensive definition of illicit flows belies the fact that economic models and methods cannot capture a large portion of such flows. For instance, economic methods based on gap analysis of officially reported balance of payments and trade data cannot capture many types of illicit transactions, such as those that are settled in cash. Moreover, while economists have studied the misinvoicing of trade as a conduit for the transfer of illicit capital, the fact remains that same-invoice faking, bulk cash transfers, and hawala-type currency substitutions provide additional channels for illicit flows that cannot be measured. Same-invoice faking and hawala mechanisms often rely on word-of-mouth collusion among parties that transfer illicit funds without a trace. *In light of these inherent limitations in data sources and methods, estimates of illicit flows from Russia and the corresponding shares in total capital flight presented in this study are likely to be significantly understated.*

The paucity of academic research on illicit flows speaks to the difficulty of their measurement using conventional economic methods. Furthermore, the fact that licit and illicit financial flows tend to exhibit random-walk characteristics over a given time period complicates standard regression analysis and model specification. Notwithstanding the difficulty of estimating illicit flows, this is an extremely important issue for Russia given that weak governance in general, and corruption in particular, drive much of such capital from the country. In fact, as Kosarev (2000), Guriev (2012), Mishina (2012) and others have pointed out, corruption has been such an endemic problem in Russia that much of Russian society has come to tolerate it. Loungani and Mauro (2000) observed that capital flight from Russia was mainly driven by the "confiscatory" nature of the tax system, endemic weaknesses in its banking system, vested interests in the energy sector, and widespread corruption. They argued that as long as these root causes remain, the flight of capital, both licit and illicit, can be expected to continue.

In contrast to the scant literature on flows that are purely illicit, there have been a number of studies on capital flight from Russia that consist of a mix of licit and illicit funds.[3] In fact, the Central Bank of Russia's own studies show that capital flight has been a persistent problem since the formation of the Russian Federation on December 25, 1991.[4]

[3] See, for example, Loukine (1998) for licit and illicit capital flight and Sicular (1998) on the residual measure.
[4] Reference, Guriev and Kosarev (2000). Recent interviews of Russian experts by the media also highlight the problem of corruption and capital flight; see, for example, Khvostunova (2012) and Mishina (2012).

This paper presents an empirical study on illicit financial flows from Russia since 1994 (the earliest year for which data are available), seeking to bring out possible drivers and dynamics underlying such cross-border transfers, and comparing them with the drivers of licit capital outflows. For the reasons noted, we study the behavior of two types of illicit flows—gross outflows and total flows (i.e., inflows plus outflows). In fact, a major aspect of this study focuses on the drivers of gross illicit outflows and the dynamic link between the size of the Russian underground economy and total illicit flows in both directions. The paper is organized as follows.

Section II presents a brief discussion of the various types of capital flows to and from Russia and their methodology of estimation, noting important points of departure from those typically followed in the traditional literature. We also include a brief discussion on the difference in estimates of capital flight from Russia between this and previous studies, pointing out some possible reasons for the differences. Section III examines the drivers and dynamics of total illicit flows from Russia using multiple linear regression models, recognizing that given the short sample period (1994-2011, or 18 observations) and the unavailability of quarterly macroeconomic data (particularly on the fiscal sector), it is not possible to develop a large dynamic simulation model. However, a two-equation dynamic simulation model is presented in this section, showing the interaction between total illicit flows and the underground economy. The regression results are used to shed light on specific policy measures needed to curtail the transmission of illicit capital from Russia. The final section draws concluding observations.

II. Capital Flows and their Methodology of Estimation

a. Types of Capital Flows Studied

(i) Preamble

We investigate several different types of capital flows in this study: licit, illicit, and a mix of the two. However, all estimates of capital flight, whether they are broadly defined to include a mix of licit and illicit capital, or narrowly defined to focus on one and not the other, can be derived based on the established balance of payments framework. We extend the work of Claessens and Naudé (1996) to present alternative estimates of capital flows to and from Russia and provide the rationale for their method of estimation. The question naturally arises whether we should net out capital inflows from outflows.

Economists have long studied the flight of capital from countries that are politically unstable, poorly governed or badly managed. Scores of research papers on the subject have this recurrent theme—outward transfers of capital are offset by inward flows. Yet, little attention is given to the question of whether such netting out of capital flows is warranted.

Here, we not only derive estimates of licit and illicit financial flows, but also explain why licit flows can be estimated as outflows net of inflows while illicit flows should only be estimated on a gross basis. Algebraically of course, netting out inflows from outflows is a trivial operation. But as we point out, the netting issue has serious implications for policy makers, civil society, development economists, and officials addressing governance issues. The ramifications of the netting issue extend well beyond the obvious - that the procedure understates the volume of illicit flows relative to gross outflows. For example, netting illicit flows can mask the serious adverse impact such flows can have on an economy. Consider the case of some countries in Latin America where drug trafficking is rampant. In such cases, while flows of illicit capital can be large in *both* directions, a net of the two would imply that the country has no significant issue with illicit flows. This is obviously not the case. There are other reasons why netting out illicit flows makes little sense.

First, a main reason why economists net out capital inflows from outflows is that they wish to derive a country's net gain or loss of capital over a specific period. The procedure is entirely valid when it comes to licit capital recorded in a country's balance of payments. For instance, while a country attracts foreign direct investment (FDI), domestic investors may also make direct investments abroad. Policy makers may well be interested in ascertaining whether the economy is a net gainer or loser of FDI so that netting out such flows in both directions is not only procedurally sound but also operationally important. In the case of licit flows, a capital loss can, and often does, offset a capital

gain. However, in the case of illicit capital flows, *both* the outward and inward transfers typically involve a *loss* to the government or the official economy rather than a gain. In order to assess total loss or the adverse impact of illicit flows on an economy, we should *add inflows and outflows rather than net them out.* There is no question of a net benefit accruing from illicit flows. Applying the netting out procedure that is relevant for licit flows to flows that are illicit in nature can lead policy makers, economists and others to make serious errors and draw damaging conclusions (such as illicit flows are not important in countries where drug trafficking is rampant).

Second, it is unlikely that inflows of illicit capital (that are essentially unrecorded) can be taxed or utilized for economic development. After all, how can a government tax capital that is unrecorded? How can such capital add to the productive capacity of the official economy? Often, these so-called inflows are themselves driven by illicit activities to evade import duties (by under-invoicing imports) or value-added tax (VAT) or the over-invoicing of exports to collect on VAT refunds. Money funneled through the hawala system is similarly not recorded, and is similarly untaxed. The loss of applicable customs duties and VAT tax significantly hampers the collection of government revenues in many developing countries. Hence, there is no reason to believe that money brought into a developing country through illicit channels will be declared as taxable income or can be used for economic development. Rather than add to productive capacity, inflows of illicit capital can drive a speculative real estate boom, create a housing bubble and push the country towards economic instability. The implication is clear. Traditional models of capital flight such as the World Bank Residual method cannot capture genuine reversals of illicit flight capital. A return of flight capital typically follows credible economic reform on a sustained basis and may be detected in a significant increase in *recorded* FDI or *recorded* inflows of private portfolio capital. In contrast, the inflows indicated by the residual method and those identified by trade misinvoicing, are also *unrecorded*. Why would an investor smuggle in capital from abroad if that capital in fact represents a genuine return of funds? As the Indian and Chinese experiences show, outward transfers of illicit capital could come back to a country through a process known as “round tripping”, but these inflows would show up as an uptick in *recorded* FDI and would not be captured by the capital flight models as unrecorded inflows. Instead, such flows into developing countries are symptomatic of illicit activities that drive their underground economies, skewing the distribution of income and hampering poverty alleviation. Therefore, it makes no sense to treat illicit inflows as a benefit and net them the same way as one would an inflow of legitimate capital that is recorded on the books.

Third, a number of studies have explored the link between “hawala” (or, currency substitution) transactions and trade misinvoicing. The hawala system is run by a network of hawala brokers, or hawaladars, in various countries. Hawaladars allow cash to be transferred between countries without restrictions on the amount of money, with no paper trail, and usually at a lower cost than what banks and other official channels charge. However, for hawaladars to maintain their hawala business, they must have huge reserves of cash available for immediate cash transfers. This need also prompts many hawaladars to engage in international trade which they conveniently misinvoice to bring in the needed funds. Kar (2008) found that during 2002-2006, an average of US$17.8 billion

per annum was funneled into the United Arab Emirates through trade misinvoicing—an estimate consistent with the fact that the United Arab Emirates, particularly Dubai, is a hub for hawala transactions.[5] So illicit inflows feed shady financial transactions with their own set of risks and cannot be considered as providing a source of financing that officials can tap into. Furthermore, recent studies at GFI found that Greece received billions of dollars through illicit inflows in the years prior to the financial crisis that hit the country in 2008. Yet, illicit inflows could not stave off the financial crisis and help the authorities avoid default or a multilateral bailout.

Finally, it is erroneous to net out illicit capital flows because they are illegal in both directions. In effect, netting out such flows would be akin to estimating net crime, which is not a valid concept. By extension, the netting out procedure applied to broad capital flight, which includes a mix of licit and illicit capital, is also not tenable.

Keeping these general considerations related to the applicability of the netting out procedure in mind, we now derive the various types of capital flows into and out of Russia. *We begin with the derivation of the World Bank Residual (WBR) equation which not only provides an estimate of broad capital flight but also forms the basis for estimating other types of capital flows.*

(ii) Broad Capital Flight

Economists have always considered capital flight, in its broadest sense, to consist of the cross-border transfer of licit *and* illicit capital. The WBR method was developed at the Bank in 1985. Since then, a number of studies have used the method to estimate the volume of capital flight from a country. Some economists have used the residual approach exclusively while others have adjusted the estimates by the volume of capital flows triggered by the misinvoicing of trade. Because the deliberate misinvoicing of trade is illegal in all countries, capital flows generated through trade misinvoicing are quintessentially illicit. As we shall see, the residual approach yields both licit and illicit capital flows. If such a mix of broad capital flight is adjusted by illicit flows generated through trade misinvoicing, the result is a further mix of the two types of capital.

In essence, the residual method measures the gap between recorded sources and uses of funds, which must ideally balance. The source of funds comprises the change in external debt (or inflow of new loans) and foreign direct investment, while the use of funds arises from the country's current account balance and change in reserves. While it is tempting to view the gap between recorded flows as purely unrecorded and therefore illicit, it is clear from the following discussion that the gap estimated through the WBR method consists of both licit and illicit capital.

An illicit outflow from the balance of payments is reflected in a larger source of funds relative to their recorded use. This is a positive result in the WBR measure. An inflow is identified as a negative result. Again, while economists traditionally have netted out the mix of capital flows, we

[5] Reference, Kar, Dev and Devon Cartwright-Smith, *Illicit Financial Flows from Developing Countries: 2002-2006*, Global Financial Integrity, Washington, DC, 2008.

do not do so given the error of netting out illicit flows. *Hence, in studies at GFI, we only consider gross outflows of capital using the residual method based on change in external debt (CED) as enumerated below. The only difference between the WBR and CED estimates is that while WBR is a net concept, CED represents gross outflows only.*

Let us now consider how the WBR equation is derived using the balance of payments framework. Following the nomenclature of Claessens and Naudé (1996), let A be the current account balance, B represent net equity flows (including net foreign direct investment and portfolio investment), C the other short-term capital of other sectors, D the portfolio investments involving other bonds, E the change in deposit-money-banks' foreign assets, F the change in reserves of the central bank, G the net errors and omissions (NEO), and H the change in external debt. The balance of payments identity is:

$$A + B + C + D + E + F + G + H = 0 \qquad (1)$$

or,

$$C + D + E + G = -(A + B + F + H) \qquad (2)$$

Equation (2) implies that recorded (and therefore legal) private capital flows (C + D + E) plus unrecorded transactions captured by the net errors and omissions (G) must equal the negative of the sum of the current account balance (A), net equity flows (B), change in reserves (F), and the change in external debt (H). The right hand side of the above equation is the residual equation, which by definition includes both licit (recorded) and illicit (unrecorded) capital transactions on a net basis. One could estimate capital flight using either the left- or right-hand side of the above equation—the result will be equivalent.

(iii) Licit Flows

How are licit capital flows that are recorded in the balance of payments estimated? The licit component of capital flight can be derived from the balance of payments identity as discussed above. Private sector capital flows (C + D + E) are simply equal to the negative of the WBR estimates (A + B + F + H) minus G, the net errors and omissions. We term outflows associated with NEOs the Hot Money Narrow (HMN) measure. This portion of capital flight arises as a result of private investors' portfolio decisions in response to interest rate differentials, changes in tax policy, expectations of exchange rate depreciation, other macroeconomic conditions, and, more simply, the desire to accumulate wealth outside one's country of origin. A broader version of the HMN method called the Broad Hot Money method includes certain short-term private sector flows but such an extension has the effect of mixing licit (recorded) and illicit (unrecorded) capital which we wish to avoid.

(iv) Illicit Flows

Illicit capital involves funds that are illegally earned, transferred, or utilized. Furthermore, while the term capital flight tends to place the onus of responsibility upon developing countries, the term illicit

financial flows sees the transfer as a two-way street, where the poor countries generate the flows while advanced economies facilitate their absorption. Moreover, unlike licit flows, illicit flows are unrecorded and earnings on the stock of illegal capital outside that country do not normally return. In this study, we are primarily concerned with an examination of the drivers of *illicit* capital rather than those that drive licit capital from Russia.

Illicit flows are difficult to estimate and existing economic methods are unable to capture illegal transactions that are settled in cash. The only balance of payments measure available to capture illicit or unrecorded flows is the net errors and omissions term (series G in Claessens and Naudé's (1996) framework) which is the HMN measure with a reverse sign. There are some limitations to this approach. However, given the limitations of economic methods to capture purely illicit flows, a number of researchers such as Loukine (1998), Sicular (1998), the Central Bank of Russia, and the IMF have used the HMN measure to capture outflows of unrecorded or illegal capital.

The limitations of the HMN arise from the fact that it is also a net concept and that it not only reflects the "omissions" but also the errors in recording balance of payments transactions. Economists have assumed that if the NEO is persistently and significantly negative over time, such a pattern is likely to reflect unrecorded capital flight. Consequently, while errors in statistical recording of balance of payments transactions can contribute to unrecorded flows, there is no evidence of a systemic increase in such errors over time.[6] Unrecorded (and illegal) capital flight has increasingly come to be termed illicit financial flows (which also arise from the misinvoicing of trade). Again, an important difference is the way we treat positive NEOs which economists have traditionally interpreted as inward capital flight. *In light of the error of netting out illicit flows which we discussed, we set positive NEOs to zero and take negative values as outward HMN-related illicit flows.* A comparison of Tables 1 and 2 shows how the traditional NEOs are translated into the HMN measure of illicit flows.

In contrast, the Central Bank of Russia (CBR) takes 50 percent of the HMN estimates and considers the resulting flows to be illicit. We do not do so because halving the HMN estimates would seriously understate the problem of illicit flows given that economic methods cannot capture the vast majority of illegal transactions that are settled in cash. Instead, we supplement the HMN estimates given that illicit flows can also exit a country through the deliberate misinvoicing of trade. The financial flows resulting from the deliberate misinvoicing of trade are illicit because it is illegal to misinvoice trade in almost all countries. In fact, studies at GFI show that trade misinvoicing is the dominant channel for the cross-border transfer of illicit capital from many developing countries.[7]

It may well be that a country suffers simultaneously from import over-invoicing *and* export over-invoicing, or vice-versa. In other words, trade misinvoicing can indicate outflows by one measure and inflows by another. The Gross Excluding Reversals (GER) method sets such episodes

[6] Reference, *IMF Committee on Balance of Payments Statistics Annual Report 2011*, Statistics Department, IMF, Table 1.
[7] See, for example, Kar, Dev and Sarah Freitas. *Illicit Financial Flows from Developing Countries: 2001-2010*, Global Financial Integrity, December 2012, Washington DC.

representing illicit inflows to zero and does not net them out from illicit outflows. Estimates of trade misinvoicing are derived as follows:

$$\mathbf{K = [M_i/\beta - X_j] - [X_i - M_j/\beta]}$$

In the above specification, $\mathbf{K}$ represents illicit flows through trade misinvoicing, $\mathbf{M_i}$ is a measure of imports, $\boldsymbol{\beta}$ is the cost of the freight and insurance adjustment factor (taken at 10 percent)[8], and $\mathbf{X}$ is a measure of exports. Subscript $\mathbf{i}$ refers to a given country, while subscript $\mathbf{j}$ refers to a given partner country. Outflows occur when the first half of $\mathbf{K}$ is positive, an indication of import over-invoicing and when the second half of $\mathbf{K}$ is negative, an indication of export under-invoicing. Combining the two types of outflows according to the formula above yields a positive value for $\mathbf{K}$, which indicates the total amount of money illicitly transferred out of the country through trade misinvoicing. Gross illicit outflows from the HMN measure adjusted for trade misinvoicing (based on the GER method) is collectively termed the HMN+GER measure.

It should be noted that, for a number of reasons, the GER method of estimating trade misinvoicing yields very conservative estimates of related illicit outflows. First, the GER method cannot capture illicit flows generated through what we call "same invoice faking". When we find significant discrepancies between import and export values between trading countries as revealed in IMF DOTS data, this signifies transactions that have been re-invoiced somewhere in the supply chain between export and import. Transactions where misinvoicing takes place within the same invoice, as agreed (often through word-of-mouth collusion) between buyers and sellers, does not produce a difference between export and import values. Thus, this method of trade misinvoicing does not show up in our DOTS-based analysis. Second, DOTS data, limited to merchandise trade, does not include services and intangibles. In fact, there is at present no comparable database on trade in services on a bilateral basis for all developing and developed counties, although the Organization for Economic Cooperation and Development (OECD), the United Nations Conference on Trade and Development (UNCTAD) and the United Nations statistical systems have made significant progress in coverage of trade in services on a bilateral basis. These areas have become major conduits for trade misinvoicing in recent years, and none of these methods, used to transfer illicit funds, are included in our GER estimates.

In the early 1990s, many Russian exporters were very substantially under-pricing their exports, particularly to Europe (see article on oil prices and capital flight, Box 2). Russian oil, for example, was seen crossing borders priced as low as US$10 per metric ton. Kickbacks were paid by importers into European bank accounts of these exporters, moving money out of the country. In further development of mechanisms for shifting money abroad, many Russian companies set up offices in Europe and elsewhere to buy their own exports. In other words, Russian companies were selling to themselves—and substantially under-pricing sales to their subsidiary European buying

[8] See 2011 IMF Direction of Trade Statistics Manual for details on use of a 10 percent c.i.f. factor.

offices and thus generating huge revenues outside the country. To facilitate this, Russian companies set up their own banks to handle trade documentation and financial transfers. Whereas in 1988 there were only four banks in Russia, by 1996 there were some 2,600 banks. These "pocket" banks played a major role in trade misinvoicing. While the number of banks has since dropped to about 850, collusion among exporting companies, European subsidiaries, and their own banks continues to generate massive illicit financial flows, particularly through the mechanism of same invoice faking, which is not captured in GER estimates.

GFI's analysis of illicit financial flows is based on data filed by governments with the World Bank and IMF. However, because the GER method cannot capture same invoice faking and services trade, estimates of illicit outflows are likely to be significantly understated. That said, as both inflows and outflows of illicit capital are harmful to an economy, it would be logical to *add* inflows and outflows to estimate the total volume of illicit flows. We could then gauge the extent to which total illicit flows both drive and are driven by the underground economy.

To recapitulate, the following table summarizes the main types of capital covered in this study and how inflows and outflows are treated depending upon whether they are licit or illicit. The last column of the table also shows the hypothesis we seek to test regarding the factors that drive licit and illicit capital.

Table 1. Russia: Types of Capital Flows and Applicable Methodology

Types of Capital Flows	Recorded or Unrecorded	Methodology	Treatment of inflows and outflows	Underlying rationale for treatment of inflows and outflows	Estimates Included?	Possible Drivers
Broad capital flight (net)	Recorded & Unrecorded	WBR (net)+ Trade misinvoicing (net)	Net of inflows and outflows for both components	Economists treat a mix of licit and illicit capital the same way as they treat purely licit capital	No	Not covered in this study
Broad capital flight (outflows only)	Recorded & Unrecorded	CED + GER (outflows only)"	Only outflows are included in estimates; Inflows are set to zero	Mix of licit and illicit capital makes netting out logically flawed	Yes	Not covered in this study
Licit capital flight	Recorded	WBR (net) minus NEO	Net of inflows and outflows	A net position can be estimated with regard to licit flows that are recorded	Yes	Macroeconomic factors and others drivers that could impact business climate (including governance)
Illicit capital flight	Unrecorded	HMN + GER	Outflows only	Cannot net out illicit flows because they are illegal flowing in and out of a country	Yes	Governance factors mainly; do economic factors also matter?
Total illicit flows	Unrecorded	HMN+GER	Outflows plus inflows	To measure total adverse impact of illicit flows, add outflows to inflows	Yes	Underground economy both drives and is driven by total illicit flows

III. Evolution and Pattern of Illicit Flows

a. Pattern of Outflows

The Russian Federation came into existence on December 25, 1991, after the disintegration of the former Soviet Union, a fragmentation that partly resulted from its failed economic policies. As a result, wide-ranging economic reforms were initiated during the period just before and after the breakup of the Union. In dismantling the structures of central planning, radical economic reform sought to transform Russia to a market-based economy and place the country on a sustainable path to economic growth and stability.

As prices were liberalized and loss-making public sector agencies were privatized, monetary policy was implemented by an increasingly professional Central Bank, rather than through a central command. As privatization began to take hold, control of business shifted from the government to the private sector. However, the period of transition to a market-based economy was also fraught with uncertainties, risks of failure, and wariness among investors.

Table 2. Recorded and Unrecorded Financial Flows to and from Russia, 1994-2011
(in millions of U.S. dollars, unless otherwise indicated)

Year	Source of funds (A)	Use of funds (B)	NEO (C)	Private sector flows (D)	World Bank Residual (A+B)	Mirror of Residual (C+D)	Unrecorded share (%) C/(C+D)	Recorded share (%) D/(C+D)
1994	10,226	9,779	429	-20,434	20,005	-20,005	2.1	97.9
1995	1,086	-3,419	-8,651	10,985	-2,334	2,334	44.1	55.9
1996	6,630	13,687	-7,257	-13,060	20,317	-20,317	35.7	64.3
1997	2,885	-2,011	-8,781	7,907	874	-874	52.6	47.4
1998	51,711	5,525	-9,350	-47,886	57,237	-57,237	16.3	83.7
1999	-1,943	22,844	-8,479	-12,423	20,901	-20,901	40.6	59.4
2000	-15,223	30,830	-9,297	-6,310	15,607	-15,607	59.6	40.4
2001	-7,281	25,724	-9,558	-8,884	18,443	-18,443	51.8	48.2
2002	-5,195	17,741	-6,078	-6,468	12,546	-12,546	48.4	51.6
2003	26,533	9,046	-9,179	-26,400	35,579	-35,579	25.8	74.2
2004	22,770	14,276	-5,870	-31,176	37,046	-37,046	15.8	84.2
2005	43,246	23,141	-7,913	-58,474	66,388	-66,388	11.9	88.1
2006	17,383	-12,779	9,518	-14,121	4,603	-4,603	40.3	59.7
2007	119,752	-71,159	-13,347	-35,246	48,593	-48,593	27.5	72.5
2008	60,797	142,454	-11,277	-191,974	203,251	-203,251	5.5	94.5
2009	-36,472	45,228	-1,726	-7,030	8,756	-8,756	19.7	80.3
2010	2,086	34,329	-8,285	-28,130	36,415	-36,415	22.8	77.2
2011	13,275	86,204	-9,990	-89,489	99,479	-99,479	10	90
Sum	298,990	305,236	-115,102	-489,125	604,226	-604,226	29.5 1/	70.5 1/

1/ Refers to average shares over the period.

Table 2 presents estimates of various types of capital flows to and from Russia which were discussed at the outset in order to derive recorded and unrecorded financial flows to and from the country. Together, these flows capture the balance of payments identity in that, barring errors due to rounding, columns

$$A + B + C + D = 0$$

The major components, (A), (B), (C), and (D), are based on Claessens and Naudé (1993). The source of funds (column A) consists of new loans (measured by the change in outstanding external debt) and net foreign direct investment (inward FDI minus outward FDI) while the use of funds (column B) consist of financing the current account deficit (a surplus is a negative use) and addition of reserves (a drawdown of reserves becomes a source of funds). Inward flows are represented by positive signs (increase capital flight) while outward flows are negative (decrease capital flight). This nomenclature allows us to simply add the source and use of finds to estimate capital flight (column A+B). The balance of payments identity implies that the net errors and omissions (column C) plus private sector flows (Column D) is equal to the World Bank Residual with sign reversed. Since NEO represents unrecorded flows and private sector flows are recorded, we can estimate their shares in total capital flight (last two columns).

Note that given the balance of payments identity, a positive capital flight (column A+B), is driven by the net of the NEO (column C) and private sector flows (column D). For instance in 1994, there were private sector outflows of US$20.4 billion which was offset by net inflows of US$0.4 resulting in residual outflows of US$20 billion, whereas in 2011, both NEO and private sector flows register outward flows amounting to US$99.5 billion.

We see from columns C and D that over the period 1994-2011, recorded private sector flows from Russia have grown at a much faster pace than unrecorded capital outflows. While the share of recorded and unrecorded capital has tended to vary significantly from year to year, on average recorded and therefore legal capital flight from Russia amounts to 70.5 percent whereas the unrecorded component, which mainly represents illicit flows, amounts to 29.5 percent.

It should be clearly understood that the shares of licit and illicit capital presented in the table are on a net and not a gross basis. Net shares may not be indicative of the size of gross flows. The reason why the shares of licit and illicit capital presented in Table 2 are on a net basis is because the HMN (NEO with a reverse sign) is itself a net concept as it is based on inflows and outflows of capital that are recorded on a net basis in the balance of payments. Small net errors and omissions may well mask large unrecorded transactions in both directions because a net position can be consistent with any number of gross flows. In other words, just because the net shares of unrecorded flows are smaller than those of recorded flows does not necessarily mean that on a gross basis (outflows *plus* inflows), recorded flows would still continue to dominate the volume of unrecorded flows.

The other major reason why unrecorded flows may be significantly understated relative to recorded flows arises simply from the fact that the balance of payments framework is not capable of capturing smuggling, trade in contraband goods, human trafficking, and other illegal transactions that are mainly settled in cash. Nevertheless, the disaggregation of financial flows into recorded and unrecorded portions (which can be broadly interpreted as involving licit and illicit capital respectively) is helpful because this approach allows a sharper focus on the factors that drive them.

Table 3 presents estimates of capital flight using the CED+GER approach used in past studies at GFI. Read together, Tables 2 and 3 show how CED, NEO, HMN, and other concepts are related. We see that estimates of inward capital flight under the World Bank Residual method (e.g., US$2.3 billion in 1995 shown in Table 2) are set to zero in the CED column in Table 3. Similarly, positive NEOs presented in Table 2 indicating inward illicit flows are set to zero in Table 3 under the HMN column.

Table 3. Alternate Estimates of Illicit Financial Outflows from Russia, 1994-2011
(in millions of U.S. dollars)

	Balance of Payments Channels		Trade Misinvoicing	Capital Flight	
				Licit and Illicit	Illicit
Year	CED	HMN	GER	CED+GER	HMN+GER
1994	20,005	0	0	20,005	0
1995	0	8,651	0	0	8,651
1996	20,317	7,257	0	20,317	7,257
1997	874	8,781	0	874	8,781
1998	57,237	9,350	0	57,237	9,350
1999	20,901	8,479	500	21,402	8,979
2000	15,607	9,297	0	15,607	9,297
2001	18,443	9,558	19,269	37,712	28,827
2002	12,546	6,078	0	12,546	6,078
2003	35,579	9,179	2,633	38,212	11,812
2004	37,046	5,870	14,507	51,553	20,377
2005	66,388	7,913	0	66,388	7,913
2006	4,603	0	0	4,603	0
2007	48,593	13,347	0	48,593	13,347
2008	203,251	11,277	0	203,251	11,277
2009	8,756	1,726	6,193	14,949	7,919
2010	36,415	8,285	33,360	69,775	41,645
2011	99,479	9,990	0	99,479	9,990
Cumulative	**706,039**	**135,039**	**76,462**	**782,501**	**211,501**
Average	**39,224**	**7,502**	**4,248**	**43,472**	**11,750**

Let us now consider estimates of capital flight (CED+GER) versus purely illicit outflows (HMN+GER). As we noted, the CED and HMN are both measures of the balance of payments component of capital flight, while the GER measures outflows due to trade mispricing. As we saw in Section II, the CED and HMN are derived using the balance of payments framework. The CED estimates correspond to WBR outflows while the HMN measures illicit outflows (with any inflows set to zero).

Typically, CED+GER estimates of total capital outflows are larger than illicit outflows, though this is not always the case (e.g., 1997). By definition, the CED measures only gross outflows, while the HMN measure is based on a net concept (and therefore only negative HMN representing net

outflows are considered to be illicit transfers). Hence, one cannot derive the licit component simply by netting out HMN+GER from CED+GER. *According to the balance of payments identity, licit private sector flows are obtained by adding the World Bank Residual estimates to the HMN; the sign is reversed so that the three add to zero.*

While the gross capital flight (CED+GER) and illicit outflows (HMN+GER) are strictly not comparable, we can observe that cumulative gross outflows of capital amounting to US$782.5 billion (CED+GER) dwarf cumulative illicit outflows of US$211.5 billion (HMN+GER) over the period 1994-2011 (Table 3). In fact, gross capital flight exhibits much larger swings than do gross illicit outflows. This is perhaps due to the fact that a wider range of complex factors drive capital flight than flows that are purely illicit in nature. However, as we shall see later, that does not necessarily imply that the drivers of illicit financial flows are easier to capture.

It is clear that, as Russia struggled to replace the old order with an untried new order, capital flight broadly measured by the CED+GER averaged about US$20 billion per annum from 1994-1999. But macroeconomic instability along with continued weaknesses in governance and increasing lawlessness were responsible for boosting capital flight to an average of US$49.3 billion per annum over the next decade ending 2009. Over the last two years 2010-2011, the pace of such outflows accelerated to US$84.7 billion per annum. In contrast, illicit outflows have not ratcheted upwards on a comparable scale. From an average of US$7.2 billion per annum over 1994-1999, illicit outflows crept up to just US$11.7 billion per annum over the decade ending 2009, although over the last two years, they surged to nearly US$26 billion per annum (Table 3). Much of the outflows are recorded and therefore licit as opposed to being illicit. *That said, we emphasize that while almost all licit capital flight is recorded in the balance of payments, a major portion of illicit flows (generated through illegal activities such as drug and human trafficking, smuggling, etc. which are settled in cash), cannot be captured by economic methods. Therefore, the share of illicit capital in total capital flight is likely to be significantly understated.*

On balance, the pace of increase in illicit outflows is much lower than that of capital flight in general and the year-to-year fluctuations are also lower. One reason for this difference in behavior perhaps lies in the fact that the governance-related drivers of illicit flows have a steadier capacity to generate such funds than has the complex interplay of forces to drive a mix of licit and illicit funds from the country.

Let us consider macroeconomic drivers. Although a well-managed and technically competent CBR made impressive gains in achieving price stability, the efficiency and effectiveness of fiscal policy lagged behind due to archaic tax and budget policies and rudimentary fiscal policy tools in general. As a result, tax evasion was endemic in the face of systemic weaknesses in tax collection mechanisms, although inflation abated somewhat in later years. Swings in exchange rate expectations can also drive the cross-border transfer of licit capital in short order.

As the IMF notes "Apart from portfolio diversification, a number of factors including macroeconomic instability, weaknesses in the enforcement of property rights, pervasive tax evasion, and inadequate supervision and regulation of the banking sector have contributed to the outflow of capital from Russia".[9] A few other channels not mentioned by the IMF are (i) transfers of illicit earnings through bribery, kickbacks, extortion, and asset stripping, (ii) proceeds of drug-trafficking and transactions in other contraband goods, (iii) human trafficking, and (iv) sex trade. Broad capital flight includes the transfer of capital that is recorded (or licit) as well as unrecorded (or illicit).

We observe that nearly 91 percent of total capital flight over the period 1994-2011 was due to leakages from the balance of payments (based on CED estimates) rather than through the misinvoicing of trade (obtained using the GER method). This indicates that the proceeds of bribery, kickbacks, and other illegal transactions are transferred out of the country through unrecorded banking transactions rather than deliberate trade misinvoicing.

b. Comparison of Estimates with Past Studies

As Sicular (1998) points outs, estimates of capital flight from Russia vary significantly depending upon the definition of capital flight and the methodology used to make the estimates. However, his observations regarding the reliability of Russia's balance of payments statistics is somewhat dated. According to the IMF, the quality of Russian data has in general improved. For this reason, the CBR's definition of capital flight includes both licit as well as illicit capital based on the balance of payments. The CBR includes 50 percent of the net errors and omissions line to capture the unrecorded and illegal capital transactions. However, the CBR's method could understate the volume of illicit flows as it does not include the significant amount of illicit flows generated through the deliberate misinvoicing of trade. On the other hand, GFI estimates total capital flight measured through gross outflows using its CED+GER measure. In addition, we estimate the purely *illicit* component of capital flight using the HMN+GER measure.

The purpose here is not to present estimates based on comparable methodology. Such an approach will not work because there is a lack of uniformity and consensus regarding the underlying methodology to estimate capital flight. The purpose is to simply present various estimates of capital flight (broadly defined, meaning they include both licit and illicit flows) in order to see how they differ from estimates of outflows that are likely to be purely illicit in nature.

Keeping in mind the differences in methodology, Table 4 shows that, for the period 1994-2011, cumulative gross outflows total licit and illicit capital from Russia of US$782.5 billion (estimated using the CED+GER method). The IMF and the CBR estimate net outflows to be US$552.9 billion and US$343.2 billion respectively. Apart from the fact that CED+GER estimates are gross outflows

[9] Op. cit, Reference, *Russian Federation: Staff Report for the 2000 Article IV Consultation and Public Information Notice Following Consultation*, IMF Staff Country Report No. 00/145, November, 2000, Box 2, page 19.

Table 4. Russia: Other Published Estimates of Capital Flight

(in billions of U.S. dollars)

Year	Slay/U.S. Joint Econ. Committee 1/	IMF 2/	BEA 3/	EIU 4/	Brada et. Al. 5/	Abalkin and Whalley 6/	CBR 7/
1994	9.0	16.7	...	...	...	25.5	14.4
1995	13.0	4.0	...	...	21.7	9.0	3.9
1996	24.0	25.0	28.9	...	37.0	12.8	23.8
1997	30.0	22.3	27.2	...	15.7	28.2	18.2
1998	17.0	26.8	24.9	...	49.1	18.9	21.7
1999	11.0	22.0	18-20 (est.)	...	23.2	...	20.8
2000	15.0	21.9	...	23.6	29.6	...	24.8
2001	...	18.3	...	21.6	19.0	...	15
2002	...	21.6	...	15.0	14.8	...	8.1
2003	...	24.4	...	15.0	24.0	...	1.9
2004	...	30.1	...	13.8	23.5	...	8.9
2005	...	42.3	...	19.9	42.8	...	0.1
2006	...	20.7	...	17.7	...	...	-41.4
2007	...	57.7	...	...	...	...	-81.7
2008	...	118.5	...	...	...	...	133.7
2009	...	17.5	...	...	...	...	56.1
2010	...	24.5	...	...	...	...	34.4
Cumulative, 1994-2011 8/	**129.0**	**552.9**	**81.0**	**126.6**	**300.5**	**134.4**	**343.2**
Average, 1994-2011 8/	**16.1**	**30.7**	**27.0**	**18.1**	**27.3**	**22.4**	**19.1**
Cumulative, 1995-1998	**84.0**	**78.1**	**...**	**...**	**123.5**	**68.9**	**67.6**
Average, 1995-2008	**21.0**	**19.5**	**...**	**...**	**30.9**	**17.2**	**16.9**
Cumulative, 2000-2005	**...**	**158.6**	**...**	**108.9**	**153.8**	**...**	**58.8**
Average, 2000-2005	**...**	**26.4**	**...**	**18.2**	**25.6**	**...**	**9.8**
Cumulative, 2006-2011	**...**	**277.5**	**...**	**...**	**...**	**...**	**181.6**
Average, 2006-2011	**...**	**46.3**	**...**	**...**	**...**	**...**	**30.3**
Cumulative, 1995-2005	**...**	**258.7**	**...**	**...**	**300.5**	**...**	**147.2**
Average, 1995-2005	**...**	**23.5**	**...**	**...**	**27.3**	**...**	**13.4**

1/ Russia's Uncertain Economic Future, Compendium of Papers submitted to the Joint Economic Committee, Congress of the United States, U.S. Government Printing Office, 2002. (Slay, Ben. *The Russian Economy: How Far from Sustainable Growth?*)

2/ Russian Federation: Staff Report for the 2000 Article IV Consultation and the Public Information Notice Following Consultation, IMF. Staff Country Report No. 00/145. Data for the years 1994-1999 are based on Indicator B. Data for the years 2000 onward are GFI calculations based on the IMF Indicator B methodology, net errors and omissions plus other outflows.

3/ Capital Flight: Scale and Nature, Grigoryev, L., and A. Kosarev, BEA survey ("Economic Policy in Russia in 2000") , 2000.

4/ EIU Country Reports, various issues.

5/ The costs of moving money across borders and the volume of capital flight: the case of Russia and other CIS countries, Brada, Josef C., Ali M. Kutan, and Goran Vuksic, Review of World Economics, 2011

6/ The Problem of Capital Flight from Russia, Abalkin, A. and J. Whalley, The World Economy, 1999. Joint project undertaken by the Institute of Economics in Moscow and the Center for the Study of International Economic Relations, University of Western Ontario, Canada.

7/ Russian Central Bank, Net Inflows/Outflows of Capital by Private Sector in 1994-2011.

8/ Over the period covered.

while the IMF and CBR estimates are based on net flows, the CED+GER estimates are also larger due to trade misinvoicing, which is not included in the other two measures. In contrast and as expected, illicit outflows over the same period based on the HMN+GER method come in much lower at US$211.5 billion.

The table also presents alternate estimates of the cumulative and average capital flight and illicit flows from Russia for overlapping time periods covered under several previous studies. For instance, Brada et. al (2011) found that Russia lost a total of US$300.5 billion over the period 1995-2005, while according to the CED+GER methodology, we find that the capital lost amounted to US$321.6 billion. In general, we find that CED+GER estimates are closer to the IMF's net estimates of capital flight even though the former are on a gross outflow basis. As expected, because illicit flows are a narrower measure of capital flight, a cumulative outflow of US$34.1 billion (or US$8.5 billion per annum on average) is far below any of the capital flight estimates found in other studies. For the period 2000-2005, the CED+GER estimates are again closer to the IMF's estimates than any other. However, for the next six-year overlapping period 2006-2011, the difference between the IMF and GFI estimates widen considerably due mainly to an increase in trade misinvoicing outflows, which are not included in the IMF estimates. We observe that purely illicit outflows of around US$14 billion per annum is around two to three times lower than broad capital flight estimates found in past studies.

Because the HMN+GER method already understates estimates of illicit outflows (as the method cannot capture illicit outflows due to the misinvoicing of trade in services, drug trafficking, smuggling, human trafficking, trade involving counterfeit goods, etc.), we did not adopt the CBR's approach of adding only 50 percent of the net errors and omissions to legal capital outflows from the private sector to derive an estimate of illicit financial flows. Following is a brief discussion of the CBR's methodology for estimating broad capital flight which includes licit and illicit capital outflows.

c. Methodology Adopted by Central Bank of Russia

According to the IMF, given the importance of the issue of capital flight and the fact that "curbing it has become a cornerstone of the authorities' recent economic policies", the CBR has developed a method for estimating capital flight from the country.[10] The CBR's methodology is based on the identification of three sources of flight capital in the financial account of Russia's balance of payments—non-receipt of export earnings, import advances that have not been redeemed, and nonequivalent (cross-border) barter. This total is then bumped up by adding 50 percent of net errors and omissions on the premise that the other half represents true errors in measurement and not capital flight. The CBR also estimates capital flight using a "somewhat broader measure" whereby

[10] Reference, International Monetary Fund (2000). *Russian Federation: Staff Report for the 2000 Article IV Consultation and Public Information Notice Following Consultation*. IMF Staff Country Report No. 00/145. Washington DC: IMF, November 2000, Box 2, page 19. Also, see International Monetary Fund (1999). *Russian Federation: Recent Economic Developments.* IMF Staff Country Report No. 99/100 Washington DC: IMF, September, 1999.

it combines the entire net errors and omissions with certain short-term portfolio outflows from the private sector—which is known as the Hot Money Broad (HMB) method in academic literature.

It is not surprising that the CBR's estimates of capital flight are significantly understated compared to the CED+GER method used in this study. There are several reasons for the understatement. First, illicit capital is generated in many more ways (e.g., bribery, kickbacks, asset stripping, smuggling, tax evasion, transactions involving certain contraband goods) than simply export earnings that have not been repatriated or import advances that have not been redeemed. The volume of illicit flows through cross-border barter is also likely to be small and declining over time, given increasing globalization and financial intermediation. Second, the proportion (50 percent) of net errors and omissions that is attributed to capital flight is arbitrary and will understate such outflows as the quality and reliability of balance of payments estimates improves. Finally, even the so-called broader measure of capital flight, derived by taking the sum of errors and omissions (illicit capital) and certain (licit) short-term capital flows from the private sector, i.e. the HMB, does not fully capture total capital flight.[11]

Researchers have largely abandoned the HMB method in favor of the WBR model because, while both measures capture licit and illicit capital, the latter covers a wider group of licit outflows. The residual estimates are "adjusted" for capital flight through trade misinvoicing because, as the IMF clearly notes, "The channels of illegal capital flight are well recognized. These have included (i) under-reporting of export earnings, including through transfer pricing schemes; (ii) overstatement of import payments, including through fake import contracts for goods and services; (iii) fake advance import payments; and (iv) a variety of capital account transactions, often effected through the correspondent accounts of nonresident banks with Russian banks."[12] Given that the central bank's measure of capital flight only captures a small number of these illegal ways of transferring capital out of the country, a comprehensive methodology must explicitly capture illicit flows through trade misinvoicing and other unrecorded capital account transactions involving Russian banks. Given our focus on illicit flows, we adopt the HMN+GER approach, which captures unrecorded transactions through the balance of payments and adjusts them to include outflows due to the misinvoicing of trade. This approach is preferred over the CED+GER method which carries a higher risk of including licit flows in light of the discussion in Section II (ii) (Broad capital flight).

[11] Responding to an email query from GFI, the Russian Central Bank noted that the balance of payments includes a series on fictitious transactions. These are comprised of (i) import values that were not delivered and (ii) fictitious transactions with securities, loans, etc., which are based on Federal Customs Service records and other sources.

[12] Box 2, op.cit.

IV. The Drivers and Dynamics of Total Illicit Flows to and from Russia

a. Preamble

Past research at GFI shows that drivers of broad capital flight can be classified into three main categories: macroeconomic, structural, and governance-related (Table 1).[13] Macroeconomic drivers consist of inflation, interest rate differentials, and the real effective exchange rate, among other measures. Structural indicators are mainly captured by income inequality, unemployment, and trade openness without oversight. The governance-related category is arguably the most important of the three, as it can be used to explain illicit flows transferred both into *and* out of Russia. Thus we give primary focus to governance in this section, exploring the link between total illicit flows and governance, Russia's governance deficit, and the use of the underground as a proxy for governance. Later we test our governance proxy to see how it performs with total illicit flows in a simultaneous equation model.

b. Governance Drivers of Illicit Flows

i. The Role of Governance in Total Illicit Flows

We can see that both illicit outflows and inflows play an important role in driving total illicit flows over the period 1994-2011 (Table 5). Flows in both directions are estimated independently using the HMN measure and the method of capturing trade misinvoicing. As shown in Table 5, both illicit inflows and illicit outflows are significant in Russia, a finding that can be traced to weaknesses in overall governance which has been pointed out by Buiter and Szegvari (2002), Loungani and Mauro (2000), Tikhomirov (1997), and others.

Russian illicit flows were characterized by the domination of outflows from the balance of payments side, and the pervasiveness of illicit *inflows* through trade misinvoicing. Most outflows through trade misinvoicing possibly occurred through the under-invoicing of oil exports. As Tikhomirov (1997) notes, following liberalization of oil trade, Russia was sometimes selling crude oil *below* world market prices while control over nickel exports led to export over-invoicing.[14] Over the period 1994-2011, HMN-related outflows on the balance of payments side amount to US$135.0 billion, while HMN-related inflows are virtually non-existent (amounting to just US$9.9. billion). This pattern contrasts sharply with illicit flows through trade misinvoicing, where illicit inflows dominate. The data show that cumulative import under-invoicing over this period totaled US$397.1 billion, and was the primary means of bringing in illicit capital. While cumulative inflows of US$145.8 billion through export over-invoicing were substantial, they pale in comparison to import under-invoicing.

[13] Reference, Kar, Dev (2011), *Illicit Financial Flows from the Least Developed Countries: 1990-2008*, United Nations Development Programme (UNDP), Discussion Paper for The United Nations IV Conference of LDC Ministers at Istanbul, Turkey, May 2011.
[14] Reference, Tikhomirov (1997), page 605, Table 3.

Table 5. Russia: Components of Total Illicit Flows

(in millions of U.S. dollars)

Year	Outflows			Inflows			Total Illicit Flows 1/
	Hot Money Narrow	Export Under-invoicing	Import Over-invoicing	Hot Money Narrow	Export Over-invoicing	Import Under-invoicing	
1994	0	0	0	-429	-4,406	-6,220	11,055
1995	8,651	0	0	0	-3,186	-10,931	22,768
1996	7,257	0	0	0	-4,652	-18,490	30,399
1997	8,781	0	0	0	-5,799	-17,693	32,273
1998	9,350	0	0	0	-1,202	-13,719	24,271
1999	8,479	500	0	0	0	-8,482	17,461
2000	9,297	0	0	0	-180	-12,624	22,101
2001	9,558	19,269	0	0	0	-19,630	48,457
2002	6,078	0	0	0	-2,918	-16,688	25,684
2003	9,179	2,633	0	0	0	-24,271	36,083
2004	5,870	14,507	0	0	0	-39,425	59,802
2005	7,913	0	0	0	-4,487	-40,345	52,745
2006	0	0	0	-9,518	-4,815	-44,233	58,566
2007	13,347	0	0	0	-18,752	-48,491	80,590
2008	11,277	0	0	0	-17,326	-46,638	75,241
2009	1,726	6,216	0	0	0	-16,913	24,855
2010	8,285	0	33,260	0	-41,625	0	83,170
2011	9,990	0	0	0	-36,424	-12,338	58,752
Cumulative	**135,039**	**43,125**	**33,260**	**-9,947**	**-145,772**	**-397,131**	**764,274**
Average	**7,502**	**2,396**	**1,848**	**-553**	**-8,098**	**-22,063**	**42,460**

Source: Global Financial Integrity
Note: Negative signs refer to inflows, positive signs refer to outflows.
1/ Inflows and outflows are added without regard to sign. Total illicit flows consist of the sum of gross illicit inflows and outflows through: (i) the balance of payments (based on the HMN+GER measure), (ii) export misinvoicing, and (iii) import misinvoicing.

The propensities and motivations of traders to misinvoice trade in this manner and the governance-related weaknesses that permit such transactions need to be examined in an in-depth manner by regulatory agencies such as the Central Bank of Russia, the Ministry of Finance, and the Customs Administration. Such an examination can have important implications for government revenues and contribute towards closing the governance deficit related to government effectiveness, rule of law, and regulatory oversight. For instance, if the prevalence of import under-invoicing is confirmed, the concerned agencies, with the cooperation of customs, could further investigate the types of goods and bilateral trading partners most susceptible to under-invoicing.

Most imports into Russia are subject to a value-added tax (VAT). In addition, customs duties are levied based on the Harmonized System of commodity classification and the country of origin of the imports. While most customs duties are based on the value of goods (i.e., ad valorem duties), duties can also be based on volume or quantity (i.e., specific duties). Moreover, the volume of import under-invoicing could also be analyzed in terms of changes in import tariffs, VAT, and their structures. Similarly, VAT and customs duties may also apply to exports. For example, while a VAT is not payable on exports of crude oil, customs duties are levied on exports of oil and oil products as well as other energy products such as natural and petroleum gas.

While these are matters for further research, it is clear that the practice of import under-invoicing may be seriously undermining the government's efforts at revenue mobilization by promoting tax evasion. The government also needs to examine whether export over-invoicing is related to fraudulent means of collecting any export subsidies.

ii. Exploring the Link Between Governance and Total Illicit Flows

We hypothesize that there is a link between the state of overall governance in Russia and the total volume of illicit financial flows into and out of the country. There is no question that governance is a serious issue in Russia (see article in Box 1 and supporting Charts 1-6). The analysis is based on six governance indicators compiled through survey information conducted by the World Bank, namely voice and accountability, political stability/absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption.

The information collected through surveys that are used to compile these indicators is necessarily judgmental. Moreover, as the World Bank points out, one must not read too much into year-to-year changes in the indicators but rather seek to discern changes over a long time period to observe governance-related patterns and trends. A recent IMF country report on Russia has also compared Russia's governance indicators to those of other BRIC countries.[15]

While the World Bank governance indicators make a powerful point regarding Russia's growing governance deficit, the question is, how does one capture a complex variable like the state of overall governance that can be tested in a simultaneous equation model? The main problem of using these indicators is related to the difficulty of aggregating them into one index that captures the overall state of governance. Hence, not only are governance indicators based on survey information judgmental, they are extremely difficult to quantify and test empirically.

[15] International Monetary Fund (2012), *Russian Federation: Staff Report for the 2012 Article IV Consultation*, Country report No. 12/217, August.

Box 1. Russia's Yawning Governance Deficit, 1996-2011

Sarah Freitas

Russia's weak investment climate remains an important obstacle to curtailing capital flight and shrinking the size of the underground economy. In 1996, Russia made an official request for OECD membership, which is yet to materialize. In spite of achieving "road to accession" status eleven years later, Russia has made no significant improvements to institutional and governance-related indicators.

Charts 1-6 show recent developments in six governance indicators compiled by the World Bank—voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption. Each indicator is measured on a scale of -2.5 to 2.5, with -2.5 being the weakest and 2.5 the strongest. By every measure, Russia has not only significantly lagged behind the G-7 countries as a whole, but has consistently remained in weaker territory (negative values) compared to the corresponding G-7 score. In fact, Russia has *increased* its governance deficit with regard to the average G-7 score related to voice and accountability and control of corruption.

But World Bank governance indicators are neither the only measures of governance nor the only governance measure where Russia lags behind the G-7 countries. Let us consider the underground economy, a proxy for governance independent of the World Bank indicators. In countries where overall governance is weak, the underground economy is large and growing, while in countries with strong governance, the underground economy tends to be small. Table 6 shows a comparison of the size of the underground economy in Russia versus each of the G-7 countries, based on a 2010 World Bank report. On average, the Russian underground economy as a share of official GDP is 3.5 times larger than corresponding shares in G-7 countries.

Table 6. Size of the Underground Economy in Russia and the G-7, 1999-2007

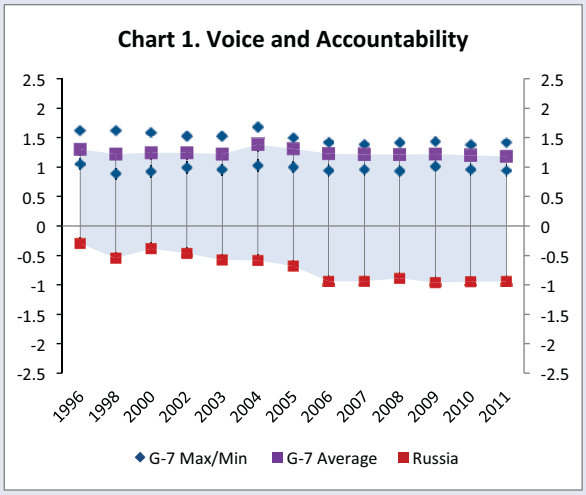
(percent of official GDP)

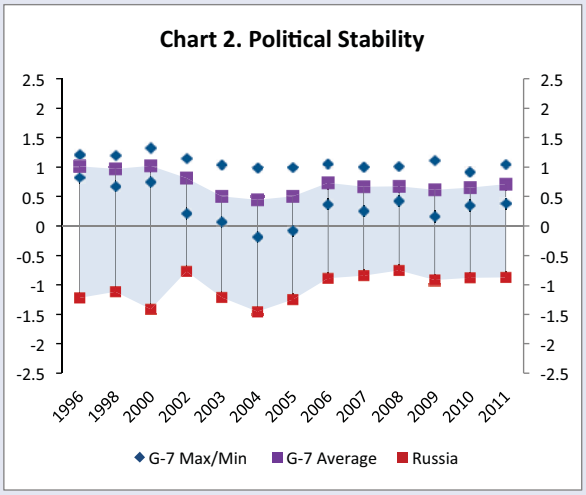
Country	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average
United States	8.8	8.7	8.8	8.8	8.7	8.6	8.5	8.4	8.4	8.6
Japan	11.4	11.2	11.2	11.3	11.2	10.9	10.7	10.4	10.3	11.0
United Kingdom	12.8	12.7	12.6	12.6	12.5	12.4	12.4	12.3	12.2	12.5
France	15.7	15.2	15.0	15.1	15.0	14.9	14.8	14.8	14.7	15.0
Germany	16.4	16.0	15.9	16.1	16.3	16.1	16.0	15.6	15.3	16.0
Canada	16.3	16.0	15.9	15.8	15.7	15.6	15.5	15.3	15.3	15.7
Italy	27.8	27.1	26.7	26.8	27.0	27.0	27.1	26.9	26.8	27.0
Russian Federation	47.0	46.1	45.3	44.5	43.6	43.0	42.4	41.7	40.6	43.8

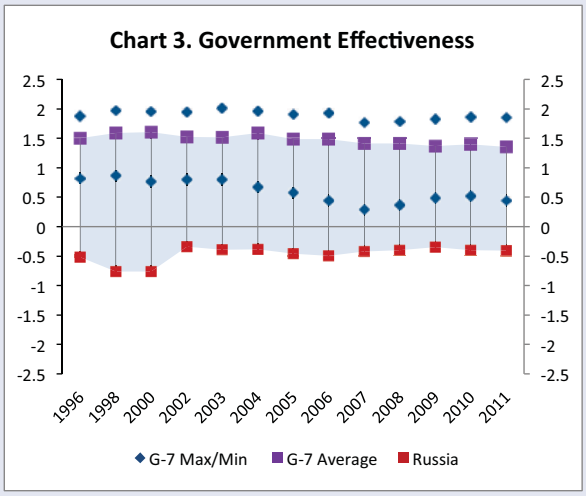
Source: Schieder, Friedrich, Andreas Buehn, and Claudio Montenegro. "Shadow Economies All Over the World", World Bank Policy Research Working Paper, 2010.

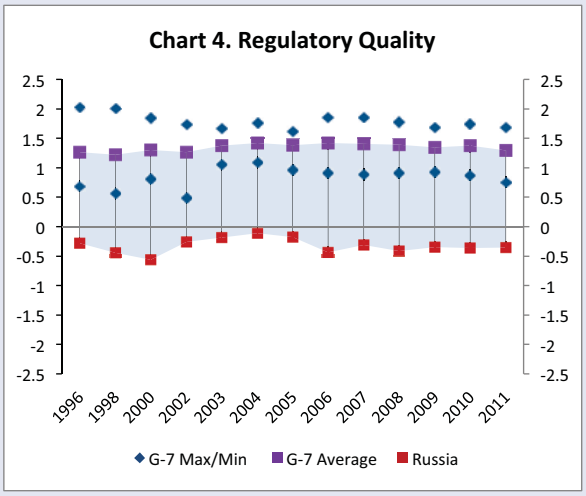
A major focus of this study has been developing a measure of the underground economy in order to proxy the state of overall governance in Russia (see Section IV.b.iii). This measure provides the foundation of the simultaneous equation model. In dynamic simulation, our objective is to capture the strong and significant interaction between the underground economy and illicit flows. We find that illicit flows fuel the growth of the shadow economy, rather than add to the productive capacity of official GDP. The shadow or underground economy, in turn, drives illicit flows. This finding presents a challenge to Russia, underscoring the need for broad reforms to strengthen the business environment, curtail illicit flows, and adopt specific policies to close the governance deficit.

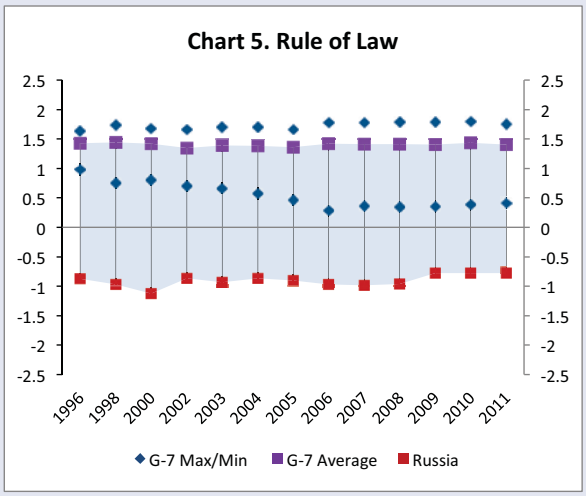
Charts 1-6. Russian and Average G-7 Governance Indicators, 1996-2011

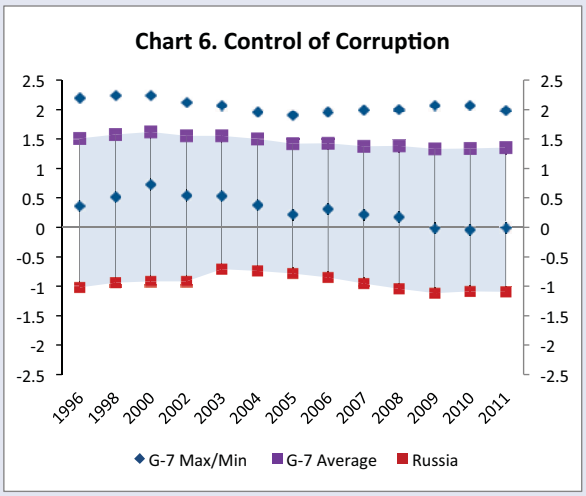












Note: G-7 countries include Canada, France, Germany, Italy, Japan, United Kingdom, and the United States.

iii. The Underground Economy as a Proxy for Governance

In light of the difficulty of using governance indicators in quantitative analysis, we were compelled to look at an alternative measure that is more amenable to hypothesis testing. Based on the fact that the underground economy is large and growing in countries with a weak state of overall governance and small, if not declining, in countries with relatively strong governance, we use the size of Russia's underground economy as a proxy for the overall state of governance in the country. Previous country case studies at GFI also highlight this approach.[16]

We estimate the size of Russia's underground economy using Tanzi's currency demand approach. Because illicit inflows also finance illegal activities, we posit a link between total illicit flows (inflows plus outflows) and the underground economy. In light of the limited number of observations, an overall objective of regression analysis is to obtain the best goodness-of-fit (shown by the highest adjusted R square) using a minimum number of variables. Furthermore, we impose the condition that there be little or no evidence of serial correlation as indicated by a Durbin-Watson statistic that falls within an acceptable range of critical values.[17] Given that the series on licit, illicit, and total capital flows are sometimes negative, we transform them into positive series by adding a constant before taking the logs.

Due to the small number of sample observations (1994-2011), it is important to note that the results presented are preliminary. The Russian Federation was formed on December 25, 1991 and began reporting annual data to the IMF and the World Bank consistently in 1994.[18] Hence, the results presented in the following tables are not as robust as we would like given the small sample size of annual observations available and the low degree of freedom of the regressions (number of observations net of the number of explanatory variables). The small sample size also makes interpretation of stationarity tests difficult, since the probabilities and critical values used to analyze such tests are calculated for a minimum of twenty observations, and may not be accurate for a smaller time period.[19] In view of these data limitations, we do not construct a vector error correction model to stabilize our data set.[20]

Essentially, the currency demand approach developed by Tanzi (1983) estimates the difference in the demand for currency with and without tax rates. The assumption is that high taxes lead to more underground economic activities and that illegal transactions are mainly carried out in cash. Hence, the resulting difference in the demand for currency, or 'extra currency', can be used to derive the size of the underground economy. Clearly, however, many underground activities are not the result of taxes, and therefore our estimates of the underground economy are understated to the extent that they do not capture non-tax related incentives behind illegal activities.

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[16] See, for example, Kar, Dev (2010). *The Drivers and Dynamics of Illicit Financial Flows from India*, Global Financial Integrity, November 2010 and Kar, Dev (2012). *Mexico: Illicit Financial Flows, Macroeconomic Imbalances, and the Underground Economy*, Dev Kar, Global Financial Integrity, January 2012.

[17] Durbin Watson critical values can be found in Appendix Table 5. Statistics between the upper and lower values signal indeterminate evidence for serial correlation, while statistics higher than the upper value reject the presence of serial correlation.

[18] We use annual data because many macroeconomic indicators are unavailable in a quarterly presentation.

[19] The results of stationarity tests in both levels and first differences can be found in Appendix Table 4.

[20] See Kar, Dev (2012). *Mexico: Illicit Financial Flows, Macroeconomic Imbalances, and the Underground Economy*, Global Financial Integrity, January 2012, Box 1, page 27, by Sarah Freitas for corrections of non-stationary time series in the case of Mexico.

Following the study by Brambila-Macias and Cazzavillan (2009), we set up the following model,

$$CD_t = \beta_0 + \beta_1 Y_t + \beta_2 Tax_t + \beta_3 R_t + \beta_4 Rem_t$$

where CD_t is currency demand, Y_t is real GDP, Tax_t is total tax revenues, R_t is the interest rate on deposits, and Rem_t represents remittances sent to Russia. A major argument for including remittances rests on the fact that such unrequited transfers inject liquidity into the Russian economy, which can boost the demand for currency. The results are presented in Table 7. The equation is then re-estimated to obtain CD'_t by setting the Tax_t variable equal to zero with all other coefficients unchanged. The difference between CD_t and CD'_t gives us the amount of extra currency in the economy. Assuming the velocity of money is consistent between the official and underground economies, we multiply extra currency by this velocity to obtain estimates of the underground economy. Estimates of the underground economy are presented in Chart 7 (while the corresponding data can be found in Appendix Table 5).

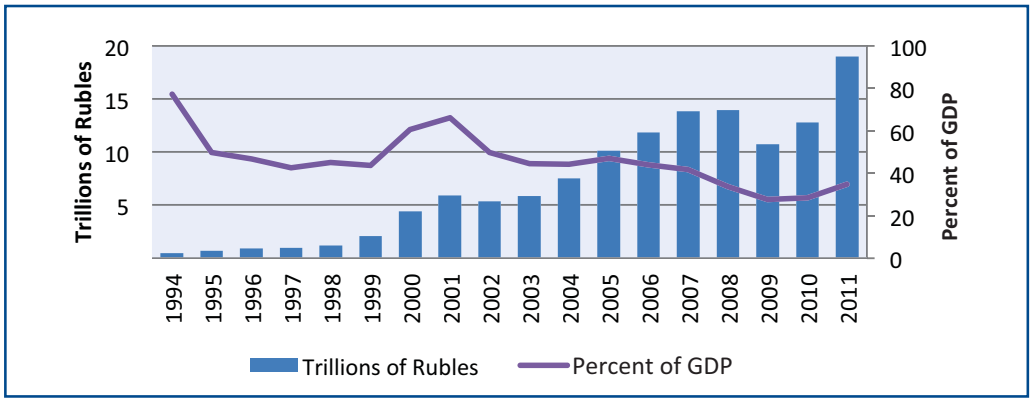
Table 7. Russia's Underground Economy: The Determinants of Currency Demand, 1994-2011

Independent Variables	CD
Constant	-7.40
Y	0.76**
Total Taxes	0.56
Interest Rate	-0.12
Remittances	0.50*
Adjusted R-squared	0.99
Durbin-Watson	1.62

Notes: Currency Demand (CD) as measured by Currency Outside Banks reported by the Central Bank of Russia to the IMF.
Regression results estimated in log form.
*, **, and *** indicates significance at the 10%, 5%, and 1% levels, respectively.

Chart 7. Russia's Underground Economy, 1994-2011

(in trillions of rubles or in percent)



The underground economy grew sharply in Russia over the period 1994-2008, declined in 2009 and 2010, and expanded sharply again in 2011 (Chart 7). Note that while the underground economy has grown over the period, its size relative to official GDP has tended to decline, barring a few upticks as economic growth in post-Soviet Russia took off, led by exports of oil, gas, and other natural resources. How do these estimates compare with results found in other studies? A recent study at the World Bank, based on the multiple-indicators-multiple-causes (MIMIC) model, also generated estimates of Russia's underground economy (See Box 1 for World Bank underground economy estimates as a percent of official GDP).[21] Over the period 1999-2007, the Bank's MIMIC method estimated that Russia's underground economy averaged 43.8 percent of official GDP. The average size of the underground economy, based on the currency demand approach (46.0 per cent of GDP) was found to be quite close to the World Bank's estimate using an entirely different method.

Our estimates show that since the implementation of a flat tax in 2001, the underground economy has declined relative to official GDP. A 2002 IMF report notes that revenue collections in 2001 were at the highest level since the breakup of the Soviet Union, the result of improvements in tax compliance rather than operation of the Laffer curve.[22 and 23] Tax reform was aimed at broadening the tax net, simplifying the tax structure, and strengthening the tax and customs administrations. *The improvement in tax compliance since 2001 is perhaps an important reason behind the shrinking of the underground economy relative to GDP (Chart 7).*

Table 8. Russia: Illicit Financial Flows and the Underground Economy

Governance-Related Independent Variables	Illicit Financial Flows	
	1	2
Constant	-0.41	-0.46
Underground Economy	0.88 ***	0.88 ***
Adjusted R-squared	0.78	0.63
Durbin-Watson	1.27	1.11
Sample Adjusted	1994-2011	1995-2011
Total Observations	18	17

Notes: *, **, and *** indicates significance at the 10%, 5%, and 1% level, respectively.
All regression results estimated in log form.
Specification 2 estimated with lags on the independent and dependent variables to correct for non-stationarity.

Table 8 presents the results of regressions explaining total illicit inflows and outflows using the estimates of the underground economy based on the currency demand method. The first regression seeks to explain the level of total illicit flows as a function of the size of the underground economy.

The results confirm that the underground economy is significant at the 1 percent level in explaining the volume of total illicit flows (with an adjusted R^2 of 0.78). Because both the series on illicit flows and the underground economy are non-stationary (see Appendix Table 6), we also present

[21] Reference, Schneider, F. Buehn, A. Montenegro, C.E. (2010). *Shadow Economies All over the World: New Estimates for 162 Countries from 1999 to 2007.* World Bank Policy Research Working Paper WPS5356. Washington DC: The World Bank, July 2010.
[22] Reference, *International Monetary Fund (2002). Russian Federation: Selected Issues and Statistical Appendix. IMF Country report No. 02/75. Washington DC: IMF, April 2002*: 59.
[23] Laffer curves show the optimal level of taxation for which the government can maximize revenue collection.

specification 2, in which both dependent and independent variables are subject to one-period lags in order to provide relatively more robust results. Although changes in the size of the underground economy explain changes in illicit flows to a lesser extent (adjusted R^2 of 0.63), the underground economy still remains highly significant in explaining changes in the latter.

c. Macroeconomic Drivers of Illicit Flows

Regarding macroeconomic factors, one would intuitively expect economy-wide conditions to mainly influence the behavior of *licit* private sector flows. But the reasoning may not be so straightforward because macroeconomic instability can also create conditions for the transfer of illicit capital. After all, holders of illicit capital may also not like to suffer a loss of principal on their illicit capital through high inflation (which reduces the real value of illicit funds) or exchange rate depreciation even if they may not be seeking to maximize rates of return on illicit assets. Hence, we examine the relationship between macroeconomic drivers and outflows of licit and illicit capital.

The results presented in Appendix A show that *macroeconomic variables are somewhat better at explaining licit private sector flows than illicit flows. In other words, a larger number of macroeconomic indicators explain licit flows at the 1 percent confidence level than explain illicit flows at the same level.*

d. Structural Drivers of Illicit Flows

In our case studies on India and Mexico, we found that structural drivers, like non-inclusive growth, high income inequality, trade openness with lax oversight or a weak customs administration, and high unemployment can also drive illicit flows. For instance, non-inclusive growth, which creates many high-net-worth-individuals (HNWIs), also creates the conditions for increased tax evasion. After all, HNWIs are effectively connected to the globalized economy, and can therefore take advantage of the global shadow financial system for sheltering illicit capital. Non-inclusive growth inspires the vast majority of citizens to improve their standards of living without creating the conditions for attaining them. Increasing trade openness in the presence of weak governance can increase the opportunities for trade misinvoicing. High unemployment can drive the underground economy as the unemployed resort to illegal activities to make a living. Given that structural drivers can drive illicit flows, we included unemployment rate and real GDP growth in regression equations to explain illicit flows.

e. Dynamic Simulation Model of Illicit Financial Flows and the Underground Economy

i. Estimating the System of Equations

We estimate two equations for use in dynamic simulation of the total illicit flows and the underground economy in Russia, one for each component respectively (see Table 9). Each category of illicit drivers, governance, macroeconomic, and structural, is represented in the equation for illicit flows. The size of the underground economy represents governance; real GDP growth indicates macroeconomic performance; and unemployment seeks to capture another structural factor. We limit ourselves to including one indicator per category in our regression for total illicit flows in order to maximize the degrees of freedom in the results and isolating the significance of that variable in explaining illicit flows. *The most robust test result was that oil prices (base 2005) and total illicit flows are positive and highly significant at the 1 percent level in explaining the size of the underground economy.*

Using ordinary least squares regression (OLS), we find evidence that the governance and macroeconomic factors are both positive and significant in explaining total illicit flows at the 1 percent level. Interestingly, the coefficient on real GDP growth is of a higher magnitude relative to the underground economy or unemployment, which may speak to the non-inclusive nature of the growth Russia has experienced. *Furthermore, the results show that a one percent increase in the size of the underground economy will increase the cross-border transmission of illicit capital by 7 percent.*

In spite of the theoretical basis for including structural variables, we found scant empirical evidence that they were important in explaining illicit flows to and from Russia or how the underground economy has evolved (Table 9). The main reason why that is the case is related to weaknesses in data. For instance, data on unemployment is generally very weak in many emerging market and developing countries and do not capture the vast majority of those unemployed. Also, the GINI coefficient generally understates income inequality because it is based on official income surveys *which cannot capture holdings of illicit assets and related income.*

Table 9. The Determinants of Total Illicit Flows and the Russian Underground Economy, 1994-2011

Independent Variables	Total Illicit Flows	Underground Economy
Constant	3.11	6.43 ***
Total Illicit Flows		0.62 ***
Oil Prices		0.01 ***
Underground Economy	0.07 ***	
Real GDP Growth	0.64 ***	
Unemployment	0.01	
Adjusted R-squared	0.86	0.86
Durbin-Watson	1.77	1.40

Notes: Regression results estimated in log form.
*, **, and *** indicates significance at the 10%, 5%, and 1% level, respectively.

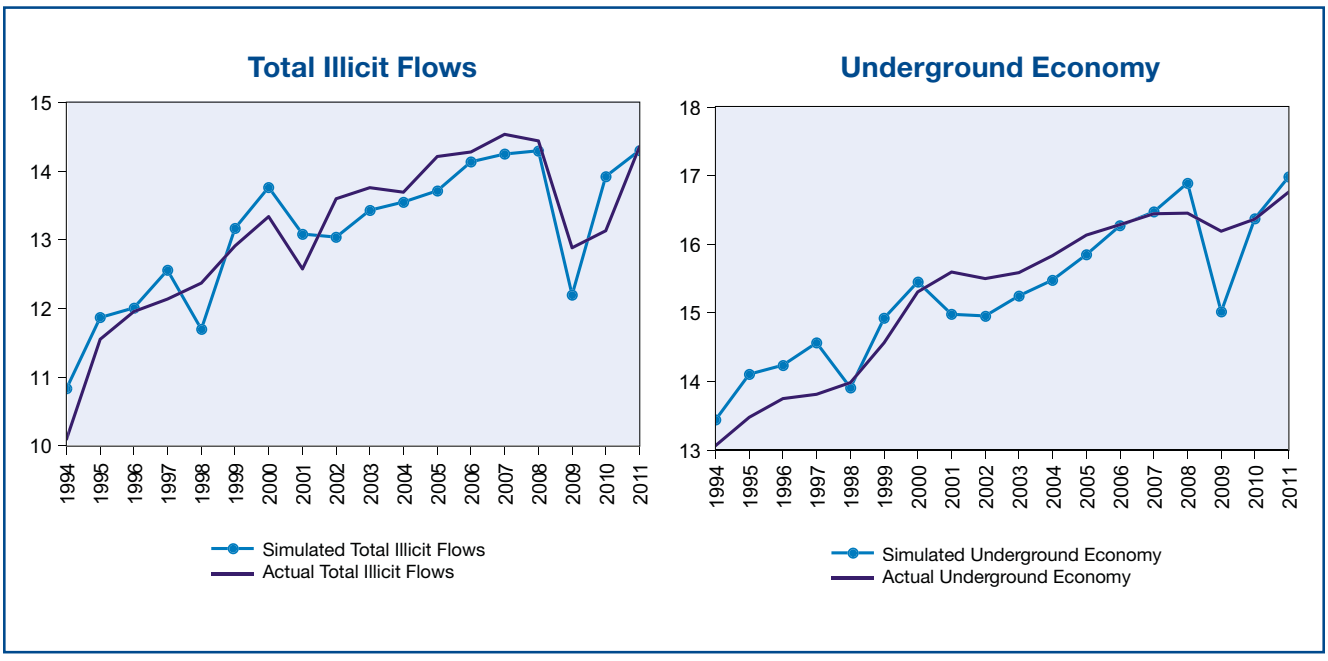
ii. Behavior of Equations in Dynamic Simulation

Simultaneous equation modeling shows that total illicit flows both drive and are driven by the size of the underground economy. We select the specification presented in Table 9 as our model inputs for total illicit financial flows and the underground economy. These regressions yield a high adjusted R-squared, a Durbin-Watson statistic that rejects the presence of serial correlation both of which are subject to the maximum degrees of freedom. Results of the dynamic simulation are presented in Chart 2 and simulation estimates are presented in Appendix Table 8.

Unlike licit capital, illicit flows both in and out of Russia are harmful to the economy. Under the circumstances, the question of netting out illicit flows to arrive at a net position does not arise. It is clear that the harmful effect of illicit flows on an economy can best be measured by the sum of inflows plus outflows.

Perhaps the most interesting aspect of our simulation results is the finding that oil prices affect total illicit flows through the Russian underground economy. Box 2 explores this link a bit further, and finds that oil prices have a small, significant, direct influence on financial outflows from Russia, whether licit or illicit. They do so because increasing oil prices affect oil exports, which drive the Russian current account surplus, leading to capital flight from Russia.

Chart 8. Results of Dynamic Simulation: 1994-2011



Box 2. Russia: Oil Prices and Capital Outflows

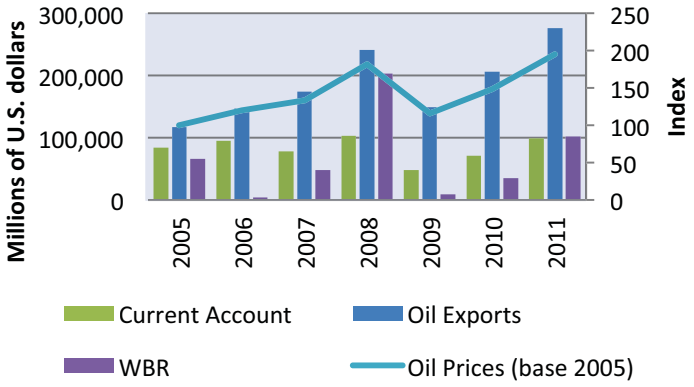
Sarah Freitas

In September 2011, Russian Finance Minister Alexei Kudrin stated, "The first reason for our [capital] outflows is the high price of oil," citing a transition from domestic investment to profiting shifting by corporations as the cause.[24] The IMF has long recognized that strong domestic institutions are essential for the deterrence of capital flight.[25] Box 1 explores the significant links between institutional quality, a powerful oil industry, and capital flows in Russia.

Since independence, a significant share of Russia's total exports have been attributed to oil, with the smallest share occurring in 1998 (20 percent) and the largest in 2011 (52 percent), more than doubling the trough. In the chart below, it is clear that oil prices, oil exports, capital flows and the current account have tended to move in unison over time. Though the current account has been slightly less volatile than the other measures, (a result of the increasing role of Russia's imports), it is clear that oil exports have played an important role in driving Russia's current account surplus.

Chart 9. Current Account Balance and Capital Flight

(in millions of U.S. dollars or index)



The IMF points out in its 2012 Article IV Consultation with Russia that turbulence in the Euro area and the uncertainty of a politically charged election environment have led to increasing net capital outflows. Moreover, the report finds links between the current account and capital flows, which were roughly equivalent in size during 2011.[26] In Table 10, we explore these trends statistically, as well as develop the relationship between oil prices, oil exports, the current account, and net capital flows.

Oil prices drive oil exports, which in turn drive current account surpluses, a component of capital flight. In a regression of the current account balance as a function of oil exports, we found evidence of

[24] Rose, Scott and Jack Jordan (2011). "Kudrin Says High Oil Prices Cause Russia's Capital Flight", Bloomberg, September 24, 2011.
[25] Cerra, Valerie, Meenakshi Rishi and Sweta C. Saxena (2005). *Robbing the Riches: Capital Flight, Institutions, and Instability*, IMF Working Paper, WP/05/199, October 2005.
[26] International Monetary Fund (2012). *Russian Federation: Staff Report for the 2012 Article IV Consultation*, Country report No. 12/217, August.

a strong and positive relationship between oil exports and the current account surplus. However, the results of the first current account specification were weakened by the presence of serial correlation. After applying a first order correction term, a second current account specification supports our original finding at the 1 percent confidence level. Further regression results show that oil prices maintain a positive and statistically significant relationship with both our broad measure of capital flight (the World Bank residual) as well as licit capital flight.

Table 10. Regression Results: Capital Flows & Oil indicators, 1994-2011

	Capital Flows			
Oil Indicators	Current Account		WBR	Licit
Constant	9.72 ***	4.96 ***	13.297 ***	13.22 ***
Oil Exports	0.33 ***	0.64 ***		
Oil Prices (Indexed)			0.001 ***	0.01 ***
AR(1)		0.77 ***		
Adjusted R-squared	0.91	0.96	0.40	0.62
Durbin-Watson	0.87	1.80	2.49	2.09

Notes: All regressions estimated in log form. A constant of 600,000 was added to all the dependent variables.

AR(1) is the correction term for autoregressive errors. Summary statistics for equations with AR(1) corrections are based on innovations (ε) rather than the error (u). The Durbin-Watson for these equations tests the remaining serial correlation after the first-order correction has been applied.

Loungani and Mauro (2000) argued that the root causes of capital flight include an unsettled political environment, macroeconomic instability, weak property rights, and a "confiscatory tax system". Institutions are weak to the extent that they are not able to protect property rights and widespread corruption impacts their transactions and operations.[27] Cerra et. al . (2005) have found that weak institutions, through a lack of transparency and accountability, as well as lax oversight, tend to drive capital flight.[25] Furthermore, they found a positive relationship between weak institutions, high debt, and capital flight. According to Buiter and Szegvari (2002), capital flight from Russia will likely continue unless the following two transformations occur. First, investor confidence in the domestic economy must increase through key institutional reform, including, "a fundamental overhaul of bureaucracy at all levels of government." Second, the relationships between various levels of government must be strengthened so that the government can deliver services in a more effective manner and at a lower cost. While these studies are somewhat dated, the deterioration of institutional and other governance indicators indicate that Russia's overall governance has continued to deteriorate.[28] The results of our study confirm Loungani and Mauro's finding that the Dutch disease, arising from the "curse of oil," lack of fundamental reform, and endemic corruption, explain massive outflows of both licit and illicit capital from Russia.

[27] Loungani, P., and P. Mauro (2000). *Capital Flight from Russia*. IMF Policy Discussion Paper. International Monetary Fund, 2000.

[28] Buiter, W.H. and I. Szegvari (2002). *Capital flight and capital outflows from Russia: Symptom, Cause and Cure.* Working Paper No. 73, European Bank for Reconstruction and Development. Presented at the conference "Russia's Fight against Capital Flight and Money Laundering", held at the Royal Institute of International Affairs, London, on 30 May 2002.

V. Curtailing illicit financial flows

a. Preamble

GFI's policy advice for curtailing illicit financial flows has generally followed an in-depth study of the drivers and dynamics of these flows. Such a study requires high-quality time series covering at least 40 years. In contrast, data limitations on Russia both with regard to the quality of balance of payments statistics and the shorter time series do not allow the formulation of a large dynamic simulation model to analyze how the various drivers interact. For instance, Loungani and Mauro (2000), note that "All capital flight estimates are subject to an especially high degree of uncertainty in Russia, owing to the relatively weak quality of the balance of payments statistics." However, it must be pointed out that a recent IMF report notes that:

> "The Russian Federation's macroeconomic statistics are generally of high quality, reflecting a continuation of positive developments in statistical practices since the last mission in October 2003 that prepared the ROSC—Data Module. *Significant improvements are underpinned by the adoption of a Statistics Law in 2007, which embodies internationally recommended principles and practices for official statistics.*"[29] (Italics added)

While we recognize the improvements to the overall reliability of Russian balance of payments statistics in recent years, the fact remains that there are significant statistical issues related to coverage and quality of the data for the sample period 1994-2011 when considered as a whole. Questions about data accuracy and reliability are particularly relevant for the immediate years following the breakup of the Soviet Union and the formation of the Russian Federation. Given a very small sample size, even a few years of shaky data can impact overall results.

The other important limitation relates to the short time span of available data and the absence of quarterly statistics on government revenues and expenditures, taxes, and most balance of payments series for the time period 1994-2011. If quarterly data were available we could have developed a macroeconomic model to test our hypotheses, the results of which would be statistically more robust. Tests for stationarity could also be performed on time series that are at least 20 observations long. Hence, without the benefit of robust empirical evidence to provide more specific guidance, we are only able to offer a broad overview of the type of policy measures that have strengthened governance in other countries.

[29] Reference, International Monetary Fund (2009). *Russian Federation: Report on the Observance of Standards and Codes—FATF Recommendations for Anti-Money Laundering and Combating the Financing of Terrorism*. IMF Country Report No. 09/22. Washington DC: IMF, January 2009, page 4, paragraph 2.

It is also true that regardless of the domestic policy measures taken to improve governance, if the global shadow financial system continues to facilitate the absorption of illicit funds, that will make it harder for authorities to curtail illicit flows. So efforts to reign in illicit flows must proceed along parallel lines—while domestic measures are needed to strengthen governance, concerted global efforts are need to make the absorption of illicit funds by tax havens and banks much more difficult. This section provides an overview of both domestic and international policy measures to curtail the generation and cross-border transmission of illicit capital.

b. Domestic Policies

(i) Macroeconomic

As we noted at the outset, in the broadest sense the WBR method captures capital flight involving both licit and illicit funds. Yet, it is important to keep in mind the distinction between policy measures needed to curtail licit as opposed to illicit capital. We have seen that while unstable macroeconomic policies that generate high fiscal deficits and inflation or an exchange rate that is out of alignment can become important drivers of licit capital, it seems the corrupt in Russia, with their proceeds of bribery, kickbacks, and other illegal activities, *also* do not wish to lose money. Hence, we find some evidence that significant macroeconomic instability can also drive out illicit capital. Nevertheless, one would expect the holders of illicit capital to be more interested in shielding their wealth from confiscation rather than interested in maximizing the rates of return.

We find that while macroeconomic factors like the rate of inflation, real economic growth, real effective exchange rate, and the fiscal balance were significant in explaining net outflows of recorded private sector flows, they are, for the most part, not significant in explaining illicit flows. Russia's experience with tax reform shows that a rationalization of tax rates and structures are important considerations underlying any effort to shrink the underground economy and curb tax evasion and stem related illicit flows. While the corrupt may not be so worried about future taxation implied by a rising government budget deficit, they are likely to evade taxes that are set too high and are considered an unfair burden. So the first order of business is to keep the tax structure and rates under continuous review so that they encourage compliance and restrict the tax evasion component of illicit flows. That is why the harmonization of tax rates to a single flat income tax in 1991 helped shrink the size of the underground economy relative to GDP.

Macroeconomic policies must also ensure that economic growth brought about through oil exports is inclusive in that all income groups benefit from an expanding economy. If instead rapid growth becomes non-inclusive, the faster creation of high net worth individuals would hinder their tax compliance as they see themselves financing a larger share of the government budget. In particular, fiscal policy measures must fund a social safety net and finance investments in health, education, and infrastructure in order to ensure that economic growth benefits all citizens instead of benefitting a privileged minority. GFI studies on India and Mexico indicate that there tends to be a link between non-inclusive growth, rising inequality, and larger illicit flows.

(ii) Governance

Monetary and fiscal policies that promote price stability, balanced budgets, and inclusive growth cannot strengthen overall governance, although fiscal policies have a significant role to play in promoting inclusive growth. In order to curtail illicit flows, policy measures also need to target governance issues. There are several facets to improving governance. According to the World Bank, there are six dimensions to improving overall governance—voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption. The first indicator "captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and free media". If people are not free to express their opinion or do not provide constructive feedback to their government at the state and federal level without fear of retribution, then important systemic problems in governance can easily grow without any means of redress. According to these indicators, voice and accountability in Russia has deteriorated sharply from a governance score of -0.30 in 1996 to a score of -0.94 in 2011, with -2 being the lowest score and 2 being the highest score. Over the same period, the control of corruption measure also deteriorated from a governance score of -1.02 to -1.09. There was also a slight deterioration in regulatory quality which implies that relevant regulatory agencies need to be empowered to exercise adequate oversight over the transactions and operations of the financial system, the customs authorities, multinational and domestic companies, and the collection of direct and indirect taxes. The timely and impartial implementation of the rule of law provides a clear signal to all economic agents that an independent judiciary will enforce laws in a fair, transparent, and timely manner.

The estimates presented in Table 5 show that trade misinvoicing involving the deliberate misinvoicing of exports and imports is an important method for shifting illicit funds out of Russia. On a cumulative basis, trade misinvoicing comprises about 36 percent of total illicit financial flows from Russia over the period 1994 to 2011. Hence it is reasonable to argue that efforts to curtail the drainage of scarce capital from Russia must include a range of policy measures to strengthen customs administration.

(iii) Strengthening Customs Administration

The importance of customs reform is underscored by the fact that the IMF, World Customs Organization, and other international organizations have been heavily engaged in providing technical assistance to emerging market and developing countries to strengthen their customs administrations.[30]

The empirical evidence on illicit inflows shown in Table 1 and the cycle of transactions stylized in Chart 3 is consistent with serious weaknesses in Russia's customs administration. A recent report

[30] Reference *Changing Customs: Challenges and Strategies for the Reform of Customs Administration*, Editor Michael Keen, International Monetary Fund, Washington DC, 2003. The report cites Morocco (1996), the Philippines (1990-1996) among countries that have implemented customs reform. Recently, following publication of the study *The Drivers and Dynamics of Illicit Financial Flows from India: 1948-2008*, Dev Kar, Global Financial Integrity, November 2010, Washington DC, India started to strengthen a risk-based system operated by Indian customs to monitor the valuation of exports and imports and curtail the transfer of illicit capital.

of the Financial Action Task Force (FATF) on Russia notes that (i) customs declaration forms are not in line with the requirements in applicable national laws, (ii) administrative fines for false or non-declarations are not punitive or effective, and (iii) corruption in customs seems to affect the effectiveness of the system, among other weaknesses.[31]

The report also notes significant weaknesses in Russian banking system transactions that could undermine anti-money laundering (AML) and counter terrorist financing (CFT) efforts. For instance, the FATF mission found that (i) some banks are still believed to be owned and controlled by criminals and their front men, (ii) there is no requirement to investigate the background and purpose of suspicious transactions or to record and maintain such information for follow-up by regulatory agencies, (iii) while credit institutions are prohibited from opening anonymous accounts, there is no specific provision that prohibits banks from maintaining existing accounts under fictitious names, (iv) gaps in monitoring wire transfers remain, (v) sanctioning powers and the sanctions themselves are in general completely inadequate, (vi) a key weakness is the lack of effectiveness of financial sector supervision regarding AML/CFT compliance, and (vii) the existing AML/CFT regime and its implementation does not effectively deal with the illegal alternative remittance systems operating in Russia.

The last point needs to be elaborated. According to the FATF, the current system ensures a fairly effective oversight of legal *money or value transfer service* (MVT) providers. An MVT provides a financial service that accepts cash, checks, other monetary instruments or other stores of value in one location and pays a corresponding sum in cash or other form to a beneficiary in another location by means of a communication and messaging network to which the MVT service belongs. Transactions performed by such services can involve one or more intermediaries and a third party final payment. But the FATF found that the existing AML/CFT regime does not address the existing illegal alternative remittance systems (ARS) operating in Russia. An example of an illegal ARS would be unregistered and illegal "hawala" remittance operators. Given these weaknesses in the oversight of Russia's banking system, it is not surprising that there continues to be massive illicit flows from the country (through balance of payments leakages) that take advantage of regulatory vulnerabilities in the banking system to transfer the funds.

Most customs departments around the world have a dual goods clearance-tax administration function that tends to run at odds with each other. Speedy clearance of goods is desirable from the point of view of both customs and traders, but the risks associated with the collection of appropriate taxes goes up with the speed and ease of clearance. We suggest that the Russian customs administration seek technical assistance from the IMF or another international organization in order to (as applicable): (i) lower the costs related to the clearance process, (ii) reduce the time

[31] Reference, International Monetary Fund (2009). *Russian Federation: Report on the Observance of Standards and Codes—FATF Recommendations for Anti-Money Laundering and Combating the Financing of Terrorism.* IMF Country Report No. 09/22. Washington DC: IMF, January 2009.

taken for clearance, (iii) streamline any complex or non-standard procedures, (iv) avoid duplication of activities or clarify confused responsibilities, inadequate and non-timely information, and (v) harmonize fragmented automated systems that do not communicate with each other. It is possible that as a result of such technical assistance focused on reducing collection costs and improving revenue collection, customs revenues may increase and close to zero the costs for Russian customs. Moreover, such technical assistance should also reduce outflows of illicit capital through the misinvoicing of external trade.

A major element of such assistance would be to improve governance and strengthen risk management in order to curtail trade mispricing. While it should be clearly recognized that the facilitation of trade at a low cost is important, compliance with existing customs regulations is paramount if the misinvoicing of trade is to be curtailed. The following is an outline of a risk-based price profiling system.[32]

Money is moved out of a country by under-invoicing exports or over-invoicing imports. Money is moved into a country by over-invoicing exports or under-invoicing imports. The International Price Profiling System (IPPS) is based on individual export and import transactions of the United States with the rest of the world. The bilateral trade data (broken down by specific commodities) are collected by U.S. Customs and reported by the U.S. Department of Commerce. The IPPS is a risk-based analysis system that evaluates the risk characteristics of prices related to international trade transactions. It may be employed to evaluate transactions that have a risk of being related to money laundering, terrorist financing, income tax evasion, and import duty fraud.

The IPPS evaluates an international trade price based on four (4) different filters:

- World 5th and 95th Percentile
- Country 5th and 95th Percentile
- World Mean (-) and (+) 2 Standard Deviations
- Country Mean (-) and (+) 2 Standard Deviations

The statistical filters are calculated from 12 months of international trade transaction data as reported by the United States Department of Commerce. The IPPS analysis evaluates an international trade price and produces a "Risk Index" that may range between "-4" and "+4". A negative "Risk Index" would reflect the potential of money being moved out of the United States into Russia while a positive "Risk Index" reflects the potential of money being moved into the United States from Russia. The magnitude of the "Risk Index" reflects the probability or likelihood that a price is overvalued or undervalued.

[32] The description of the IPPS is reproduced from Dev Kar and Devon Cartwright-Smith (2008). *Illicit Financial Flows from Developing Countries: 2002-2006*, Global Financial Integrity, Washington DC.

The IPPS has the unique advantage that the price of each transaction is derived solely from the customs invoice declaration of a value and a quantity involving the merchandise good being traded. As the system deals with specific transactions, it avoids the problem of aggregating prices of disparate commodities that vary in quality or underlying characteristics. The computed price is then compared to the world "norm" price for a specific commodity, taken as the arms-length price prevailing in free markets.

An important limitation of the IPPS system is that trade mispricing estimates are derived based on Russia's trade with the United States only. Now, although the United States is the most important trading partner for many countries, the assumption that trade mispricing implied in U.S. trade can be proportionally applied to other regions and the world is not only bold but introduces a downward bias relative to the DOTS-based estimates. Because governance, recording, enforcement, and control procedures are much stronger in the United States than in most developing countries, traders are likely to be much more careful in mispricing trade with respect to the United States than with the rest of the developing world. Nevertheless, as the United States is an important trading partner of Russia, the IPPS trade pricing model can provide a useful tool for Russian customs to monitor and curtail trade mispricing involved in the bulk of its trade with the world.

Given the significant use of trade misinvoicing to shift illicit capital abroad, it would be prudent for Russian customs to look more closely into strengthening the risk-based computerized system for monitoring, controlling, and curtailing the deliberate misinvoicing of export and import transactions. Progress in curtailing trade mispricing must be measured against bilateral trade data discrepancies over time particularly with regard to trade with the United States.

iv. Legally Binding Declaration of Traders

GFI also recommends that commercial invoices for imports into Russia require dual signatures—that of the Russian importer and the foreign exporter. Specifically, export and import invoice forms should contain a paragraph, to be signed by the exporter and by the importer, confirming world market pricing without any elements of mispricing for the purposes of manipulating VAT, customs duties, or income taxes (see draft paragraph below). Russian customs authorities and/or banks should be required to check for two signatures before authorizing clearance and/or payment.

Draft Export/Import Declaration

Weights, counts, measures, descriptions, and quality specifications are accurately stated on this invoice, and prices of all items covered by this invoice conform to world market norms and contain no element of mispricing or abusive transfer pricing that serves to manipulate VAT taxes, customs duties, or income taxes. The transaction covered herein conforms to the anti-money laundering laws, anti-terrorist financing laws, banking regulations, and exchange control regulations of all countries where the transaction originates, all countries in which material actions relating to the transaction occur, and to the banking regulations and exchange control regulations of Russia. Commissions, fees, gratuities, or other emoluments owed to or payable to any agent, broker, or representative in Russia or of Russian nationality is noted as to name, address, and amount, as follows:

_____

_____

_____

Exporter_____

Date_____

Importer_____

Date_____

b. Policy Measures on the Global Shadow Financial System

i. Need for Greater Transparency and Accountability

There is a dire need for greater transparency and accountability with which financial institutions operate in order to counter the adverse impact of the global shadow financial system on poor developing countries. As recent media reports confirm prominent international banks have also been involved in money laundering and terrorist financing.

A recent study at GFI found that offshore financial centers (or OFCs also called tax havens) and developed country banks are the major points of absorption of illicit financial flows from emerging market and developing countries.[33] Although tax havens have attracted media attention regarding their lack of transparency, our study found that large data gaps exist for banks as well. These gaps

[33] Reference, Dev Kar, Devon Cartwright-Smith, and Ann Hollingshead (2010). *The Absorption of Illicit Financial Flows from Developing Countries: 2002-2006*, Global Financial Integrity, Washington, DC, April 2010.

make it difficult to analyze the absorption of illicit funds, defined as the change in private sector deposits of developing countries in banks and OFCs. The paper argues that both need to greatly improve the transparency of their operations. Regular reporting of detailed deposit data by sector, maturity, and country of residence of deposit holder would close many of the data gaps identified in this paper and allow for a more robust analysis of the absorption of illicit flows from developing countries.

The GFI study found that while OFCs have been absorbing an increasing share of illicit flows from developing countries over the five-year period of this study, international banks have played a pivotal role in facilitating that absorption. Depending upon whether one uses the narrower Bank for International Settlements or broader International Monetary Fund definition, OFCs hold an estimated 24 to 44 per cent of total absorption respectively, while banks hold the balance. As total absorption consists of both licit and illicit funds, the paper presents a simple algebraic analysis to estimate the portion of such deposits in banks and offshore centers. Furthermore, the analysis shows that the polar extreme (all illicit or all licit) in such holdings by either group is not tenable given the overall volume of illicit flows and absorption.

Let us consider a case involving the transfer of illicit capital involving the "misrepresentation of export earnings, particularly in the energy sector", as noted by Loungani and Mauro (2000). Say Company A in Russia exports oil to its Subsidiary B in the Netherlands. The transaction is undervalued at a price significantly below the world market price. The invoice for the transaction does not, however, accompany the shipment. Instead, the invoice goes to a reinvoicing company in Cyprus owned by the Russian exporter and there is repriced at something more accurately reflecting the world market price. Customs administration in the Netherlands has no reason to question the invoice since the price is in line with prevailing norms. Subsidiary B turns around and sells the oil to another country in Europe at the world market price. Upon payment, it transfers the total revenues to the Cyprus reinvoicing facility, reaping a huge profit flowing into that account in Cyprus, a tax haven. At a later time, the illicit capital in Cyprus may be round-tripped back to Company A in Russia as recorded foreign direct investment. This stylized flow of goods and capital resulting from the under-invoicing of oil exports and related illicit and licit financial flows finds considerable support in recorded FDI flows between Cyprus and Russia. According to the Coordinated Direct Investment Survey (CDIS) data reported by Russia to the IMF, Cyprus was its largest source and destination of FDI over the period 2009-2011. The position (stock) data reported as of end-December 2009-2011, show that FDI from Cyprus was valued at US$129.9 billion, US$179.2 billion, and US$128.8 billion respectively while the FDI positions of Russians in Cyprus amounted to US$119.7 billion, US$153.9 billion, and US$121.6 billion respectively. It is unlikely that Cyprus, with a GDP of around US$23 billion can manage to make such large investments in Russia unless those investments were financed through illicit assets from Russia. The recorded FDI positions merely reflect the round-tripping of prior illicit deposits from Russia into Cyprus. The role

of Cyprus in facilitating money laundering by Russians was also recently highlighted by Wolfgang Schaeuble, the German Minister of Finance.[34]

Global Financial Integrity strongly recommends the following measures by Russia:

- draft domestic banking laws that would make it illegal to open accounts in banks, securities firms, insurance companies, etc. without knowledge of natural persons owning the accounts (or beneficial ownership)
- call for large transactions with tax havens and secrecy jurisdictions to require Central Bank or other relevant agency's review and approval
- hold company or high-net-worth individuals' auditors responsible for noting transactions with tax haven entities and the purpose of such transactions
- fully implement all Financial Action Task Force (FATF) recommendations, and criminalize tax evasion not only as a predicate offense attached to a money laundering charge but as a crime in its own right.

Using data on cross-border holdings of bank deposits, a recent study at GFI showed that tax havens play an important role in the absorption of illicit financial flows from developing countries. Yet, international organizations and powerful regulatory agencies of advanced countries have not implemented strong measures to bring about greater transparency and accountability in how tax havens operate.

ii. Measures to Curtail Abusive Transfer Pricing

Russia enacted revised rules and regulations related to transfer pricing on January 1, 2012. While the new regulations generally conform to the OECD's guidelines on arms-length pricing and other provisions, there are some country-specific provisions that in effect actually tighten regulations on what is considered "related" parties. In some ways, the Russian transfer pricing rules are more draconian than the OECD guidelines prescribe. For instance, transactions between related companies or unrelated companies operating only within Russia may trigger transfer pricing investigations under certain conditions. Under current tax laws, transfer pricing regulations can apply if a court determines that a special relationship exists between the parties that carry out the transaction even if the parties fall outside the criteria recommended in the OECD guidelines.

While the rules and regulations targeting transfer pricing have been tightened, it is not clear whether there are adequate numbers of transfer pricing specialists that can audit companies, handle joint audits with other countries, and vigorously enforce the double tax avoidance agreements that Russia has with other countries. By all accounts, Russian tax inspectors and tax specialists are still not fully aware of or well-trained in the implementation of transfer pricing rules and regulations in a consistent manner. In a world where many multinational companies have subsidiaries in tax havens,

[34] Reference, Parkin, Brian (2013). *Russia-Cyprus Money Flows Imply Laundering, Schaeuble Says*, Bloomberg, January 21, 2013.

proper enforcement of rules becomes more complicated. Hence, it is recommended that Russia develop a medium-term plan to train its transfer pricing staff and implement a state-of-the-art electronic filing and auditing system in order to enhance the capacity of the transfer pricing unit to implement the current rules. Transfer pricing experts should also be specially trained in monitoring related party trade in services where the risk of abusive transfer pricing is higher.

As Russian regulators are aware, the arms-length principal underlying the OECD guidelines are not without some serious drawbacks. For one, determining whether a particular transaction is "abusive" in relation to those principles can be judgmental and fraught with practical difficulties, particularly in relation to intellectual property rights where it may be impossible to fix prices of comparable services trade between unrelated separate entities. In fact, as detailed bilateral trade data on services, particularly among developing countries, are not currently available, it may be difficult to estimate arms-length prices for specific services trade involving Russia's trade with other developing countries. Hence, the comparability analysis is impossible to carry out. Moreover, even in trade involving goods, there is no widely accepted objective criterion for allocating the economies of scale or benefits of integration between associated enterprises. Also, associated enterprises may engage in transactions that independent enterprises would not undertake, so that pricing comparisons are impossible or they do not provide a reliable basis to compare.

For this reason, GFI recommends that the OECD require multinational corporations (MNCs) to report on their transactions and operations on a Country-by-Country (CbC) basis. This improved system of reporting by multinationals can provide a fair and transparent basis for calculating taxes payable by MNCs in different jurisdictions where they transact business. Specifically, every subsidiary of an MNC that operates globally would be required to report data on sales, profits, and taxes paid in each country of operation. Such CbC reporting will make transparent the extent of business carried out in a particular country or jurisdiction and the taxes for which it is liable based on the sales, profits, costs of operation, depreciation, and other variables which go into calculation of taxes due. At present, most MNCs publish partial and segmented information that breaks their trade down along product or division lines. They are not required to publish geographic data, and there is no requirement to do so on a CbC basis. Despite publishing their accounts as if they are unified entities, MNCs are not taxed in this way. Each member company of the group is taxed individually. This makes it difficult to establish an overview of what is happening within a group of companies for tax purposes. CbC would provide information to a wide range of stakeholder groups which will strengthen efforts to monitor corrupt practices, corporate governance and responsibility, tax payments, and world trade flows. The system of reporting would also benefit investors by revealing which corporations operate in politically unstable regimes, tax havens, war zones, and other sensitive areas. CbC would also enable citizens of developing nations to determine who owns the companies that are trading in their countries, what tax is being paid, and whether that appears reasonable in relation to the tax rates in the country in question.

As an example of strong regulatory oversight, Russia can substantially increase its staffing in the area of transfer pricing audits and implement a more sophisticated electronic filing and auditing system. Additional staffing will also help Russia enforce its double tax avoidance treaties that are currently in force. Given that Russia has strong trade links with the United States, having a strong transfer pricing audit regime will provide close coordination with the customs authorities and help identify additional sources of revenue. This regime will also send a clear message to the business community with respect to the regulatory capability of the tax authorities. In the long run, it can go a long way in stemming illicit outflows of capital resulting from mispricing in trade or services.

Global Financial Integrity strongly recommends that the Russian government support the introduction of CbC reporting in international forums such as the OECD, IMF, and other international organizations in order to curtail abusive transfer pricing (ATP) and related loss of government revenue.

iii. Double Tax Avoidance Agreement to Counter Tax Evasion

While Double Tax Avoidance Agreements (DTAAs) are bilateral tax treaties designed to protect individuals or corporations from being taxed twice on the same income, the mechanism has been used to curtail tax evasion which drives a country's underground economy as well as the world's shadow economy. In order to be effective, the DTAA provisions must supersede the general provisions of a country's tax statues. The individual or company can then chose between the DTAA provisions or the national tax laws, depending upon which is more advantageous.

The risk of double taxation arises from the fact that while a taxpayer's home country has the right to tax him if the source of income is derived from work in another country, the host country can also have a right to tax him. Consider the case of an American company paying taxes in the United States that also does business in China. Based on the fact that the Internal Revenue Service of the United States typically taxes entities on their worldwide income, the American company would pay a tax on its profits in the United States while China would impose a tax on the portion of profits made in China. As the American company is subject to tax in the United States and in China, it is subject to tax in both the countries in respect of the same income. A DTAA between the United States and China would avoid the incidence of such double taxation from the date the agreement goes into effect.

An effective DTAA can clarify and facilitate decisions relating to foreign direct investments. The agreements seek to ensure that suitable relief is available to defray or mitigate the burden of taxation in another jurisdiction which could have a taxable interest in that economic activity or entity. Since a DTAA requires the exchange of current tax payer information and lays the groundwork for the resolution of tax disputes and the recovery of taxes owed to either party to the agreement, these provisions allow the monitoring of taxable entities for tax compliance according to the rules of international tax treaties.

However, a DTAA is not a panacea against the generation and cross-border transmission of illicit flows. For example, a DTAA normally cannot be used to trace illicit outflows of funds from a country to the partner country that was concluded before the DTAA came into effect. Moreover, a DTAA also cannot be used by a country to launch a "fishing expedition" whereby the source country asks for tax information in a blanket fashion without adequate prima facie evidence. Appendix Table 9 shows that there are quite a few tax havens/offshore centers among the list of countries with which Russia has entered into a DTAA. Yet, by all accounts there continues to be massive illicit flows from Russia into secrecy jurisdictions like Cyprus and Switzerland and even developed country banks of advanced countries. The fact remains that the illicit flows must relate to a legitimate activity of an individual or business entity. But if the activity itself is illicit (such as drug or human trafficking, gun running and sex trade) then the payment of taxes under a DTAA does not arise.

iv. Automatic Exchange of Information

A significant component of illicit financial flows involves the evasion of taxes. Apart from leakages from the balance of payments, trade mispricing can be used quite easily to evade applicable trade taxes. For instance, import under-invoicing and export over-invoicing (resulting in so-called inflows of illicit capital in traditional models of capital flight) can also result in tax evasion to the extent that the country is cheated out of the correct amount of import duties payable or defrauded of export subsidies on overstated exports. Furthermore, import over-invoicing, normally used to transfer illicit capital abroad can also be used simultaneously to lower taxes payable on profits (e.g., if the rate of taxation on corporate profits exceed the higher import duties payable so that on balance, the company still comes out ahead). The government ends up losing both the capital that should have been taxed as well as the underpayment of total taxes due. One way to address the problem of tax evasion is for the source country to enter into an automatic exchange of information (AEI) agreement with the destination country where the proceeds of tax evasion end up. In fact, AEIs already exist between members of the European Union (EU) under the EU Savings Tax Directive (EUSTD).

The Organization of Economic Cooperation and Development (OECD) defines automatic exchange of information as involving, "the systematic and periodic transmission of 'bulk' taxpayer information by the source country to the residence country concerning various categories of income (e.g. dividends, interest, royalties, salaries, pensions, etc.)." The information subject to exchange is mostly collected routinely in the source country, for example through the reporting by financial institutions and employers. The tax authority of a country can use the information to check whether taxpayers have accurately reported their foreign income. Moreover, the AEI can be used to estimate the wealth of high-net-worth-individuals and to examine whether specific transactions can be supported by the reported income. Moreover, AEIs can also be used to address a range of cross-border tax issues such as the proper functioning of double tax avoidance agreements and the evaluation of taxing rights between two countries relating to cross-border economic activity and investment.

However, most experts agree that for two reasons the OECD's "upon request" standard is inadequate to ensure effective international tax information exchange. First, it is very costly to draft

a request for information buttressed by prima facie evidence of tax evasion. Second, the prima facie evidence requires the preparation of a detailed legal case with considerable prior information on the suspected tax evader which may not be available in a timely manner. As a result, the information exchange clauses are seldom used.

Given these serious deficiencies in the global tax exchange agreements, it would be crucial for Russia to push for strengthening the AEI in cooperation with other large emerging market countries within the G-20 so that national tax authorities do not continue to be constrained by the onerous requirements of the current OECD "upon request" proposal which only help tax evaders cheat on taxes due.

The AEI would aid tax collection in developed and developing countries. It would require governments to collect from financial institutions data on income, gains, and property payments to non-resident individuals, corporations, and trusts. The AEI would also mandate that data collected automatically be provided to the governments where the non-resident entity is located.

According to the OECD, in 2009 Norway received information from a number of its AEI partners. The tax returns of income filed by taxpayers in Norway were compared against those contained in the AEI; the examination showed that in 38.7 percent of the cases income which was taxable in Norway had not been reported.[35] Now Norway scores among the highest in various aspects of governance. If more than a third of income cases in such a strongly governed country indicate significant underreporting of income, what about countries where governance is weak?

Global Financial Integrity recommends that Russia enter into an AEI with the EU for two main reasons. First, the EU is the largest multilateral arrangement that has a well-functioning AEI. Second, the EU's related provisions also extend to tax havens like the Cayman Islands. Moreover, Russia should pursue very aggressively the exchange of tax information with the United States as the United States now exchanges tax information with Canada. Finally, given close trade and financial links with Central American and Caribbean countries (some of which are tax havens), Russia should implement AEIs with the countries in these regions.

[35] Reference, Organization for Economic Co-operation and Development (2012). *Automatic Exchange of Information: What it is, how it works, benefits, what remains to be done.* OECD, 2012, page 20 (bullet 1).

VI. Conclusion

The literature on capital flight has not been clear about whether the methodology used captures licit or illicit capital or both. A popular method of estimating capital flight, the World Bank Residual method adjusted for trade misinvoicing, includes both recorded (or licit) and unrecorded (or mostly illicit) capital. Yet, in automatically netting out inflows of capital from outflows, economists have paid scant attention to the question of whether the process is equally valid for both types of capital. We have argued that while netting out licit flows to derive a net position makes sense, there is no rationale for netting out illicit flows. This is because when it comes to licit flows, a legitimate question is whether any reversal of capital flight was large enough to offset the initial loss of capital. In contrast, economists have failed to recognize that the government cannot tax or use for any productive purpose capital inflows that are not recorded. As flows are illicit in both directions and there is no such concept as net crime, netting out such flows would make little sense. In short, one of the most widely used methods for estimating capital flight that involves both licit and illicit capital, suffers from a fundamental flaw in the treatment of inflows and outflows. And this fundamental flaw has been imbedded in academic literature for more than 30 years.

We show that a more conservative measure of illicit flows can be derived based on the Hot Money Narrow method adjusted for trade misinvoicing, provided we look only at gross outflows for the above reasons. However, if we wish to assess the impact of illicit flows on the underground economy, we would need to *add* outflows and inflows and not net them. We show that there is some empirical evidence that illicit flows both drive and are driven by the underground economy. This simultaneity was tested in the context of a two-equation model although the thesis could not be tested in a rigorous manner given the limited number of observations. Typically, in order to establish a long-run relationship among behavioral relationships we would need to test for stationarity. If relevant series used to explain the behavioral equations are found to be non-stationary, a vector error-correcting procedure such as the Johansen co-integrating test has to be carried out. Then the resulting cointegrating equation has to be estimated to establish such as relationship. While this procedure requires at least 20 observations, robust results require a much longer time series.

What seems reasonably clear is that recorded private sector flows from Russia have grown at a much faster pace than illicit outflows. While recorded and unrecorded outflows have tended to vary significantly from one year to the next, on average, the former amounts to about 70.5 percent while the latter makes up about 29.5 percent. An important caveat to this proportion is that while recorded capital flows are likely to be captured in a fuller manner, unrecorded outflows are most likely to be significantly understated. This is because economic methods cannot capture most illicit transactions that are settled in cash or are not captured through official statistics (such as the misinvoicing of trade in services or misinvoicing on the same invoice by word-of-mouth collusion among traders). So in all likelihood, the proportion of licit flows is overstated while the illicit portion is greatly understated.

We find that there was massive flight of illegal capital in the years immediately following the formation of the Russian Federation on December 25, 1991. Over the period 1994-2011, Russia lost US$211.5 billion in illicit capital outflows. The seismic shifts involved in the dilution and shedding of central controls and the reality of weak institutions trying to find their feet in the new order amid economic and political uncertainties continued to drive illicit flows from the country. Outflows of such capital increased from an average of US$7.2 per annum in the mid-1990s to US$11.7 billion per annum in the 2000s. As a share of GDP, illicit outflows also grew from an average of 2.6 percent of GDP in the period 1994-1999 to 4.2 percent in the latter period when the economy grew much faster, partly as a result of higher oil exports.

Most (some 63.8 percent) of total outflows over this period were due to leakages from the balance of payments while a little over 36 percent was transferred through the misinvoicing of trade. This indicates that the proceeds of bribery, kickbacks, and other illegal transactions are primarily transferred out of the country through unrecorded banking transactions rather than the misinvoicing of trade.

A fuller picture of the role of illicit flows in driving the underground economy emerges if we are to consider both outflows and inflows. While outflows of illicit capital increased from US$8.7 billion in 1995 to US$41.6 billion in 2010 before dipping to US$10 billion the next year, gross flows (i.e., outflows plus inflows) have shown a steady increase with intervening declines that are fewer and less pronounced. Over the period 1994-2011, cumulative illicit outflows totaled US$211.5 billion, while total outflows (including the licit portion) totaled US$782.5 billion. Gross outflows and inflows of the purely illicit kind totaled US$763.8 billion.

We then compare various estimates of capital flight in previous studies with estimates of illicit flows found in this study for overlapping periods. In most cases covering common periods, estimates of gross illicit outflows are much lower than net capital flight in previous studies which consist of licit and illicit capital flows. We did not compare net illicit flows against net capital flight because netting out flows that are illicit in both directions makes little sense. The much lower estimates of gross illicit outflows underscore the importance of not normalizing estimates using the HMN+GER method.

The paper found a significant link between illicit flows and the growth of the underground economy. This link was tested in the context of a simultaneous equation framework demonstrating that the two are driving each other. Briefly, the underground economy was estimated using Tanzi's currency demand approach, while illicit inflows and outflows were estimated using the HMN+GER method. While the underground economy has grown in size over the period 1994-2011, it has actually shrunk relative to official GDP. That said, Augmented Dickey Fuller tests show that both the illicit flows and the underground economy series are non-stationary. Therefore, we estimated equations using one-period lags which convert the dependent and independent variables to a stationary series. While the goodness-of-fit adjusted for degrees of freedom declined in the lagged variables version, the

significance of the underground economy in driving illicit flows and being driven by them remain unchanged. These results are subject to the caveat that they are not very robust given the small number of observations imposed by the fact that the Russian Federation was formed on December 25, 1991, and comprehensive data are only available beginning in 1994. Test of stationarity and regression results are not robust in sample sizes of less than 20 observations; much longer time series exceeding 40 observations are needed to attain more confidence in tests of significance that typically follow those on stationarity. Hence, the results presented in this study should be seen as being preliminary or indicative in nature rather than conclusive. So long as the Russian authorities fail to shrink the underground economy, Russia will continue to hemorrhage scare capital, both illicit and licit, to the detriment of economic and political stability and undermining the nation-state.

Finally, we present a discussion of the relevant domestic and international policy measures needed to curtail the generation, cross-border transmission, and absorption of illicit flows in the global shadow financial system. We suggest a range of policies which have been helpful in initiating a meaningful policy dialog among various stakeholders in other countries. On the domestic front, we point out the need for macroeconomic stability given that macroeconomic instability was found to drive both licit as well as illicit capital from the country. As neither holders of licit capital nor those who have generated the funds in an illicit manner are interested in seeing the value of their holdings decline, there is a need for economic policies that ensure macroeconomic stability through lower and less variable rates of inflation, lower fiscal deficits, market-determined exchange rates, and competitive interest rates, among other policies.

The paper also notes the importance of improving governance through a strengthening of customs administration (in order to curtail the misinvoicing of trade), and legally binding declaration by traders that they have not deliberately manipulated customs invoices to transfer funds. Weaknesses in customs administration arise from a number of factors. For instance, a recent report by the Financial Action Task Force (FATF) on Russia found that customs declaration forms are not in line with the requirements in applicable national laws, the administrative fines for false or non-declarations are not punitive or effective, and that corruption in customs seems to undermine its effectiveness. We urge the Russian government to seek technical assistance from the IMF in order to implement a comprehensive reform of its customs administration.

Finally, the report concludes with a range of policy measures and initiatives at the global level aimed at making the absorption of illicit flows from developing countries much more difficult. These policy measures initiated under the auspices of the G-20 can include tighter regulatory oversight over tax havens and developed country banks with the objective of ensuring greater transparency and accountability related to the transactions and operations of financial institutions. Other measures are aimed at stricter monitoring and penalties for abusive transfer pricing by multinationals. We point out the weaknesses of the OECD's guidelines related to arms-length pricing and put forward the advantages of CbC reporting by multinationals. We urge the Russian government to advocate for and support CbC reporting by multinationals in international forums such as the G-20 and the

OECD. Next, we advocate for bilateral tax treaties such as the double tax avoidance agreements (DTAAs) and the automatic exchange of information (AEI) as a means of making tax evasion much more difficult thereby helping Russia to cut down illicit flows and retain more capital domestically.

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Glossary

Glossary of Databases

IMF Balance of Payments (BOP): IMF database that provides international economic transactions data and International Investment Position (IIP) data. BOP data begin as early as 1960 for some countries but IIP data are only available starting 2002. For the purposes of calculating illicit financial flows, the following time series can be found in this database: current account, foreign direct investment, and change in reserves.

IMF Direction of Trade Statistics (DOTS): IMF database containing data on exports and imports of goods on a bilateral basis, beginning in 1980. No bilateral trade data are available for services or for specific commodities.

IMF International Financial Statistics (IFS): IMF database containing all aspects of international and domestic finance, beginning in 1948. For the purposes of calculating illicit financial flows, the IFS database contains supplementary trade data.

World Bank Global Development Finance (GDF): World Bank database that provides external debt and financial flows statistics for countries that report public and publicly-guaranteed debt under the World Bank's Debtor Reporting System (DRS). Data collection begins in 1960.

Glossary of Terms

Balance of Payments: is a statistical statement that systematically summarizes, for a specific time period, the economic transactions of an economy with the rest of the world. Transactions, for the most part between residents and nonresidents, consist of those involving goods, services, and income; those involving financial claims on, and liabilities to, the rest of the world; and those (such as gifts) classified as transfers. While the current account mainly consists of exports and imports of goods and services and worker remittances, the financial account includes transactions involving foreign direct investment, portfolio capital flows, changes in reserve holdings of the central bank—line items that are necessary to estimate illicit flows based on the World Bank Residual model.

Change in External Debt (CED): is a version of the World Bank Residual model that includes change in external debt as an indicator of new loans (i.e., a source of funds for a country). The World Bank Residual model estimates unrecorded (defined to be illicit) outflows from the balance of payments by estimating the gap between source and use of funds. Note that the CED model only includes gross illicit *outflows* from a country, occurring when source of funds is greater than use of funds (in other words, calculations have a positive sign). Thus, when the use of funds exceeds the source of funds, that is, when there are inward transfers of illicit capital (calculations have a negative

sign), the CED method sets illicit flows to zero for that year. In contrast, economists have typically netted out illicit inflows from outflows under the traditional World Bank Residual method.

Current Account Balance: Covered in the current account are all transactions (other than those in financial items) that involve economic values and occur between resident and nonresident entities. Also covered are offsets to current economic values provided or acquired without a quid pro quo. Specifically, the major classifications are *goods and services, income,* and *current transfers.*

Export Under-invoicing: A country's exports to the world are compared to world imports from that country, adjusted for cost of insurance and freight. Illicit outflows from a country are indicated whenever exports of goods from that country are understated relative to the reporting of world imports from that country adjusted for the cost of insurance and freight.

External Debt: (World Bank definition) measure of debt owed to nonresidents repayable in foreign currency, goods, or services. Total external public and publicly guaranteed debt includes long-term debt, use of IMF credit, and short-term debt. While private non-guaranteed debt is also included in total debt, the data are not comprehensive for some developing countries.

Foreign Direct Investment: measure of all net transactions between a direct investor in one economy and a direct investment enterprise (recipient) in another economy.

Gross Excluding Reversals (GER): method of calculating gross illicit *outflows* defined as export under-invoicing and import over-invoicing. In other words, GER calculations are based on the sum of discrepancies between (i) a country's exports and world imports from that country and (ii) a country's imports and world exports to that country. The absolute value of the export under-invoicing, which is a negative estimate under (i), is added to import over-invoicing to arrive at a GER estimate.

Hot Money Narrow (HMN): more conservative measure of illicit financial flows from the balance of payments than the CED.

Illicit Financial Flows: funds that are illegally earned, transferred, or utilized and cover all *unrecorded* private financial outflows that drive the accumulation of foreign assets by residents in contravention of applicable laws and regulatory frameworks.

Import Over-invoicing: A country's imports from the world (adjusted for cost of insurance and freight) are compared to world exports to that country. Illicit outflows from a country will be indicated if the country's imports are overstated with respect to world exports to that country.

Non-normalized: Change in External Debt (CED) or Gross Excluding Reversals (GER) calculations which have not been subjected to the normalization process. Non-normalized estimates represent the upper bound (robust estimate) of the possible range of illicit flows.

Normalized: Under the CED+GER method, the normalization process subjects both the Change in External Debt (CED) calculations and the Gross Excluding Reversals (GER) calculations for the entire list of developing countries, for which data are available, to two filters: (i) estimates must have the right sign (indicating outflow, rather than inflow) in the majority of the years covering the sample period and (ii) exceed the threshold (10 percent) with respect to exports valued at free-on-board (or f.o.b.) basis. Normalized estimates represent a lower bound (conservative estimate) of the possible range of illicit flows. Normalization is not required under the HMN+GER method, because it is already much more conservative than the normalized CED+GER method.

Change in Reserves: According to the IMF, net "transactions in assets that are considered by the monetary authorities of an economy to be available for use in funding payments imbalances, and, in some instances, meeting other financial needs".

Trade Misinvoicing: Traditional model in which a country's exports (respectively, imports) *to* the world are compared to world imports (respectively, exports) *from* that country to determine export or import under- and over-statement. Export under-invoicing and Import over-invoicing reflect illicit outflows, while export-over-invoicing and import under-invoicing reflect illicit inflows. Traditionally, economists have netted out illicit inflows from outflows thereby understating the adverse impact of illicit flows on developing countries. As illicit inflows are also unrecorded, they cannot be taxed by the government and are generally unusable for legitimate productive purposes. Hence, only gross outflows through trade mispricing as considered in the GER method (see definition of GER).

World Bank Residual Method: measures a country's source of funds (inflows of capital) vis-à-vis its recorded use of funds (outflows and/or expenditures of capital). Source of funds includes increases in net external indebtedness and the net inflow of foreign direct investment. Use of funds includes the current account deficit that is financed by the capital account flows and additions to central bank reserves. Illicit outflows (inflows) exist when the source of funds exceeds (falls short of) the uses of funds. Traditionally, economists have netted out illicit inflows from outflows thereby understating the adverse impact of illicit flows on developing countries. As illicit inflows are also unrecorded, they cannot be taxed by the government and are generally unusable for legitimate productive purposes. Hence, only gross outflows are considered in the Change in External Debt (CED) method (see definition of CED).

Appendix A: Macroeconomic drivers of licit and illicit flows

The table below presents some interesting results on the significance of macroeconomic drivers in explaining licit and illicit financial flows from Russia. They are based on the following model:

$$CF_t = \beta_0 X_t + \varepsilon_t$$

where CF_t represents a general term for capital flight, which we test under two conditions: (i) licit and (ii) illicit. Other components of equation (1) include: X_t, a vector of macroeconomic indicators (a list of which can be found in the table below), and ε_t, the error term. In the table below we see the regression results from three specifications of equation (1) using the minimum number of drivers listed on the left-hand column. These are real GDP growth, the real effective exchange rate (REER) which seeks to capture expectations of exchange rate depreciation, interest rate differentials (6-month U.S. Treasury bill rate minus real domestic deposit rates), change in external debt, foreign direct investments (FDI), and expected inflation which proxies the opportunity cost of holding money. The change in external debt was included to test whether new loans simply financed more licit and illicit flows (through a revolving door effect) while FDI was included as a proxy for the business climate.

The Macroeconomic Drivers of Licit and Illicit Flows

Macreconomic Independent Variables	Financial Flows					
	Licit			Illicit Outflows		
	1	2	3	1	2	3
Constant	11.23 ***	12.1 ***	12.38 ***	9.46 ***	10.15 ***	10.44 ***
Real GDP Growth		0.02			0.02 *	
REER		0.02 ***	0.02 ***		0.004	0.004
Interest Rate Differential	-0.05 ***			-0.02		
Change in Ext. Debt	0.32 ***	0.25 ***	0.27 ***	0.06	0.02	0.05
FDI	-0.3 **	-0.23	-0.28	0.18	0.21	0.17
Expected Inflation	1.76 ***			0.74 ***		
Adjusted R2	0.84	0.65	0.63	0.29	0.11	-0.05
Durbin Watson	2.05	1.6	1.12	2.35	1.90	1.57

Notes: **, and *** indicates significance at the 5% and 1% level, respectively.

The illicit component of financial flows is measured as total illicit flows, where total illicit flows are defined as the sum of gross blance of payments leakages, gross export misinvoicing, and gross import misinvoicing.

The results show that *macroeconomic variables are somewhat better at explaining licit private sector flows than illicit flows. In other words, a larger number of macroeconomic indicators explain licit flows at the 1 percent confidence level than explain illicit flows at the same level.* The real effective exchange rate (or REER, which captures market sentiment about whether the exchange rate is at an appropriate level to preserve the economy's external competitiveness vis-à-vis major trading partners), interest rate differential, the change in external debt, and expected inflation are significant in explaining licit capital flows from Russia.

Of these variables, all are significant in explaining licit flows at the 1 percent level except foreign direct investment (FDI) and real GDP growth. Mody and Murshid (2011) note that capital flows promote growth only if growth volatility is below a certain threshold, while capital flows at high levels of volatility impede growth.[36] Given the small sample size of observations, significance of real GDP growth at the 10 percent level may be a reflection of the volatile capital flows that Russia experienced over the first ten years following its formation and again during the recent global financial crisis. FDI, on the other hand, is significant at the 5 percent level in specification 1. As expected, we find that a decline in FDI is accompanied by a loss of investor confidence about domestic economic prospects, and thereby increasing licit outflows.

Macroeconomic indicators basically capture the relative attractiveness of the domestic economy for investment relative to investment opportunities abroad. For instance, overvaluation of domestic currency, as reflected in an increase in the REER, will lead to an anticipated depreciation of the ruble, lowering the stock value of private capital. Interest rate differentials were generally in favor of retaining domestic capital. Negative coefficients mean that as differentials favored investment in domestic assets, legal capital flight declined. On the other hand, we find that there seems to be some evidence of a revolving door effect between increases in external debt (in the form of new loans) and private capital outflows, implying that such loans may have financed legal capital flight.

Regarding the drivers of illicit flows, specifications 1 and 2 show that macroeconomic indicators such as the REER, interest rate differentials, external debt policies, and FDI *were not significant in explaining gross flows of illicit capital out of Russia*. However, according to equation 2, there is some evidence that real GDP growth is significant at the 10 percent level in explaining illicit outflows and that expected inflation is significant at the 1 percent level in explaining illicit outflows. In other words, because the real GDP growth, and expected inflation were found to be significant at the 1 percent level, *this implies that the holders of illicit capital also seek to avoid loss of capital through macroeconomic instability.*

Interestingly, expected inflation is found to be significant in explaining both licit and illicit flows. Inflation expectations are generated through the adaptive or error-learning process. A positive and significant coefficient on expected inflation implies that expectations are translated into actual inflation in the current period. When both capital holders and investors expect inflation to rise, they will send money out of the country by any means possible, licit or illicit. *In summary, there is scant evidence that holders of illicit capital are willing to forgo principal due to macroeconomic instability through high inflation.*

[36] Reference, Mody, Ashoka and Panini Murshid. *Growth from International Capital Flows: The Role of Volatility Regimes,* IMF Working Paper WP/11/90, 2011.

Appendix Tables

Table 1. Trade Variables

(Millions of Rubles or Percent)

	Trade		Trade Openness
Year	Exports	Imports(cif)	Trade/GDP
1994	148,607	121,757	44.27
1995	378,000	314,367	48.47
1996	463,773	383,968	42.22
1997	502,688	458,064	41.01
1998	722,469	619,339	51.03
1999	1,860,066	1,070,714	60.76
2000	2,954,558	1,388,116	59.44
2001	2,971,854	1,725,066	52.52
2002	3,363,672	2,102,278	50.52
2003	4,171,933	2,568,214	51.03
2004	5,278,926	3,086,561	49.13
2005	6,895,611	3,902,553	49.97
2006	8,264,052	4,925,954	49.00
2007	9,065,983	6,288,751	46.18
2008	11,724,776	7,982,045	47.74
2009	9,629,535	6,696,645	42.07
2010	12,159,955	8,309,110	45.32
2011	15,336,464	10,417,350	47.37

Source: International Financial Statistics IMF Online Database

Table 2A. Balance of Payments Variables

(Millions of Rubles)

Year	Current Account: Net	Direct Investment: Net	Reserve Assets: Net	External Debt
1994	17,185	896	4,240	432,301
1995	31,743	6,656	-47,332	563,300
1996	55,547	8,485	14,542	702,640
1997	-465	9,716	-11,167	760,371
1998	2,126	14,475	51,498	3,671,541
1999	606,040	27,127	-43,623	4,718,361
2000	1,317,543	-13,011	-450,313	4,505,414
2001	989,838	6,292	-239,498	4,596,242
2002	912,727	-2,242	-356,585	4,684,110
2003	1,086,804	-54,294	-809,179	5,174,521
2004	1,714,772	47,899	-1,303,419	5,460,531
2005	2,392,888	-3,347	1,738,358	6,905,356
2006	2,574,618	-178,113	2,922,101	6,602,315
2007	1,989,392	-234,260	3,809,715	8,869,395
2008	2,573,025	-482,369	-967,393	11,832,078
2009	1,542,713	227,430	107,181	11,293,686
2010	2,158,554	280,446	1,116,049	11,725,711
2011	2,903,952	423,245	371,106	13,278,274

Source: IMF Balance of Payments Database, World Bank

Table 2B. Balance of Payments Variables

(Millions of U.S. Dollars)

Year	Current Account: Net	Direct Investment: Net	Reserve Assets: Net	External Debt
1994	7,844	409	1,935	121,775
1995	6,963	1,460	-10,382	121,401
1996	10,847	1,657	2,840	126,374
1997	-80	1,680	-1,930	127,579
1998	219	1,492	5,306	177,799
1999	24,616	1,102	-1,772	174,754
2000	46,839	-463	-16,009	159,993
2001	33,935	216	-8,211	152,496
2002	29,116	-72	-11,375	147,373
2003	35,410	-1,769	-26,365	175,675
2004	59,512	1,662	-45,236	196,783
2005	84,602	-118	61,461	239,911
2006	94,686	-6,550	107,466	250,743
2007	77,768	-9,158	148,928	361,338
2008	103,530	-19,409	-38,925	402,726
2009	48,605	7,165	3,377	373,419
2010	71,080	9,235	36,751	384,740
2011	98,834	14,405	12,630	412,420

Source: IMF Balance of Payments Database, World Bank

Table 3. Underground Economy

Year	Rubles Millions	Percent of GDP
1994	471,689	77.2
1995	713,192	49.9
1996	936,406	46.6
1997	996,908	42.6
1998	1,182,672	45.0
1999	2,109,714	43.7
2000	4,425,220	60.6
2001	5,914,851	66.1
2002	5,384,269	49.8
2003	5,868,166	44.4
2004	7,519,062	44.2
2005	10,140,974	46.9
2006	11,829,672	43.9
2007	13,841,793	41.6
2008	13,965,765	33.8
2009	10,737,458	27.7
2010	12,799,047	28.3
2011	19,002,112	35.0

Source: Global Financial Integrity Staff Estimates. GDP figures taken from IMF World Economic Outlook, 2012.

Table 4. Augmented Dickey-Fuller Unit Root Tests

	Levels				Levels			
	Intercept		Intercept and Trend		Intercept		Intercept and Trend	
Variable	t-stat	Significance	t-stat	Significance	t-stat	Significance	t-stat	Significance
Real GDP	0.313		-3.820	**	-2.499		-2.541	
GDP growth	-2.479		-2.510		-5.819	***	-5.222	***
Total illicit flows	-2.891	**	-3.058		-3.669	**	-4.311	**
Underground economy	-2.367		-0.422		-4.021	***	-4.669	**
Total taxes	-2.544		-1.886		-4.513	***	-4.646	**
Interest rate	-1.227		-1.322		-2.187		-4.586	***
Unemployment	-1.531		2.119		-4.002	***	-3.832	**
Remittances	-0.169		-3.768	**	-4.280	***	-4.065	**
Oil prices	0.190		-2.133		-5.026	***	-4.343	**
Oil exports	-2.454		-0.172		-3.227	**	-3.828	**

Note: *,**,*** indicate significance at 10, 5, and 1 percent levels respectively.

Table 5. Critical Values for the Durbin-Watson Test

No. of Regressors	Lower Bound	Upper Bound
1	1.03	1.26
2	0.93	1.40
3	0.82	1.56
4	0.72	1.74

Source: Rao and Miller (1971)
Note: Critical Values calculated for 18 observation sample size at the 5 percent sigbificance level.

Table 6a. Simulated vs. Actual Outputs of Variables
(in natural log form)

Year	Total Illicit Flows	Sim Total Illicit Flows	Underground Economy	Sim Undeground Economy
1994	10.10	10.80	13.06	13.44
1995	11.55	11.88	13.48	14.14
1996	11.96	11.98	13.75	14.25
1997	12.14	12.62	13.81	14.59
1998	12.37	11.69	13.98	13.94
1999	12.91	13.17	14.56	14.93
2000	13.34	13.75	15.30	15.46
2001	12.58	13.10	15.59	15.01
2002	13.60	13.09	15.50	14.98
2003	13.76	13.39	15.59	15.22
2004	13.70	13.53	15.83	15.44
2005	14.22	13.71	16.13	15.81
2006	14.28	14.11	16.29	16.25
2007	14.54	14.27	16.44	16.41
2008	14.44	14.31	16.45	16.90
2009	12.88	12.16	16.19	14.99
2010	13.13	13.92	16.36	16.36
2011	14.36	14.34	16.76	17.03

Source: Global Financial Integrity

Table 6b. Simulated vs. Actual Outputs of Variables
(in millions of rubles)

Year	Total Illicit Flows	Sim Total Illicit Flows	Underground Economy	Sim Undeground Economy
1994	24,223	49,229	471,689	686,935
1995	103,798	144,418	713,192	1,380,427
1996	155,675	160,030	936,406	1,538,378
1997	186,704	302,824	996,908	2,169,996
1998	235,549	119,382	1,182,672	1,136,159
1999	405,245	521,882	2,109,714	3,053,817
2000	621,681	937,955	4,425,220	5,178,500
2001	289,346	490,879	5,914,851	3,308,868
2002	804,508	482,808	5,384,269	3,207,400
2003	945,822	650,924	5,868,166	4,056,394
2004	887,142	753,638	7,519,062	5,084,928
2005	1,491,852	902,147	10,140,974	7,378,884
2006	1,592,477	1,346,096	11,829,672	11,429,826
2007	2,061,592	1,576,910	13,841,793	13,419,119
2008	1,869,958	1,633,583	13,965,765	21,939,815
2009	394,293	191,545	10,737,458	3,231,179
2010	505,628	1,104,689	12,799,047	12,735,487
2011	1,726,243	1,687,652	19,002,112	24,825,559

Source: Global Financial Integrity

Table 9. Russian Federation: Double Tax Avoidance Agreements, 1987-2007

Country	Date of DTAA	OFC/Tax Haven	Country	Date of DTAA	OFC/Tax Haven
Albania	4/11/95		Macedonia	10/21/97	
Algeria	3/10/06		Malaysia	7/31/87	x
Armenia	12/28/96		Mali	6/25/96	
Australia	9/7/00		Mexico	6/7/04	
Austria	4/13/00		Moldova	4/12/96	
Azerbaijan	7/3/97		Mongolia	4/5/95	
Belgium	6/16/95		Morocco	9/4/97	
Belorussia	4/21/95		Namibia	3/31/98	
Botswana	4/8/03		Netherlands	12/16/96	
Brazil	11/22/04		New Zealand	9/5/00	
Bulgaria	6/8/93		North Korea	9/26/97	
Canada	5/10/95		Norway	3/26/96	
China	5/27/94		Philippines	4/26/95	
Croatia	10/2/95		Poland	5/22/92	
Cyprus	5/12/98	x	Portugal	5/29/00	
Czech Republic	11/17/95		Qatar	4/20/98	
Denmark	2/8/96		Romania	9/27/93	
Egypt	9/23/97		Saudi Arabia	2/11/07	
Finland	5/4/96		Serbia and Montenegro	10/12/95	
France	11/26/96		Singapore	9/9/02	x
Germany	5/29/96		Slovakia	6/24/94	
Greece	6/26/00		Slovenia	9/29/95	
Hungary	4/1/94		South Africa	11/27/95	
Iceland	11/26/99		Spain	12/16/98	
India	3/25/97		Sri-Lanka	3/2/99	
Indonesia	3/12/99		Sweden	6/15/93	
Iran	3/6/98		Switzerland	11/15/95	x
Ireland	4/29/94	x	Syria	9/17/00	
Israel	4/25/94		Tajikistan	3/31/97	
Italy	4/9/96		Thailand	9/23/99	
Kazakhstan	10/18/96		Turkey	12/15/97	
Korea	11/19/92		Turkmenistan	1/14/98	
Kuwait	2/9/99		Ukraine	2/8/95	
Kyrgyz	1/13/98		United Kingdom	2/15/94	
Lebanon	4/8/97	x	United States	6/17/92	
Lithuania	6/29/99		Uzbekistan	3/2/94	
Luxembourg	6/28/93	x	Venezuela	12/22/03	
			Vietnam	4/27/93	

Source: International Monetary Fund, Organization for Economic Co-operation and Development, Bank for International Settlements

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