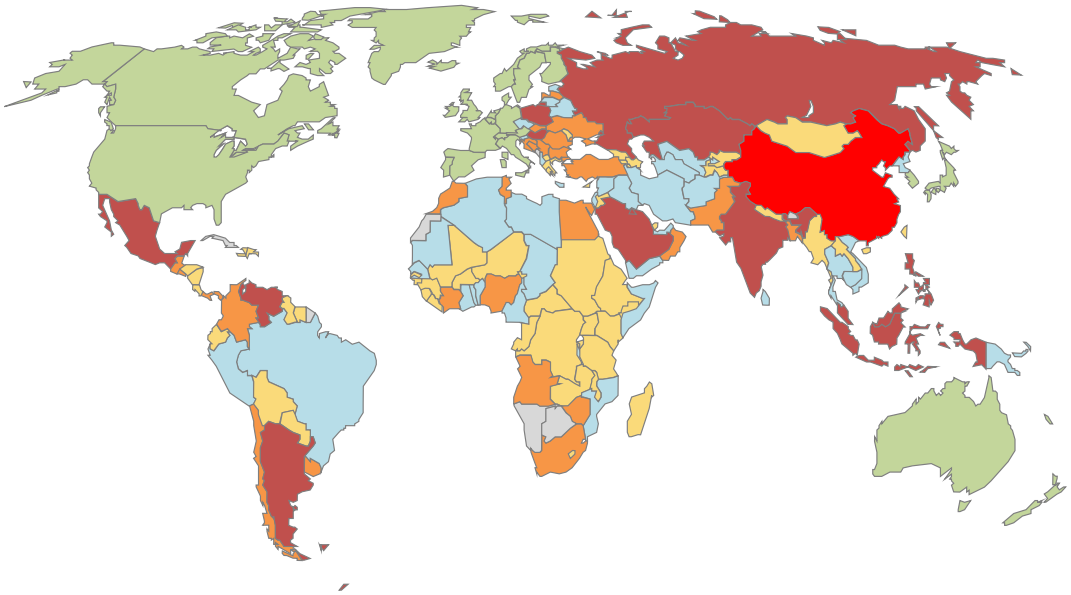
Illicit Financial Flows from Developing Countries: 2002—2006

Global Financial Integrity

Dev Kar and Devon Cartwright-Smith



Global Financial Integrity
Wishes To Thank
The Ford Foundation
For Supporting This Project

FORD FOUNDATION

Strengthen democratic values, reduce poverty and injustice,
promote international cooperation and advance human achievement

Global Financial Integrity
A Program of the Center for International Policy

1319 18th Street, NW - Suite 200 - Washington, DC 20036 - 202.293.0740
www.gfip.org

GLOBAL FINANCIAL INTEGRITY
A Program of the Center for International Policy

Illicit Financial Flows from Developing Countries, 2002-2006

Prepared by Dev Kar and Devon Cartwright-Smith[1]

Abstract

The objective of this study is to estimate the volume and pattern of illicit financial flows—money that is illegally earned, transferred, or utilized—from all developing countries based on a critical review of competing models. Through a process of testing various combinations of these models and employment of a two-stage filter for elimination of "spurious data," this study presents a range of estimates of illicit financial flows from developing countries from 2002 through 2006. While all developing countries which report relevant data to the International Monetary Fund (IMF) and the World Bank are included in the study, salient deviations from the regional classification used in the IMF's International Financial Statistics are noted in the paper. Overall findings indicate that illicit financial flows are growing in volume on a yearly basis with the largest recorded outflows coming from Asia and Europe. The Middle East and North Africa regions demonstrate the fastest yearly growth. While the methodology employed in this study has produced reliable estimates on illicit financial flows based on the most recent data available, the authors note that estimates of illicit financial flows based on existing economic models are likely to understate the actual problem because official statistics cannot capture all of the conduits for sending capital out of a country.

[1] Dev Kar, formerly a Senior Economist at the International Monetary Fund (IMF), is Lead Economist at Global Financial Integrity (GFI) at the Center for International Policy, and Devon Cartwright-Smith is in the Doctoral Program in Economics at Georgetown University and a Research Associate at GFI. The authors thank Raymond Baker for helpful comments and Ramil Mammadov, Janak Upadhyay, and Mark Bulmer for their technical assistance. Thanks are also due the staff of the IMF's Statistics Department for their assistance with balance of payments data. Any errors that remain are the authors' responsibility. The authors would welcome comments; citations should refer to a Working Paper of Global Financial Integrity, a Program of the Center for International Policy (CIP). The views expressed are those of the authors and do not necessarily reflect those of CIP or its board.

GLOBAL FINANCIAL INTEGRITY

Illicit Financial Flows: A Note on Concepts

The literature on "flight capital" is rich and varied but far from thorough or complete. The term **flight capital** is most commonly applied in reference to money that shifts out of developing countries, usually into western economies. Motivations for such shifts are usually regarded as portfolio diversification or fears of political or economic instability or fears of taxation or inflation or confiscation. All of these are valid explanations for the phenomenon, yet the most common motivation appears to be, instead, a desire for the hidden accumulation of wealth.

Flight capital takes two forms—legal and illegal. **Legal flight capital** is calculated in the Hot Money Method of analysis as portfolio investment and other short-term investments, but not including longer-term foreign direct investment. Legal flight capital is recorded on the books of the entity or individual making the transfer, and earnings from interest, dividends, and realized capital gains normally return to the country of origin.

Illegal flight capital is intended to disappear from any record in the country of origin, and earnings on the stock of illegal flight capital outside of a country do not normally return to the country of origin. Illegal flight capital can be generated through a number of means that are not revealed in national accounts or balance of payments figures, including trade mispricing, bulk cash movements, hawala transactions, smuggling, and more.

While there is a clear conceptual difference between legal and illegal flight capital, the statistical distinction between the two can be difficult. Furthermore, available data are often incomplete or erroneously entered in developing country accounts. This report relies on available data without making a judgment as to its accuracy.

We utilize several methodologies and data bases to estimate both the legal and illegal components of flight capital, namely the Hot Money, Dooley, and World Bank Residual Methods, IMF Direction of Trade Statistics, and the International Price Profiling System. To the data that emerge from these methodologies we apply a series of filters and exclusions as we strive to present robust yet conservative estimates.

Some researchers are comfortable using the terms "recorded" and "unrecorded" but uncomfortable using the terms "legal" and "illegal" or "licit" and "illicit." We argue that by far the greater part of unrecorded flows are indeed illicit, violating the national criminal and civil codes, tax laws, customs regulations, VAT assessments, exchange control requirements and banking regulations of the countries out of which unrecorded/illicit flows occur. To make the following analysis straightforward, we treat recorded flight capital as legal and unrecorded flight capital as illegal, recognizing that there is some interplay between the two.

We particularly want to address the transition from the term illegal flight capital to the term "illicit financial flows." Illicit money is money that is illegally earned, transferred, or utilized. If it breaks laws in its origin, movement, or use it merits the label. Flight capital is an expression that places virtually the whole of the problem upon the developing countries out of which the money comes. It suggests, without quite saying so, that it is almost entirely their responsibility to address and resolve the concern. The expression illicit financial flows does a better job of clarifying that this phenomenon is a two-way street. The industrialized countries have for decades solicited, facilitated, transferred, and managed both licit and illicit financial flows out of poorer countries. This reality is becoming increasingly understood, and the growing global use of the term illicit financial flows contributes toward this end.

Our best estimate is that illicit financial flows out of developing countries are some $850 billion to $1 trillion a year. We believe this estimate is conservative. It does not include, for example, major forms of value drainages out of poorer countries not represented by money, namely:

1) Trade mispricing that is handled by collusion between importers and exporters within the same invoice, not picked up in mispricing models based on IMF Direction of Trade Statistics, a technique utilized extensively by multinational corporations,

2) The proceeds of criminal and commercial smuggling such as drugs, minerals, and contraband goods, and

3) Mispriced asset swaps, where ownership of commodities, shares, and properties are traded without a cash flow.

We hope to include more of these omissions in future studies.

We welcome comment on methodologies, filters, exclusions, and other aspects of this analysis, and in particular we welcome additional studies of the reality of illicit money shifting out of developing countries. We believe that any responsible analysis will produce estimates of staggering magnitude, underlining the task ahead in curtailing this critical global problem.

Global Financial Integrity thanks Dev Kar and Devon Cartwright-Smith for their considerable contributions to this report.

Raymond W. Baker
Director, Global Financial Integrity
December 2008

Table of Contents

List of Charts and Maps

I. ILLICIT FINANCIAL FLOWS

1. Illicit financial flows involve the transfer of money earned through activities such as corruption, transactions involving contraband goods, criminal activities, and efforts to shelter wealth from a country's tax authorities. Such flows may also involve funds that were earned through legitimate means. It is in transferring legitimately earned funds in direct contravention of applicable capital controls that the transfer becomes an illicit flow, regardless of the fact that the funds were earned in a legitimate activity. Table 1 (Statistical Appendix) shows that almost all developing countries have some form of capital controls, although the extent of such controls varies in intensity. Hence, illicit flows do not include the conveyance of capital which are recorded and in full compliance of local laws and foreign exchange regulations (i.e., capital exports). The paper makes no attempt to link illicit financial flows with the nature of underlying activities whether legal or illegal. Thus defined, these flows involve capital that is illegally earned, transferred, or utilized and covers all unrecorded private financial outflows that drive the accumulation of foreign assets by residents *in contravention of applicable laws and the regulatory framework.* In other words, if capital flows are unrecorded or if they skirt capital controls in place, such outflows are considered to be illicit for the purposes of this study. Given that we are primarily concerned with estimating the overall volume of illicit financial outflows from developing countries and comparing them across various regions and countries, we chose a uniform measure to study the phenomenon.

2. When legitimate capital flows to and from a country are in conformity with its laws and financial regulations, balance of payments compilers can, except for technical problems in recording, largely account for those transactions in official balance of payments statistics. In contrast, there exist no official statistics on illicit flows because such outflows largely escape the radar screen of the country's regulatory agencies. Because a country's official statistics do not directly record the outflows of illicit capital, researchers have developed a number of proxy measures to study the phenomena. All of these proxy measures, based on stylized models, have a limited capacity to reflect the actual volume of such capital outflows.

3. Take for instance non-trade capital flight that does not occur through the trade misinvoicing mechanism but often involves the acquisition of cash or other instruments payable to the bearer. The acquired currency, say dollars, could exit the country in a number of ways such as (i) by someone carrying suitcases full of cash, (ii) through a professional courier, (iii) by mail, or (iv) through electronic money transfers that are unlikely to be recorded in the weak bank reporting systems in many poor developing countries. "Hawala-style" swap arrangements are impossible to trace using official statistics and may also be used to illegally send money out of the country. Even traded goods involving customs invoices and declarations cannot capture misinvoicing concluded by word of mouth and never reported on official documents (through same-invoice faking).

4. Smuggling is another type of trade transaction that is not captured in customs documents. Smuggling tends to be rampant when there are significant differences in cross-border prices in certain goods between countries that share a long and porous frontier. The profits from smuggling often generate illicit flows as smugglers seek to shield their ill-gotten gains from the scrutiny of officials, even as smuggling distorts the quality of bilateral trade. The resulting trade data distortions may indicate

that there is inward flow of illicit capital into a country when in fact the reverse is true. Therefore, as smuggling is not reflected in official balance of payments statistics, the models used in this paper do not capture smuggling-related illicit flows.

5. Understanding the determinants of illicit financial flows is important because policies that seek to curtail or reverse such outflows must necessarily address the factors that propel them. While economic theory points to a number of factors that seem to drive illicit flows, finding strong empirical evidence has been problematic. For instance, some studies have found a significant link between illicit flows and the degree of macroeconomic mismanagement that reduces the returns on domestic investment relative to some representative foreign rate (such as the U.S. Treasury Bill rate). However, the link between interest rate differentials and illicit capital flows has been tenuous, due to the currency composition of such flows. For example, Schneider (2003) found that Ugandan flight capital usually finds its way to South Africa, which means the South African T-bill rate, rather than the U.S. Treasury Bill rate, is important. Other studies have also pointed to a significant inverse relationship between the volume of illicit financial flows and the central government surplus. Because a large government deficit is a promise of future tax liabilities, domestic residents often seek to transfer capital out of the country in order to avoid paying future taxes or to avoid indirectly financing the deficit through the inflation tax. Hence, the direct and indirect risk of higher taxation influences the determination of illicit flows in quantitative models. However, the link between fiscal deficits and illicit capital flows has not been uniformly strong for all countries and all time periods; after all, not all deficits are bad. Furthermore, domestic residents' collective expectation of exchange rate depreciation could also drive illicit flows as they shift a significant part of their portfolio overseas to protect its real value. That shift from domestic to foreign portfolio balances frequently occurs in direct contravention of domestic capital controls and exchange regulations that typically prevail in developing countries with non-convertible currencies. In practice, it has been difficult to develop an exchange rate index that measures disequilibrium in the exchange market. Hence, for one reason or another, cross-sectional studies involving illicit flows from a large sample of countries have failed to find conclusive evidence of a statistically significant relationship between such outflows and the above-mentioned variables, although some explanatory variables (e.g., fiscal deficit) tend to perform better than others. Finding a significant and stable link between the flows of illicit capital and some of these drivers has been elusive because a major motivation behind these outflows is often the sheltering of one's accumulated wealth. This motivation frequently overrides all the driving factors discussed above even if it costs those involved more in taxes to accomplish.

6. Apart from the macroeconomic factors that give rise to what Baker (2005) calls "commercial dirty money," lack of governance and political instability also drive the "corrupt" and "criminal" components of illicit outflows. Corruption often involves government officials ignoring their responsibilities or acting in violation of them for some material gain. However, corruption also involves bribe-taking, specifically whereby government officials and others (including those in the private sector) are bribed to encourage or facilitate their action to arrive at a speedier or more favorable outcome to the agent or individual offering the bribe. Often, a weak government presiding over its weak judicial, administrative, and executive branches provides an inadequate level of public services, most of which are of poor quality. These factors, along with "grassroots corruption" in the private sector (involving individuals, private households, and enterprises) drive the extensive corruption permeating the entire civil society. Grassroots corruption fuels growth of the underground economy, from which the government is unable to raise taxes. For example, in China, India, and Russia there are vast competitive markets involving trading of secondhand goods. These include cars, real estate, and services such as consulting, show business, and retail trade, to name a few. In these markets, transactions are typically conducted in "black" money (i.e., money that is unaccounted for). Transactions in black markets are seldom recorded and are carried out at

prices that deviate sharply from the "arm's length" prices prevailing in free markets. As the revenue generated from such commercial, corrupt, and criminal activities are seldom reflected in official statistics, stylized models using official data are likely to seriously underestimate the magnitude of illicit capital leaving the country in a clandestine manner. While corruption is difficult to measure and hard to capture in a single variable, some researchers, such as Le and Rishi (2006), have carried out case studies of corruption and illicit flows using a testable model for a large sample of countries. Their panel data analyses indicate a significantly positive relationship between corruption and illicit outflows of capital from most developing countries.

7. This paper explores three alternative models that have been used by economists since the early 1960s to estimate capital flight. In doing so, the paper makes two distinct contributions. First, it estimates outflows from all developing countries broken down by various regions of the world (see Classification of Countries, Table 2), making use of large-scale macroeconomic databases maintained by international organizations such as the International Monetary Fund and the World Bank. The estimates of total illicit capital outflows are then compared to those obtained by Baker (2005) as that is the only recent study that applies to all developing countries (see below). Second, the paper derives a probable range of such illicit flows based on the application of multiple models and "normalization" techniques (Section III).

8. Few researchers have carried out large-scale studies of illicit or unrecorded financial flows from all developing countries and regions and most estimates are quite outdated. For instance, according to a study carried out in October 1994 at the World Bank's International Economics Department (cited by Kant, 1996), "capital flight" from all developing countries in 1992 ranged as follows: US$44.8 billion (Hot Money method), US$154.4 billion (Cline—World Bank Residual method) and US$377.2 billion (Dooley method). Thus, excluding the Hot Money method which generally tends to understate unrecorded flows, such transfers from developing countries ranged between US$154.4 to US$377.2 billion. If one were to simply extrapolate this range to current dollars, that would imply that in 2006 capital flight from developing countries would range between US$443.4 to US$1.1 trillion dollars (given that the world rate of inflation between 1992 and 2006, according to the IMF's International Financial Statistics (IFS) was 287.2 percent). Even this range is likely to be understated for two reasons: (i) the extrapolation merely converts the 1992 dollar figures into current dollars and does not take account of the growth of world trade and economy as well as increasing globalization—all of which could well have driven actual capital flight much higher; and (ii) the World Bank's sample of developing countries is smaller than the IMF definition, which is the one used in this paper.[1] While the World Bank estimates cited in Kant (1996) are somewhat dated, the only recent estimate of illicit financial flows from developing countries which can be directly compared to estimates obtained here is that obtained by Baker (2005). Based on a survey of key officials in major businesses, government regulatory agencies, and international organizations across the world, Baker compiled estimates of cross-border illicit financial flows from developing countries of between US$539 to US$778 billion in 2005. For this reason, Chart 6 compares the non-normalized and normalized estimates of illicit flows obtained by the CED-GER models against those obtained by Baker.

[1] The applicable World Bank definition of developing countries underlying its estimates of capital flight are all countries with a 1991 GNP per capita income of less than US$7,911 which results in a narrower list of countries than presented in Table 1.

II. METHODS OF ESTIMATION

A. Hot Money (Narrow) Method

9. The Hot Money method of estimating illicit flows is based on two observations: (i) that net errors and omissions (NEO; BOP Line 4 998) in a country's balance of payments reflect unrecorded capital outflows (inflows if NEO is positive), and (ii) that recorded capital outflows from the private sector (the government, monetary authorities, or banks do not contribute to such outflows) should be added to the unrecorded financial transactions for which NEO is a proxy. There are, in fact, three different measures of hot money, depending upon the coverage of recorded private sector capital outflows. The broader the coverage of private sector short-term capital outflows, i.e. "hot money", the broader the measure. Hot money responds quickly to a crisis, whether political or financial and also to expectations regarding tighter capital controls or currency devaluation. The broadest measure, Hot Money 3, includes, apart from the short-term capital outflows of the private sector, portfolio investments in bonds and corporate equity in an attempt to capture all possible types of financial instruments as conduits for recorded flows. The narrowest measure is simply the NEO, without additional recorded private sector capital outflows.

According to the *Balance of Payments Manual Fifth Edition (BPM5)*, NEO is defined as follows:

+/- NEO = -/+ (Current Acct. Bal. + Capital & Financial Acct. Bal. + Reserves)

The reverse sign of the NEO ensures that the sum of all major BOP components equals zero; this is consistent with the double-entry book-keeping method of BOP compilation. For instance, a surplus in a country's current account must be exactly offset by a net outflow from its capital and financial accounts and/or a drawdown in reserves. If not, the residual must be exactly offset by a NEO with the opposite sign. Hence, the NEO acts as a balancing item in the compilation of a country's external transactions with the rest of the world. For example, when a current account surplus is not offset by a capital account and/or reserves deficit, this means that the shortfall will show up as negative NEO. Therefore, under the *BPM5* nomenclature, illicit outflows are reflected by negative NEO. However, this accounting outcome is not strong enough to definitely confirm such outflows.

10. In this study, the Hot Money Narrow measure is selected over the broader measures because we are primarily concerned with unrecorded capital flows and not the recorded capital outflows of the private sector. It should be noted however that apart from unrecorded capital flows, the NEO also reflects statistical errors involved in recording current and capital account transactions. These statistical issues could be due to technical problems in compiling BOP statistics related to coverage of the data, timing of recording, exchange conversion, method of valuation, etc. The "catch-all" nature of NEO does not allow it to only reflect (unrecorded) illicit flows. Hence, in order to abstract from "white noise" in the NEO and make a stronger case that there were illicit outflows from the country, our Hot Money estimation is subjected to the two-stage filtration process (see Section III). At the first stage, the Hot Money measure should be significantly negative over at least three out of the five years 2002-2006 to weed out "weak" cases of illicit outflows. In the second stage, the Hot Money measure must indicate substantive illicit flows

—that is the measure must exceed a threshold set at 10 percent of exports valued at "free on board" or f.o.b. basis. The reason for setting the threshold at 10 percent of exports f.o.b. is discussed in Section III, paragraph 52.

11. While the NEO-based narrow Hot Money provides a measure of unrecorded capital flows in the balance of payments, the broadest version of the model incorporates various recorded flows of short-term capital transactions carried out by the private sector. Specifically, these include short-term private sector flows related to portfolio investments, equity securities, debt securities, money market instruments, trade credits, loans, currency and other deposits and investments. Consequently, if one were to focus exclusively on these recorded flows such an exercise can yield estimates of licit financial flows (or "normal" capital flight) from developing countries. However, as Table 3 clearly shows, a large number of developing countries do not report to the IMF the various types of private short-term financial flows. As a result, estimates of licit financial flows are likely to be significantly understated. Keeping in mind these data limitations, we estimate below that licit financial flows from developing countries (defined as those short-term private sector outflows recorded in the balance of payments) have more than doubled from US$92.4 billion in 2002 to US$207.6 billion in 2006, the last year from which data are available. Licit financial outflows from individual developing countries tend to be small, averaging less than 1 percent of GDP annually, although in a few cases they can average between 2-3 percent of GDP. Rarely, and mostly in response to significant political and macroeconomic instability, do such outflows shoot up to 10-12 percent of GDP in a particular year.

Licit Outflows ($millions)	2002	2003	2004	2005	2006
	$92,364	$67,141	$117,466	$175,856	$207,607

B. Limitations of Hot Money Narrow Method

12. Most economists recognize that the Hot Money Narrow measure, which relies exclusively on the NEO, is only able to capture a small part of illicit flows. Nevertheless, Hot Money Narrow estimates of illicit flows are presented in this paper for the sake of completeness and to allow comparison with other model estimates in order to draw attention to their inadequacies. The primary drawback of the Hot Money Narrow model is that the NEO not only reflects unrecorded capital flows but also statistical errors in recording both current and capital account components. In the case of many developing countries with weak balance of payments compilation systems, a significant part of the NEO may be due to statistical issues in recording balance of payments items rather than a reflection of illicit capital flows. This is quite apart from the fact that there may be substantial shortfalls in recorded exports and/or imports due to smuggling, cross-border trade, and trade in contraband items, which can drive illicit flows that are not captured by the Hot Money method.

13. The other limitation of the Hot Money approach arises from data limitations. Table 3 (Statistical Appendix) shows that data on NEO are missing for 31 countries which would further drive down the rather low estimates of illicit flows afforded by the Hot Money Narrow measure. Of these countries, there are strong prima facie reasons to believe that illicit flows from Afghanistan, Algeria, Congo (DRC), Iran, Iraq, Somalia, and Uzbekistan could be significant due to economic and/or political instability. For these reasons, the Hot Money Narrow method provides significantly lower estimates of overall illicit flows from developing countries. As we will see, these fall well short of estimates based on other models tested.

C. Dooley Method

14. The Dooley (1986) method proposes that the stock of claims held on nonresidents, specifically privately held foreign assets, that do not generate investment income reported in the balance of payments can be taken as a measure of illicit capital flight. His assumption is that the interest earned on legal and normal capital outflows would be reported in the balance of payments, whereas interest earned on illicit flight capital (or outflows motivated by tax avoidance) would go unreported in the BOP. Illicit flows can therefore be approximated by cumulating the identified capital outflows and making three adjustments to capture unrecorded capital flows—add errors and omissions, add the net stock of public external debt reported to the World Bank (i.e., net of the recorded BOP liabilities), and add the flow of other investment income at an assumed market rate of interest (such as the one-year U.S. Treasury bill rate). Hence:

$$\mathbf{K = A + NEO + (B - C) - D}$$

where **K** is capital flight *stock* under the Dooley method, **A** is the cumulative non-FDI BOP claims, **NEO** represents net errors and omissions, **B** the stock of external debt reported to the World Bank, **C** the cumulative recorded BOP liabilities that represent the private sector's acquisition of foreign assets, and **D** the capitalized non-FDI income (at a market rate of interest such as the one-year U.S. Treasury bill rate). Note that the Dooley method excludes private non-guaranteed debts from the above equation on the grounds that such debts are self-liquidating and should not generate a gap between reported and unreported flows related to those transactions. The Dooley measure of capital flight is the difference from one year to the next in the capital flight stock **K.**

15. The Dooley method generates estimates of illicit flows that are in general much larger than those derived through the Hot Money Narrow method. Estimates of illicit flows, thus calculated, can change even without a change in the total stock of claims on non-residents (**A**) if earnings on some of the existing claims (**D**) were to come within the reach of the country's regulatory agencies.

D. Limitations of Dooley Method

16. While the Dooley Model broadly captures the dynamics of illicit flows, its current applicability is limited by the fact that *BPM5* no longer requires capital flows to be classified by maturity; hence, the data on short-term private sector capital flows required to estimate the model, are no longer available. This is because *BPM5* guidelines had to recognize the practical problems BOP compilers face recording the maturities related to increasingly complicated and voluminous global financial transactions in various instruments. The distinction between short- and long-term assets and liabilities in the BOP being no longer feasible, deriving Dooley estimates under *BPM5* becomes complicated and subject to errors in classification. If we assume that maturity distinctions are no longer valid and that both types of capital flows on the asset and liability side ought to be considered, this may lead to an overestimation of the volume of illicit financial flows. **The unavailability of detailed balance of payments data related to short-term private sector capital flows was one of the main reasons why the Dooley model was not estimated in this study.**

17. The second data limitation underlying the Dooley method is related to weaknesses in external debt data as reported by some heavily indebted poor countries, particularly those with protracted civil conflicts or those that have emerged from a period of conflict. These countries have extremely weak external debt recording systems in place that are reflected in incomplete and outdated debt

statistics. These data deficiencies translate into an inadequate adjustment for unreported capital flows. Typically, however, balance of payments compilers have found the stock of external debt reported to the World Bank to be considerably larger than external borrowing flows reported in many countries' balance of payments. Dooley assumes that the shortfall must correspond to an understatement in balancing BOP transactions, rather than an overstatement of the World Bank figures, and that these shortfalls constitute private sector acquisitions of foreign assets.

18. There is also a statistical problem in combining external debt stock data with flow data in the balance of payments. The dollar value of debt stock is affected by exchange rate changes, the combined effects of shifts in the currency composition of the debt stock, and by valuation changes arising out of floating exchange rates. In addition to these statistical problems there is the dilemma of trying to capture debt restructuring exercises, which typically affect debt stocks without the balance of payments showing corresponding flows.

19. The balance of payments data on external borrowing reported by many poor developing countries may also be lacking in terms of coverage and timeliness. Moreover, the World Bank's data on short-term external debt are not disaggregated between public and private flows. Gaps in data on private sector nonguaranteed debts are particularly significant for countries in Africa, the Middle East and the Western Hemisphere.

E. World Bank Residual Method

20. The World Bank Residual model has been widely used by researchers to measure unrecorded or illicit financial flows. This composite and rather broad measure has an interesting appeal—source of funds exceeding recorded use of funds reflect unrecorded outflows. Source of funds includes (i) increases in net external indebtedness of the public sector and, (ii) the net flow of foreign direct investment. This paper utilizes two alternative measures of net external indebtedness of the public sector—one based on changes in the stock of external debt (CED) and the other on the net debt flows (NDF). Use of funds includes financing the current account deficit and additions to reserves. In this broad macroeconomic framework, illicit outflows exist when the source of funds exceeds the uses of funds, and vice-versa for illicit financial inflows[2]. Thus:

← Source of Funds →	Minus	← Use of Funds →
K = [Δ External Debt + FDI (net)]	**–**	**[CA Deficit + Δ Reserves]**

F. Limitations of the World Bank Residual Method

21. The World Bank Residual approach to measuring illicit flows is intuitively appealing as it considers the totality of financial flows. Moreover, it avoids excessive reliance on balance of payments data. For instance, other sources, such as the Bank's Debtor Reporting System (DRS) for data on developing countries' external indebtedness, are used to obtain a better estimate of private capital flows. That said the World Bank Residual approach is also subject to all the data limitations discussed above with

[2] Other researchers of illicit financial flows such as Raymond Baker also hold the view that because such inflows into a country are not realistic without significant government reform, they are more likely to reflect data issues.

regard to external debt, the recording of net foreign direct investments in the balance of payments, and the recording of current account transactions, mainly with regard to goods and services. For instance, the Bank's DRS has more comprehensive data on the stock of external debt than those on the net flows of new debt. In any case, the most reliable part of the equation above would be the change in reserves, which is a figure typically compiled by the central bank and closely monitored in most countries, developed or developing.

22. Note that the World Bank Residual model considers the totality of financial flows rather than value flows. For instance, if a country exports a good invoiced below the world market or true price, that transaction will reflect a financial, not a value, flow. The value flow will correspond to the difference between the actual and the true value. Illicit financial flows in terms of value will be streaming out of that country even if monetary funds are not. Hence, the World Bank Residual estimates must be added to Trade Mispricing estimates in order to better capture such outflows of capital.

23. There is a close variant of the World Bank Residual method that was developed by Morgan Guaranty Bank (1986). In addition to the current account deficit and the increase in official reserves, the Morgan Guaranty method also subtracts the increase in short-term assets of the banking system from total capital inflows (or source of funds). Thus, in estimating illicit flows, this approach excludes the acquisition of foreign assets by banks focusing only on such acquisitions by the non-bank private sector. The Morgan Guaranty approach thus yields estimates of illicit flows that are in most cases very close to the World Bank Residual model. The exception is in cases where the acquisition of foreign assets by the banking system is very large. However, the Morgan Guaranty approach also has its drawbacks. For example, if corruption is rampant and nationalized public banks are used by corrupt officials to funnel money abroad, then the model would understate illicit outflows.

G. DOTS-based Trade Mispricing Model

24. Trade misinvoicing has been long recognized as a major conduit for illicit flows of a commercial nature. The underlying rationale is that residents can acquire foreign assets (and illegally transfer capital) by over-invoicing imports and under-invoicing exports. Typically researchers using the trade misinvoicing model have compared partner-country trade data after adjusting for the cost of insurance and freight (or c.i.f. factor). For instance, a developing country's exports to the world (valued free-on-board, or exports f.o.b. in U.S. dollars) are compared to what the world reports as having imported from that country, after adjusting for the c.i.f. Similarly, a country's imports from the world (after adjusting for c.i.f. factors) are compared to what the world reports as having exported to that country.

25. The world exports to, and imports from, a particular country are derived based on partner-country trade data reported to the IMF by its member countries for publication in the *Direction of Trade Statistics (DOTS)*. The DOTS is a unique database on global trade flows which allows researchers to estimate an important component of illicit flows (**K)** that occurs through the misinvoicing of international trade. It is derived as follows:

$$K = [X_i] - M_j/\beta + [M_i/\beta] - X_j$$

This equation seeks to capture mispricing on both the export (**X**) and import (**M**) side, assuming that illicit financial flows take place through both exports and imports. Specifically, the exports of goods f.o.b. (**X**) from country (i) to country (j) is compared to the imports (**M**) reported by the latter after adjusting for the c.i.f. factor **β.** On the import side, imports (**M**) of country (i) from country (j) are converted to f.o.b. value and

then compared to what the country (j) reports as having exported to country (i). Illicit outflows from country (i) will be indicated if the exports of country (i) are understated relative to the reporting of partner country's (j's) imports and/or if country i's imports are overstated with respect to partner country j's exports to country i, after adjusting for the c.i.f. factor, **β.** It may well turn out that such a comparison based on bilateral trade data yields export overstatement and/or import understatement (i.e., the discrepancies have the wrong signs). Researchers have tended to net out such wrong signs from the gross figures in that they reduced gross illicit outflows by the amount of illicit capital inflows. This paper presents both gross excluding reversals (GER) and the net estimate, pointing out the limitations of each (see Section H below).

H. Limitations of the DOTS-based Trade Mispricing Model

26. It should be noted that a few researchers, such as Cerra, Rishi, and Saxena (2005) have excluded trade mispricing in deriving estimates of overall illicit flows on the rationale that trade mispricing behaves quite differently from other components of such outflows. For instance, these authors argue that misinvoicing often takes place in response to high trade taxes and thus may be unrelated to illicit flows captured by other models. In addition, Chang and Cumby (1991), note that regular underreporting of trade statistics can occur in both directions in order to evade trade barriers which can "overwhelm any discernible capital flight through misinvoicing." In fact, we find this to be the case for Russia where trade mispricing has the wrong sign indicating an inflow of illicit capital that is large enough to swamp outward illicit flows indicated by either the Hot Money Narrow method or the World Bank Residual method. We take the view that while the trade mispricing model may well indicate an inflow of illicit capital for some developing countries, we should not exclude the entire approach as invalid for the vast majority of developing countries.

27. It is therefore not surprising that other researchers have advanced equally cogent arguments for including trade mispricing on the grounds that international trade often provides an excellent conduit for illicit financial flows. In view of these considerations, the exclusion of trade mispricing will seriously understate the outflows of illicit capital. Apart from academic papers on trade mispricing, a number of recent studies sponsored by international organizations have explicitly included fake invoicing as a factor driving illicit flows. For instance, a recent study by the United Nations Conference on Trade and Development (UNCTAD) has explicitly included trade mispricing as a conduit for illicit flows. In fact, at a senior policy seminar on implications of capital flight for macroeconomic management and growth in Sub-Saharan Africa (SSA) held at the South African Reserve Bank (October 30, 2007), Prof. Ndung'u, Governor of the Central Bank of Kenya, quoted the UNCTAD study (which includes trade mispricing) in his keynote address. The study suggests that "capital flight from SSA is fast approaching half a trillion dollars, more than twice the size of its aggregate external liabilities." The study by Ndikumana and Boyce (2008) adjusts capital flight estimated by the World Bank Residual Method for trade mispricing. They look upon the deliberate falsification of trade documents as an illegal practice and therefore think that any financial benefit derived as a result ought to be regarded as illicit capital outflows. Other country case studies on capital flight, such as Frank Gunter's (2003) on China or Prakash Loungani and Paolo Mauro's (IMF, April 2000) on Russia, explicitly include trade mispricing as a conduit for such capital outflows. Schneider (2003) finds it "startling to see the increase in capital lost through this channel in East Asia since the mid-1980s."

28. This paper takes the approach that while financial flows through trade mispricing should be included at the aggregate level, estimates based on trade mispricing should be excluded from individual country estimates if there are reasons to believe that there are serious partner country trade data issues. For instance, according to the *DOTS Yearbook Country Notes*, there are serious

problems of recording the origin of external trade data for Hong Kong because of intra Hong Kong-China trade. Partner countries may often record exports originating in Hong Kong as coming from China and vice-versa, a problem made more acute due to the island's re-export trade. Hence, the external trade of Hong Kong and Macao were excluded from Asian and world trade; see Table 1.[3] If these bilateral trade flows were to be included, the trade mispricing model would seriously distort the estimates of illicit flows for all countries (as the volume of Hong Kong's external trade is sufficiently large to impact the trade flows of developing countries taken as a whole).

29. Apart from hesitancy to include trade mispricing in certain situations, a further shortcoming in the comparison of partner-country trade statistics is that not all misinvoiced trade results in a difference between export and import values. Where the misinvoicing occurs within the same invoice as a matter of agreement between buyer and seller, no difference between export and import values occurs. This is the case in much of abusive transfer pricing by multinational corporations, who vary invoices as needed to shift profits and capital across borders. In fact, transactions that are completely faked without any underlying reality have become common and are especially difficult to estimate. Asset swaps, yet another conduit for illicit flows, which are also difficult to estimate with confidence, have become common with Russian entrepreneurs, Latin American businesspeople, and Chinese state-owned enterprises. In fact, such swaps are increasingly used to shift assets out of developing countries and into Western economies.

30. As noted, in the case of some countries such as Russia, there may be a complicated relationship between trade misinvoicing and illicit flows because mispricing may be driven by other motives to circumvent trade restrictions or to take advantage of government subsidies. For instance, if there are trade restrictions such as high import duties, imports may be under-invoiced to lower the burden of customs duties. A further complication may arise if we were to consider the rate of income taxation in relation to customs duties. If income taxes are higher than duties, an importer may still come out ahead by paying high customs duties (by over-invoicing imports) so long as the "loss" in income or profit results in lower income taxes which more than offsets the higher customs duties.

31. The relationship between trade mispricing and illicit flows can become very complicated if there are vibrant black markets in foreign exchange operating in a country. For instance, if black market exchange rates are attractive, an importer may over-invoice imports not only to reduce taxable income but to profit from exchanging the (over) allocated foreign exchange in the black market. These ill-gotten profits can then be transferred abroad through one or more of the conduits of flight capital with which the importer is familiar. On the export side, illicit capital outflows may occur when the black market premium is higher than the export subsidy per unit exported. It will then be attractive to raise the necessary foreign exchange on the black market. In such cases, illicit flows may show up only in the first round of misinvoicing but not when illegal proceeds from the black markets are sent abroad say through the "hawala" system (which cannot be recorded as capital outflows in the balance of payments).

32. There are a number of instances when the trade mispricing channel will not reflect illicit flows. For instance, both legitimate merchants and smugglers in many countries that share a long and porous border could resort to pricing and/or exchange arbitrage opportunities in goods and services to make a handsome profit even after taking account of the risks and costs involved in carrying them out. The

[3] The exclusion of Hong Kong, Korea, Macao, and Singapore from the developing world is an important departure from the *IFS* classification system.

profits derived from these transactions of course have to be hidden from the authorities (as they were derived from illegal activities) and therefore typically end up as flight capital. The nature of these illegal cross-border trade transactions is such that no customs documents can ever capture their direction and value. Yet, it is well-known that the profits from such illegal trading activities inevitably end up as illicit flows because the growth of undeclared income would attract the attention of regulatory authorities.

33. Apart from the fact that customs documents typically do not capture trade transactions that are concluded by word-of-mouth or use channels such as hawala or asset swaps that completely circumvent the official recording system, there are statistical issues that detract from the accuracy of reported partner-country trade data. Differences exist in recording systems and in the proper identification of the origin and destination of goods, particularly in an increasingly globalized world where component parts to a final product could originate from a number of countries easily complicating the identification and hence recording of accurate "country of origin" for the goods in question. Moreover, floating exchange rates can introduce exchange conversion-related discrepancies (because such conversion procedures are not uniform across all countries), given the long transit times involved in the exports and imports of certain heavy machinery or bulk container goods across the globe. It would be nearly impossible to distinguish discrepancies due to statistical issues in recording from those that arise as a result of deliberate misinvoicing to siphon money out of the country.

34. Finally, there is an important issue related to the interpretation of signs in dealing with discrepancies in partner country based trade data. As noted earlier, we are presented with two choices—the Net method and the gross excluding reversals (GER) method. In the Net method, gross capital outflows are reduced by gross capital inflows to derive a "net" position and only net positions with the right sign are taken to represent illicit outflows. Hence, export under-invoicing and/or import over-invoicing representing illicit outflows of capital in a given year are correspondingly reduced by import under-invoicing and/or export over-invoicing to come up with a net position for the five year period. In other words, a gross capital outflow on the export (or import) side is offset by a gross capital inflow on the import (or export) side to come up with a net position on flight capital.

35. In contrast, under the GER method, only periods with export under-invoicing and import over-invoicing are considered to be illicit outflows while periods of inward capital flight (i.e., export over-invoicing and import under-invoicing) are considered to be spurious due to data issues. According to the GER method, it makes little sense to say there are large illicit outflows through export under-invoicing but an inward transfer of illicit capital through import over-invoicing. This kind of ambivalence in resorting to illicit flows is not realistic in countries with a history of poor governance and lack of prudent macroeconomic policies. Similarly, gross outflows indicated by, say, export under-invoicing are not offset by import understatement indicating a return of illicit capital. Again the rationale is that the factors that drive illicit flows often have an entrenched nature and that the return of illicit capital is unlikely absent genuine economic reform and improvements in governance. As structural characteristics that drive illicit financial flows are unlikely to swing back and forth, particularly during a relatively short five-year period, the GER method limits illicit inflows to clear cases where flight capital returns following genuine and lasting economic reform.

36. The other rationale for favoring the GER method is that it is hard to imagine traders using the mispricing mechanism to bring money into the country, although drug dealers might resort to such transfers. Drug dealers with their perpetual need for cash would more likely bring money back into a country even at a considerable cost as they are not interested in making a profit, only in laundering their

money without regard to the cost. Legitimate traders would not secretly shift money back into a country if they are interested in hiding their wealth or sheltering such wealth from taxes.

I. IPPS-based Trade Mispricing Method

37. John Zdanowicz of Florida International University developed an international price profiling system (IPPS) based on individual export and import transactions of the United States with the rest of the world. As such, 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 following description of the methodology underlying the IPPS is taken directly from the web-site of International Trade Alert, the company that manages the system.

> **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. Money is moved across borders through false invoicing of import or export transactions. 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 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" reflects the potential of money being moved out of the United States to a foreign country while a positive "Risk Index" reflects the potential of money being moved into the United States from a foreign country. The magnitude of the "Risk Index" reflects the probability or likelihood that a price is over-valued or undervalued.

38. 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 thorny 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.

J. Limitations of the IPPS-based Trade Mispricing Method

39. An important limitation of the IPPS system is that traders are typically not as careful in declaring quantities or volumes as they are in declaring values (which drive customs duty assessments). Compilers of trade and balance of payments statistics typically find such laxity to be more prevalent on export rather than import declarations which attracts the lion's share of applicable customs duties. Laxity and negligence in making sure that the volumes are consistent with the values declared often lead to distortions in the implied unit value (price). However, while such data problems are more prevalent in developing countries, the problem can be expected to be less pervasive in the case of the United States. However, it is unclear how much attention the U.S. Customs pays to (mostly import) volumes when duties are not volume-based. Errors in volumes or inconsistencies between volumes and values will introduce anomalies between transaction and world norm prices that would not necessarily reflect illicit flows.

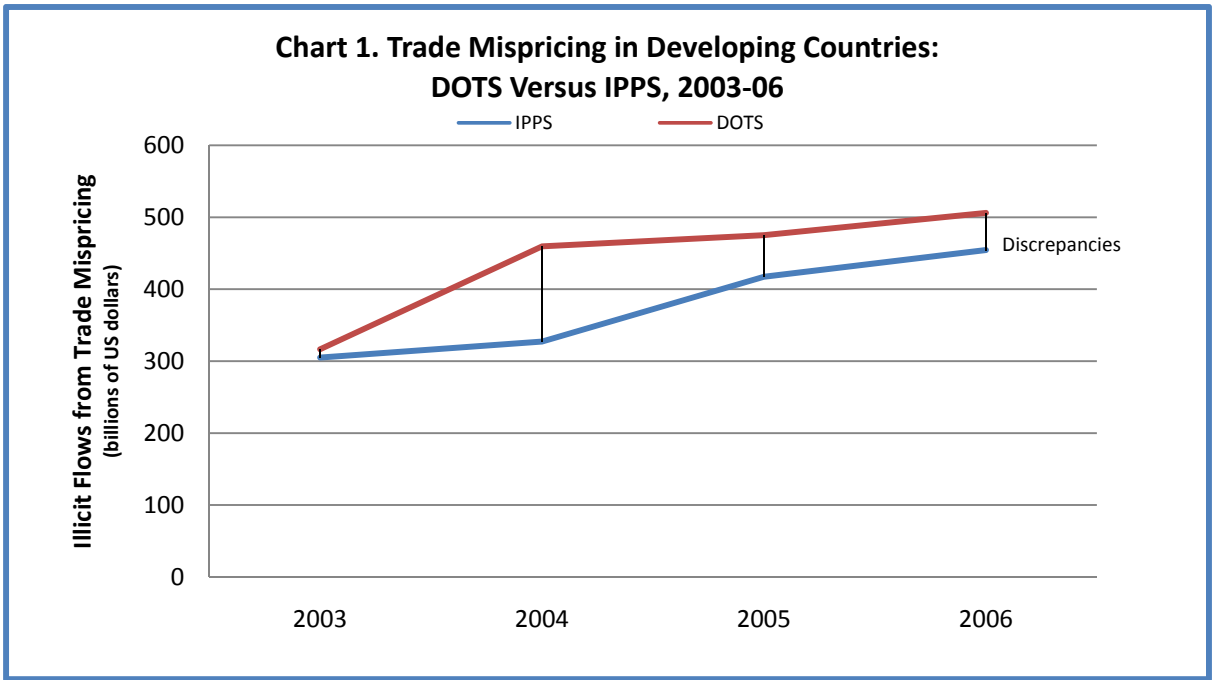
40. It may be difficult to compute a world "norm" price for certain goods, particularly if variations within samples are large. A convergence in free-market prices only comes about as a result of open competition among suppliers, whereas monopolistic pricing may discriminate among buyers and may not converge. Moreover, it is not clear how the system computes prices net of transportation costs which can vary significantly depending upon the location of markets. Also, the IPPS system may not be able to accurately capture norm prices when international prices are undergoing rapid shifts due to global inflationary conditions, due to sharp swings in exchange rates, or due to a faster divergence between the domestic prices of an importing or exporting partner and world norm prices. For instance, recently the prices of crude oil and gold in world markets have been fluctuating sharply (often significantly even during the course of a day). Under such a scenario, the norm itself is not stable and it is difficult to see what would be a true benchmark price for such commodities. Nevertheless, if one were to abstract from these data issues, the IPPS system is a potent method for calculating trade mispricing.

41. The most obvious limitation of the IPPS model is that trade mispricing estimates are derived based on world trade with the United States. 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. This is because governance, recording, enforcement, and control procedures are much stronger in the United States than in most developing countries so that traders are much more careful in mispricing trade with respect to the United States than with the rest of the developing world. A comparison of the results from the DOTS and IPPS trade mispricing models was carried out to see if this hypothesis is true.

K. Comparison of the IPPS and DOTS Estimates of Trade Mispricing

42. It is interesting to compare the estimates of illicit flows through trade mispricing as obtained by the IPPS and the DOTS-based models (Chart 1). Note that the comparison could only be carried out for the four-year period of overlap (2003-2006) in IPPS and DOTS trade mispricing estimates. The IPPS estimates of trade mispricing used here is based on the 25th and 75th percentiles, meaning any trade transaction that is below the 25th percentile or above the 75th percentile, with respect to the international trade price for that commodity is flagged as mispriced. In Table 4 (Statistical Appendix), columns A and B show the exports under-invoicing and import over-invoicing resorted to by exporters and

importers in the various regions of the developing world in their trade with the United States (obtained from the IPPS system). The global regional exports to and imports from the United States (columns C and D) as well as those regions' exports to and imports from the world (columns E and F) are then used to calculate the Export and Import factors (columns G and H). In other words, the Export factor (column G) is obtained as a ratio of E over C while the Import factor (column H) is derived as a ratio of F over D. The IPPS export under-invoicing for the United States is then multiplied by the Export factor to arrive at an IPPS-based world-wide export under-invoicing estimate (assuming that IPPS-based export under-invoicing vis-a-vis the United States can be factored up using the world-to-U.S. Export factor). A similar factoring up of IPPS-based import over-invoicing was also carried out using the world-to-U.S. Import factor. The IPPS-based trade mispricing (column O) are then compared with those based on the DOTS (columns P) to arrive at discrepancies in total trade misinvoicing between the two systems represented by the gap between the two lines in Chart 1.



43. The assumption made in deriving IPPS-based trade mispricing estimates for the various regions and the world is that the mispricing involved in each region's exports to and imports from the United States serves as a benchmark for mispricing of these regions' trade with the rest of the world. The following observations can be made in comparing the trade mispricing estimates using the IPPS and DOTS-based systems:

- Trade mispricing at the global level is consistently higher under the DOTS system than those obtained using the IPPS (the DOTS line is always above the IPPS line in Chart 1). In deriving the IPPS regional and world mispricing estimates, we assumed that exporters and importers have the same propensity to misprice trade with the world as they do in trade with the United States. Table 4 shows that this assumption may have underestimated trade mispricing estimates obtained using the IPPS method.

- Underestimation of regional and global trade mispricing using U.S. benchmarks probably arises from the fact that traders see the U.S. customs data collection effort to be more transparent and more difficult to circumvent than those prevailing in the developing world. Hence, if we apply the trade mispricing factors derived from U.S. trade with the world, this will understate the trade mispricing actually taking place in developing countries' trade with the rest of the world. The table confirms underestimation of IPPS-based trade mispricing relative to the partner-country based trade data underlying the DOTS system (column Q). For the four year period 2003 to 2006 (for which we have overlapping DOTS and IPPS data) the understatement is estimated to be in the range US$12—US$58 billion, except in 2004 when it increased to US$132 billion.

- The IPPS estimates for trade mispricing for Asia are lower than corresponding DOTS estimates by an average of US$157 billion dollars for the period 2003 to 2006, whereas for trade involving Europe the IPPS system shows trade mispricing is higher on average by US$78 billion compared to the DOTS model. A possible explanation may be that Asian trade mispricing estimates are understated when based on IPPS estimates for the United States (as the actual propensity to misprice trade by Asian traders vis-à-vis the world is much higher than their mispricing in trade with the United States). DOTS-based trade mispricing by European traders appears to be quite low on average and mainly reflects problems with Russian trade data. As the discrepancies between the IPPS and the DOTS systems are small for the other regions (relative to total regional trade), there are strong indications that the more significant discrepancies in trade mispricing between the two systems seem to be due to the higher volume of total illicit financial flows from China and Russia which are not reflected in their trade statistics.

- As earlier noted, the DOTS database has a number of data deficiencies, particularly with regard to some countries in Africa and the Middle East. Given the much smaller size of discrepancies in trade mispricing estimates for these regions, there is a case for using the IPPS-based estimates of trade mispricing for countries that do not report DOTS data to the IMF or those that have pervasive data deficiencies.

- While the IPPS-based "patching" exercise will be useful in limiting the underestimation of total illicit flows from developing countries due to the non-availability or lack of reliability of partner country data in the DOTS system, it is outside the scope of this paper. The IPPS-based "patching" exercise to be applied at a later date will limit the underestimation of such flows due to data deficiencies.

L. Selection of Models

44. A review of the methods used to estimate illicit flows shows that data limitations could sometimes understate the volume of such transfers from developing countries. However, in spite of some of the data limitations many researchers have studied the problem of illicit financial flows and derived various estimates and ranges (low and high values) of such outflows. Of the three non-trade models of illicit financial flows (i.e., the Hot Money Narrow, Dooley, and World Bank Residual), data and other technical issues clearly favor the World Bank Residual model. While the Hot Money Narrow method significantly understates estimates of illicit flows, deriving reliable estimates of the Dooley model becomes extremely difficult because the required maturity breakdowns of capital flows are no longer available under *BPM5.* Therefore the Dooley model is not further analyzed in this paper. Technical issues aside, the resource gap analysis underlying the World Bank Residual method involving the source of funds and use of funds is not

only intuitively appealing, it is able to cast a wider net to capture unrecorded capital outflows than does either of the other two models.

45. Turning to the Trade Mispricing model, the question is which version—the gross excluding reversals (GER) or the Net method provides reliable unbiased estimates of the volume of illicit financial flows from the various regions of the developing world. Recall that under the Net method, inward illicit flows (trade mispricing estimates with negative signs representing capital inflows) either through export over-invoicing or import under-invoicing are netted out from gross flows for each year. If the net position is negative, the resulting illicit inflow is set at zero rather than taken out of gross flows out of other regions of the developing world. Using this methodology, the Net method shows (Table 16 or summary in Table 5) that there are substantial illicit inflows into Europe and the MENA regions. A possible reason is that global trade flows in the MENA and European regions are dominated by oil (the oil exporting countries in the Middle East and Russia in Europe). While typical trade mispricing reflected in the partner country trade data reported in the DOTS system is much more difficult to carry out for trade in oil (due to well-known international prices for crude oil and its derivatives), netting out the illicit inflows from legitimate capital flight from other regions would inevitably distort the whole picture. For this reason, inward illicit flows is set to zero for MENA and Europe under the Net method—an outcome that is clearly unrealistic. **We therefore regard the GER model as the more realistic representation of illicit financial flows from developing countries.**

46. The World Bank Residual Model can be estimated using either the change in external debt (CED) or net flow of new debt (NDF) as a source of financial resources for a country. However, while net debt flows capture the flow of financial resources to a country more accurately than the change in debt stocks (because exchange rate valuation changes impact smaller debt flows much less than larger debt stocks), net debt flows also show more gaps in data and tend to be less current than change in debt stocks. Also note that according to the normalized World Bank Residual (NDF) model, illicit flows from Africa declined by over 50 percent in 2006 compared to the previous year while such outflows from the Western Hemisphere declined by more than 30 percent over the same period—seemingly positive developments that are highly dubious given no significant shifts in the fundamental factors driving these outflows. A closer look reveals that illicit flows from these regions declined in 2006 because NDF data were not available for a number of developing countries. In light of biases introduced due to data deficiencies related to net debt flows, the World Bank Residual (CED) method is used to analyze the regional pattern of illicit flows. **Given model characteristics and data limitations, we select the CED-GER combination of models to study the pattern of illicit flows from developing countries and regions.**

III. TWO-STAGE FILTRATION PROCESS

47. The above discussion of models used in this paper to estimate illicit flows has shown that some of them can seriously understate these types of capital transfers. For instance, we have seen why the Hot Money plus Net Trade Mispricing can yield estimates at the lower end of the range of possible illicit capital outflows. However, in arriving at a robust estimate of illicit flows, we must exercise care that such outflows are not overestimated either. For example, model estimates for individual countries ought to be adjusted or filtered to exclude countries with the wrong sign in most years of the 5-year period. Under such an adjustment method, if model estimates indicate outflows of illicit capital from a country in just two out of the five years (2002-2006), that country is rejected as one indicating such outflows. Similarly model estimates below a certain threshold level with respect to exports f.o.b. are most likely not illicit flows but merely reflect data problems. This process of reducing the risk of including spurious cases of illicit flows is known as normalization. Thus, non-normalized and normalized estimates of illicit flows would represent the upper and lower bounds respectively of the possible range of such outflows from developing countries generated by a combination of models presented in this paper.

48. The schematic diagram (Charts 2a and 2b) depicts a two stage filtration process which seeks to reduce the risk of including countries that do not really exhibit illicit flows. Thereby the two-stage filtration process yields a conservative or low end of the range of such financial flows from developing countries. The low end of the possible range of outflows must be considered against the fact that even the best models rely on official statistics which do not capture illicit transfers of capital occurring through smuggling, same-invoice faking, and hawala-style swap transactions to name a few. Under the circumstances, normalization of illicit financial flow estimates through a restrictive two-stage filtration process may further compound the downward bias in estimates inherent in the use of stylized models presented here. Nevertheless, the paper includes the low (normalized) range of illicit flow estimates for purposes of comparison although the truth may lie much closer to the upper (non-normalized) end of the range.

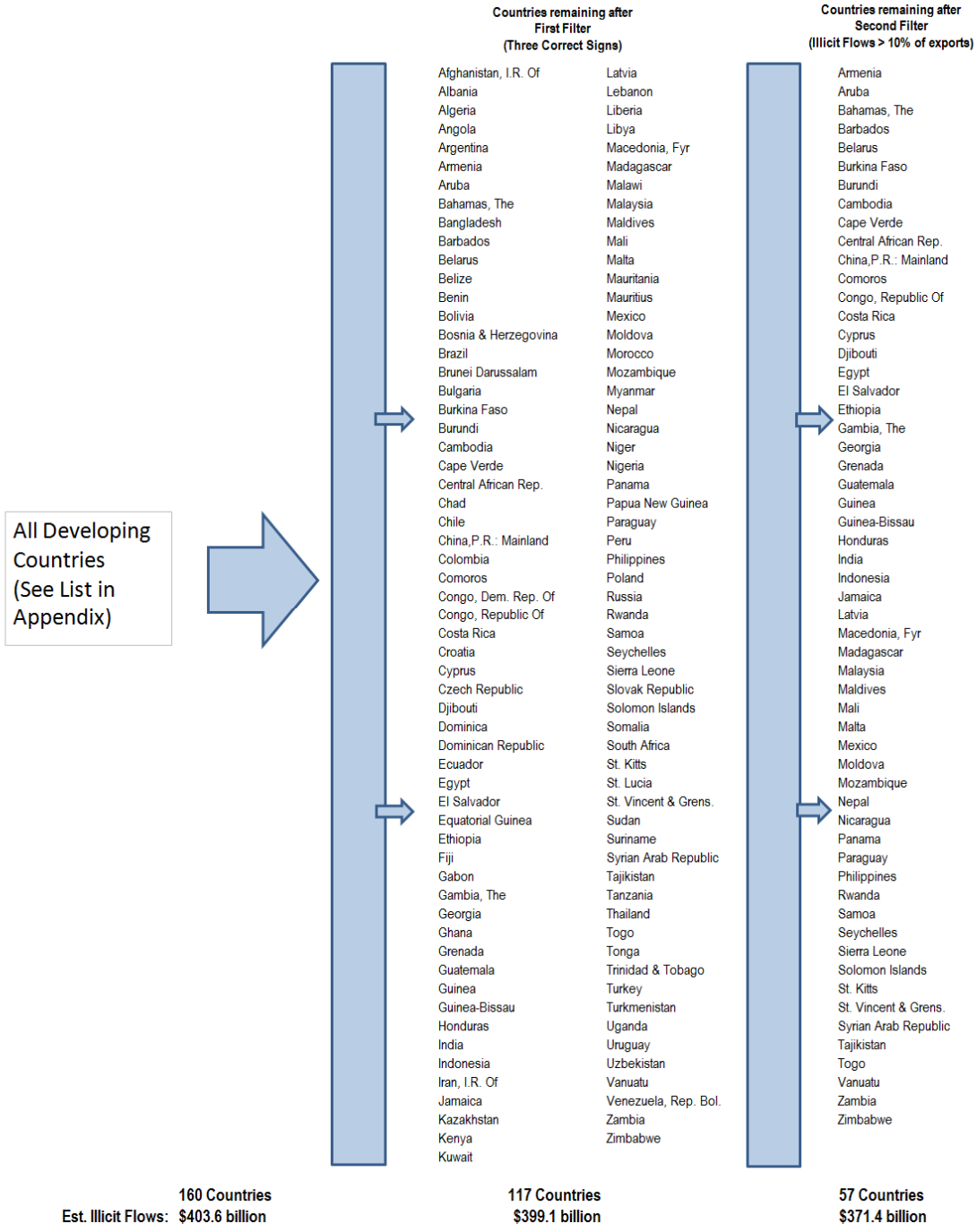
49. The filtration process subjects the entire list of developing countries (for which data are available) to pass through two filters: (i) such outflows must have the right sign in at least three out of the five years and, in addition, (ii) exceed the threshold (10 percent) with respect to exports f.o.b. At the first stage, only estimates with the correct sign (under all three methods of estimating illicit flows—the Hot Money method, the World Bank Residual Method, and the Trade Mispricing method) for at least three out of five years are taken as genuine cases of illicit flows. In contrast, the non-normalized method of deriving average and cumulative illicit flows for a country over the five-year period would include all cases where estimates had the right sign even for one year. The normalization procedure would argue that a right sign for only one or two years out of five (and indicating reverse or illicit inflows in other years) does not indicate flight capital but anomalies in data.

50. Charts 2a and 2b depict the two-stage filtration process on non-normalized estimates of illicit flows obtained by applying the GER and CED models respectively. The first chart shows that 160 developing countries accounting for a GER-based average illicit flow estimate of US$403.6 billion per year (for the period 2002 to 2006; see Table 5 of the Statistical Appendix) were passed through the first filter requiring at least 3 years of illicit outflows out of the five-year period under study. In the process, 43

countries were eliminated, leaving 117, and overall illicit outflows dropped to an average of US$399.1 billion per year (Table 6). This group of 117 countries was then passed through the second filter, which required illicit outflows to equal or exceed at least 10 percent of exports f.o.b. Through the second filtration process, another 60 countries were eliminated, leaving only 57 countries that made it through both filters. Illicit flow estimates of these 57 countries indicate that an average of US$371.4 billion per year was shifted out of developing countries through trade mispricing during 2002-06. Estimates presented in Table 6 show that if a 5 percent of exports f.o.b. filter was used in the second stage (instead of 10 percent of exports f.o.b.), average illicit flows through trade mispricing would have amounted to US$382.2 billion as more countries would pass the second filter at the lower threshold. Note that although the number of countries fell precipitously as they passed through the filters, the overall volume of illicit financial flows fell at a much lower rate, particularly at the second stage. This is because the top 20 countries that account for the major share of illicit flows were caught by our "net", while the smaller illicit exporters of capital fell through.

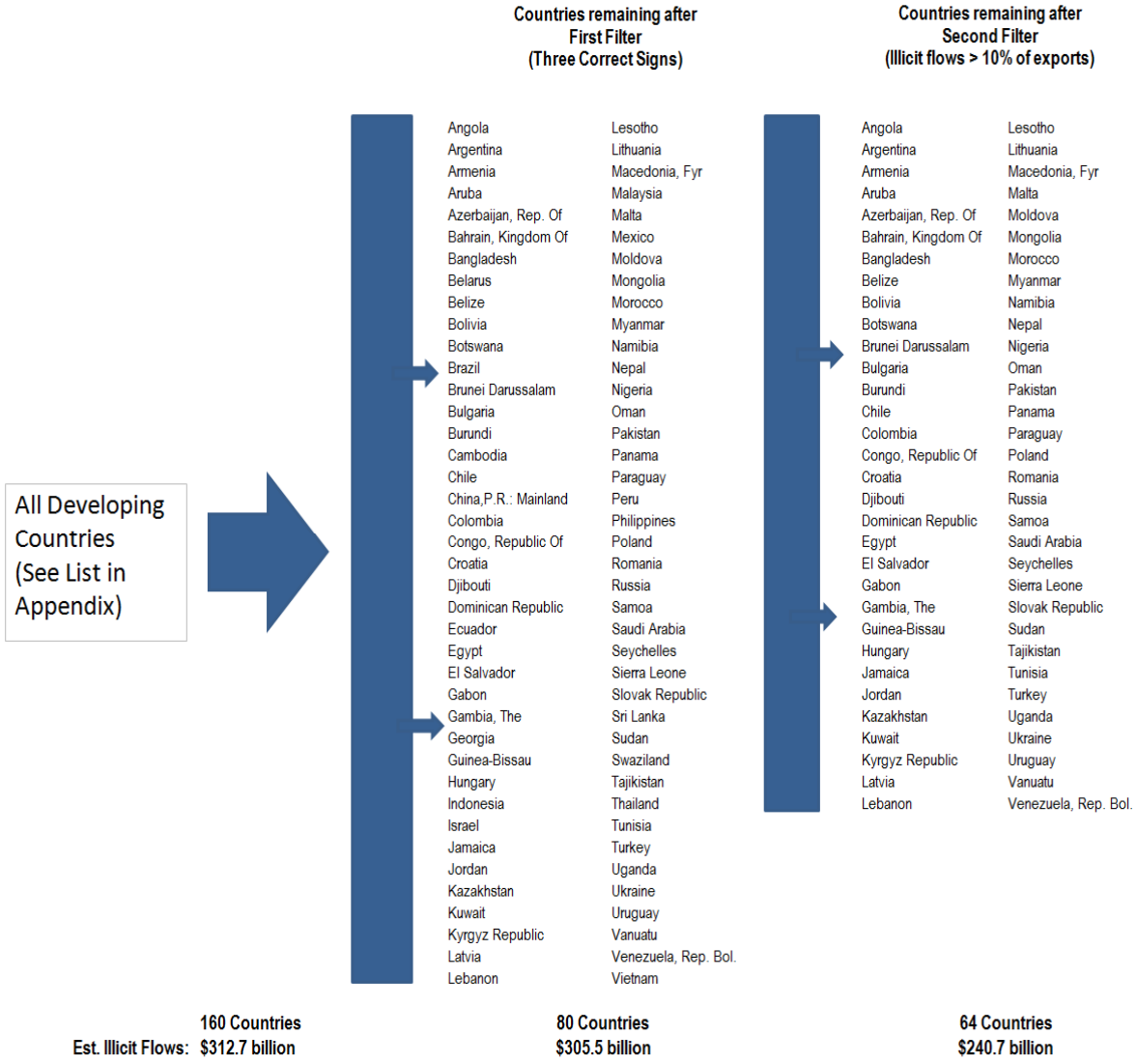
51. Chart 2b depicts a similar two-stage filtration process on average CED estimates of illicit financial flows. As before, 160 developing countries accounting for a CED-based average illicit flow estimate of US$312.7 billion per year for the same five-year period (Table 5) were passed through the first filter (requiring at least 3 years of illicit outflows out of the 2002-2006 five-year period). In the process, 80 countries were eliminated, leaving another 80 with total illicit outflow amassing US$305.5 billion. The remaining 80 countries were then passed through the second filter, leaving 64 countries that made it through both filters. Illicit outflows from these 64 countries averaged US$240.7 billion per year during the five year period. Hence, normalized estimates provided by the GER-CED models indicate that on an average US$612.1 billion per year (US$371.4 plus US$240.7 billion) were shifted out of developing countries between 2002 and 2006 (Table 6). It is interesting to note that the number of countries did not drop as sharply (from 160 to 64 countries) during the filtration process of this model, because for some countries, CED estimates are not only larger but also relatively stable with regard to sign compared to the trade mispricing estimates.

Chart 2a. The Two-Stage Filtration Process for GER at 10 percent of Exports f.o.b.: A Schematic Diagram (Average 2002-2006)



52. Note that the setting of an adequate threshold level to act as a filter inevitably involves making a subjective judgment. However, while there is really no objective criterion for fixing the threshold at a certain level of exports, the two-stage filtration process works by eliminating data-related spurious cases. We chose the tighter 10 percent threshold (rather than the lower 5 percent) in order to arrive at a more conservative figure of overall illicit financial flows from developing countries.

Chart 2b. The Two-Stage Filtration Process for CED at 10 percent of Exports f.o.b.: A Schematic Diagram (Average 2002-2006)



53. Table 20 (see Statistical Appendix, p.41) lists the 28 countries that were eliminated by the normalization procedure in both the CED and GER models. That is, of the 103 counties eliminated from the GER and the 96 eliminated from the CED, there were 28 countries that were eliminated by both and we do not include estimates of illicit flows from these countries based on either model. These 28 countries account for an average illicit financial outflow of US$44.6 billion per year from 2002 to 2006. Of this list, six countries–Brazil, the Czech Republic, Israel, Libya, South Africa, and Thailand–together accounted for nearly 79 percent of illicit outflows that were normalized out. At least three other countries–Haiti, Sri Lanka, and Yemen–would likely have passed through the filters if the CED-GER models could capture the myriad ways illicit capital were likely transferred out of these countries due to their long-standing economic and political instability. Clearly, by imposing further restrictions on model estimates that may already be low, the normalization process yields a very conservative estimate of illicit financial outflows from the developing world.

IV. THE VOLUME OF ILLICIT FINANCIAL FLOWS FROM DEVELOPING COUNTRIES

54. **Charts 3, 4, and 5 show that while normalized and non-normalized illicit financial flows vary** somewhat, these flows have been increasing significantly over the most recent five-year period (2002–2006) for which data are available. Regardless of the process of estimation, illicit financial flows in the last year (2006) were more than double the volume of illicit flows at the beginning of the study (2002).

55. **Given such significant changes in the world economy as the collapse of the Soviet Union, new states in Europe, and the rise of China, India and other emerging economies, the estimates obtained in this study can only logically be compared to the range obtained recently by Baker.** The structural changes in the world economy do not permit a comparison of estimates obtained in this study with more outdated research. Based on the survey method, Baker estimated that illicit financial flows from developing countries ranged from US$539 to US$778 billion in 2005 (referred to in this paper as the "Baker Range").

Chart 3: Volume of Illicit Financial Flows From All Developing Countries 2002 - 2006 ($billions)

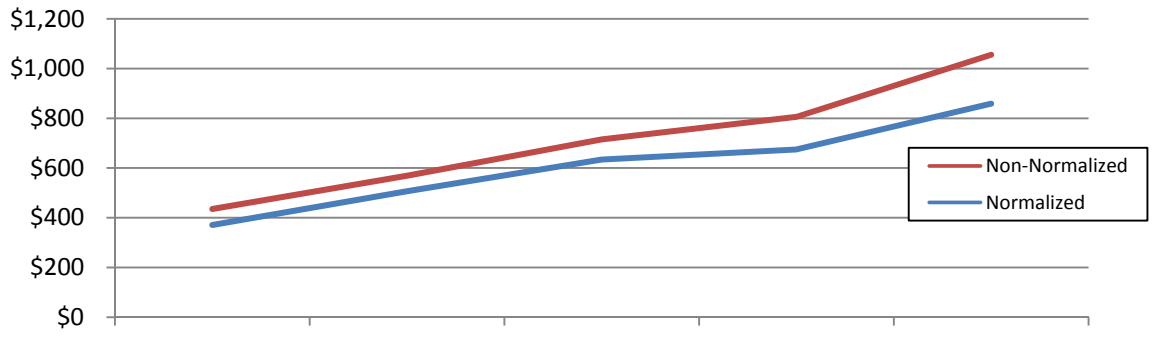
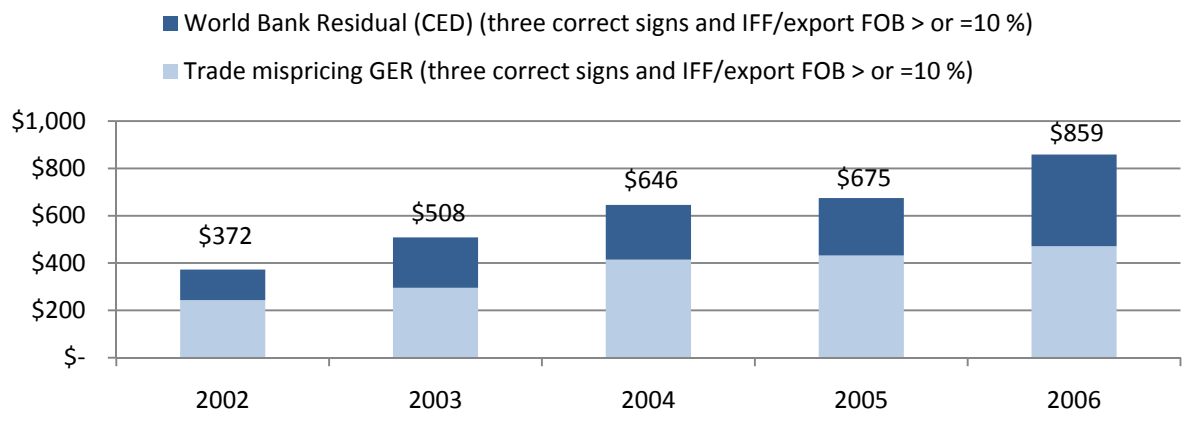
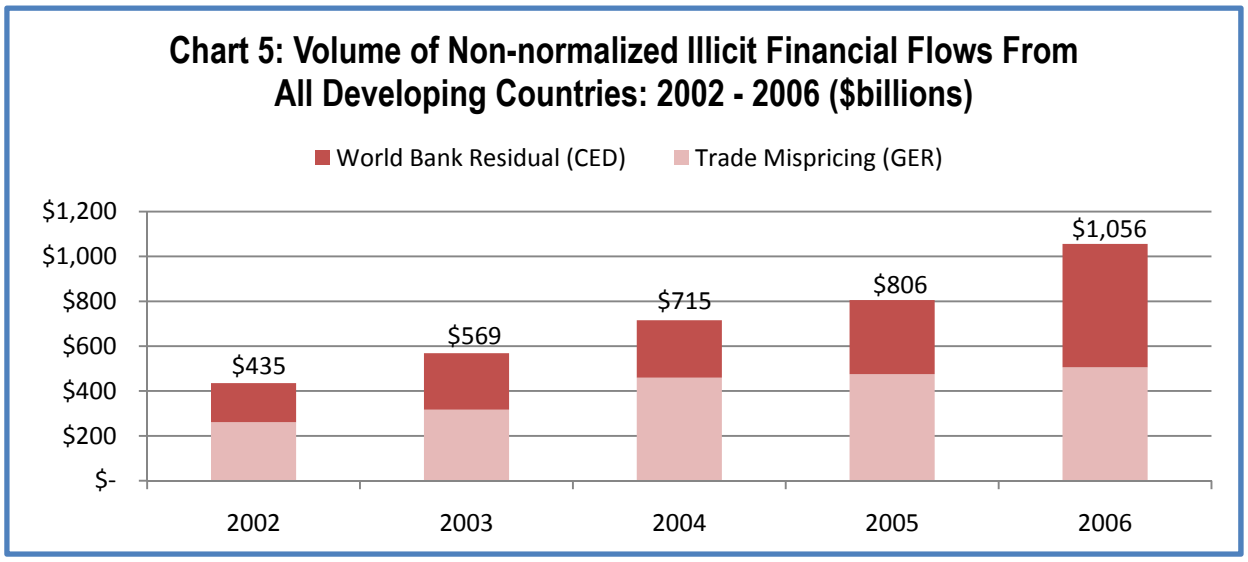


Chart 4: Volume of Normalized Illicit Financial Flows From All Developing Countries: 2002 - 2006 ($billions)





56. Because the change in external debt stocks should be consistent with net debt flows, the CED-GER and the NDF-GER models yield estimates that are quite close; in 2005, CED-GER illicit flow estimates ranged from US$675 to US$806 billion compared to NDF-GER estimates of between US$708 to US$861 billion (Chart 6). These ranges are compared to the Baker Range. In the most recent year for which data are available (2006), the CED-GER models indicate that illicit financial flows from developing countries increased to at least US$858 billion and up to US$1 trillion (Chart 7).

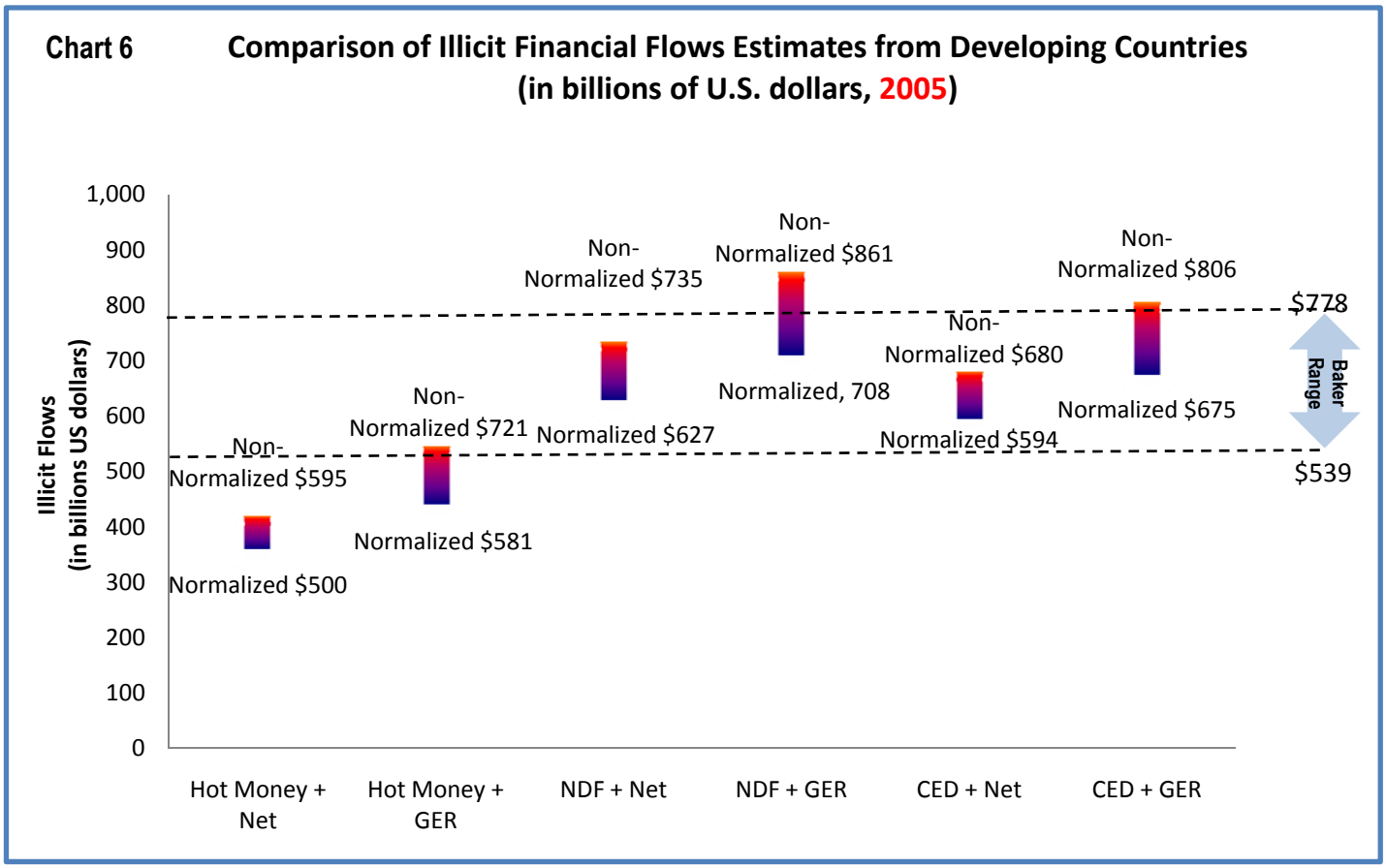
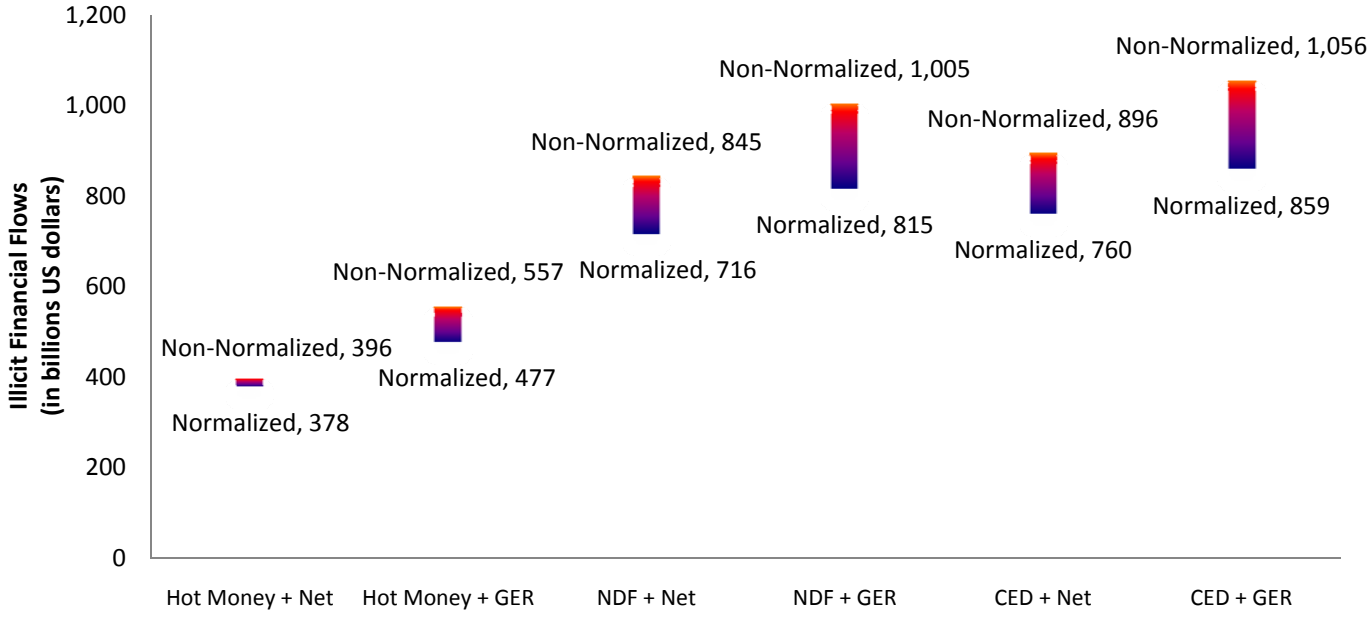


Chart 7 **Comparison of Illicit Financial Flows Estimates from Developing Countries (in billions of U.S. dollars, 2006)**



57. According to the Hot Money Narrow and Trade Mispricing (Net) models (second filter set at 10 percent of exports f.o.b.) between US$378–US$396 billion was transferred out of developing countries in 2006 (Chart 7) as illicit outflows where the lower and upper bounds of the range correspond to the normalized and non-normalized estimates respectively. Among all the models estimated in this study, the Hot Money-Net models fall short of the estimates by previous researchers by the widest margin. As noted in paragraph 8, the World Bank's October 1994 study also found that the broad-measure Hot Money method yields very low estimates of illicit outflows from developing countries for the reasons mentioned. Moreover, when illicit financial inflows are netted out from corresponding regional outflows, the Net method gives undue credit to many developing countries as having a genuine return of flight capital. As has been argued, a return of illicit outflows is unlikely in the absence of lasting improvements in economic policies and in governance-related factors that contribute to shifting such capital out of the country in the first place. To make matters worse, the inherently low estimates obtained by these methods were then further reduced by the two-stage filtration process (at a threshold of 10 percent of exports f.o.b.). For these reasons, the Hot Money-Net estimates are seriously biased downwards and cannot accurately reflect the volume of illicit flows from developing countries.

58. The Trade Mispricing (GER) model somewhat makes up for the shortcomings of the Hot Money Narrow method in that the Hot Money-GER combination comes close to the estimates obtained by previous researchers at the upper bound, although the lower bound misses the range by a much wider margin. Observe that the Net method of trade mispricing has its own problems for reasons mentioned earlier (e.g., attributing a change in sign due to data problems as a genuine return of flight capital). This drawback detracts from the overall robustness of the trade mispricing model so that its combination with the World Bank Residual model (whether based on net debt flows, NDF or change in debt, CED) pushes the lower ends of the range into ranges found by previous researchers even as the upper bounds fall short.

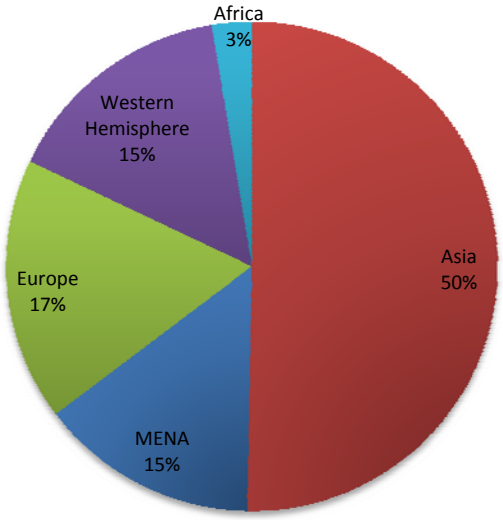
V. THE REGIONAL PATTERN OF ILLICIT FINANCIAL FLOWS

59. **Recall that the best unbiased combination of models is the CED-GER (normalized) combination.** Based on these models, it is possible to make the following observations regarding the pattern of average illicit financial flows from developing countries during the period 2002 to 2006:

- Developing Asia accounts for around 50 percent of average illicit financial flows from developing countries and normalization of estimates hardly alters this picture (see Charts 8 and 9). The huge volume of illicit flows from China (mainland) is behind Asia's dominance in overall flight capital from developing countries (see Charts 11 to 14). In fact, the volume of illicit flows from China is so high that there is a strong case for future research to carry out an in-depth analysis of the (i) factors driving such outflows from China and (ii) possible destinations and types of investments where such outflows are being absorbed.

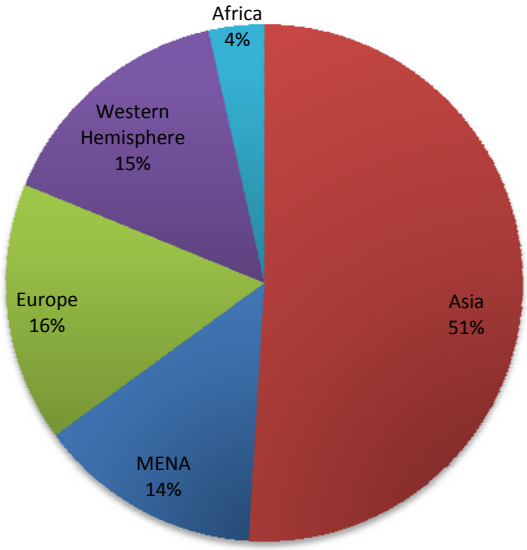
- Table 18 (Statistical Appendix) shows that according to the CED model, about US$56 billion of nontrade illicit capital flowed out of China on average between 2002 and 2006. As this figure represents less than 10 percent of China's exports, the total volume of illicit outflow from China is estimated at US$233.5 billion all of which results from trade mispricing. This estimate is similar to that obtained by Andong Zhu, Chunxiang Li, and Gerald Epstein (2005) for the period 1982 to 2001, using the World Bank residual method (change in external debt) and adjusting these estimates for trade misinvoicing. They estimate the trade misinvoicing model both by excluding and including Hong Kong as a trading partner. In excluding Hong Kong as a trading partner, as we have done in this study, they do not use Hong Kong's import and export data to calculate misinvoicing by China. We found that as a result of trade data issues related to Hong

Chart 8. Normalized* Illicit Flows from Developing Country Regions



*Three correct signs and IFF/export FOB > or =10%

Chart 9. Non-Normalized Illicit Flows by Region - Average GER + Average CED



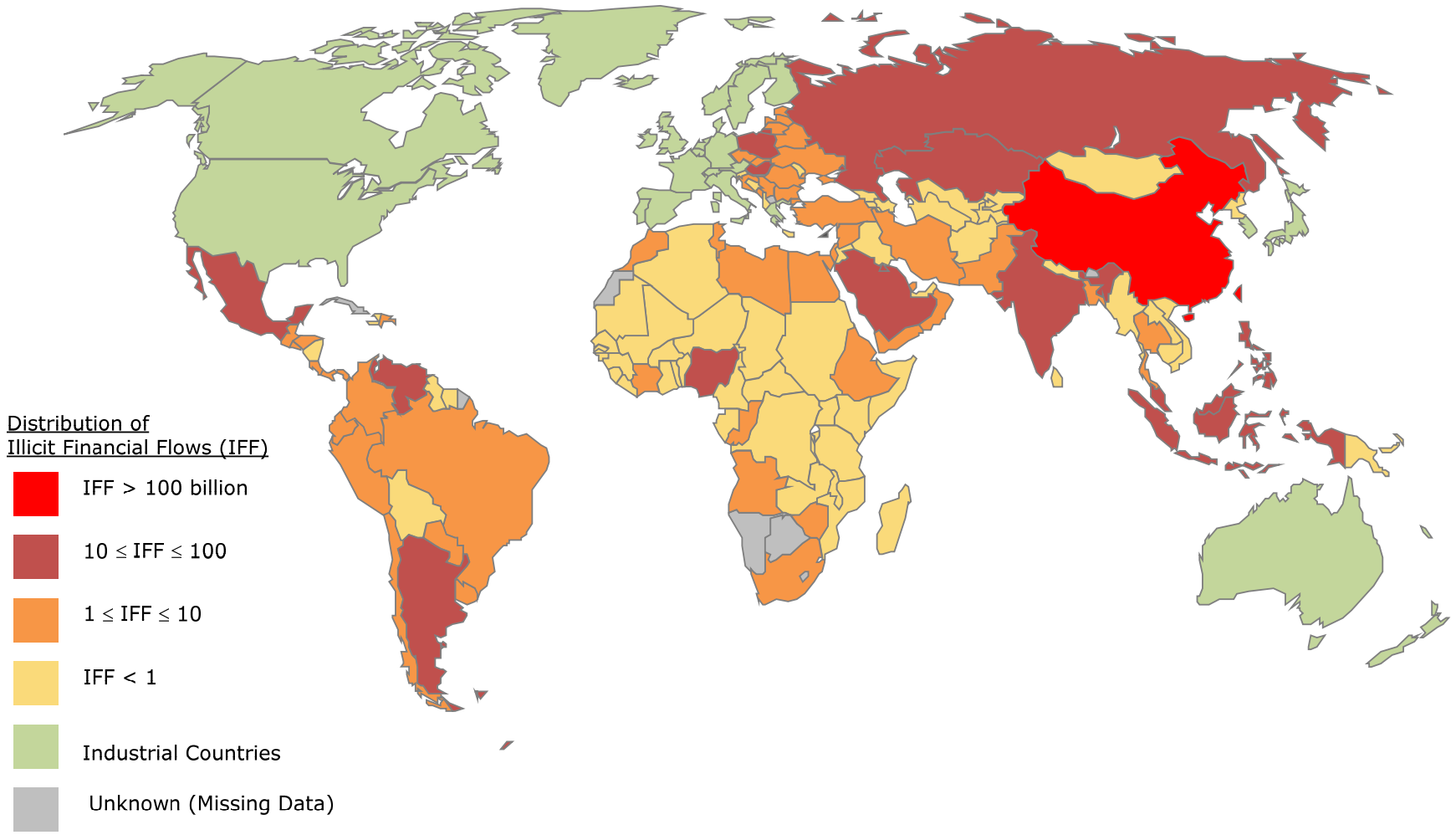
Kong, noted in the IMF's *Direction of Trade Statistics*, the inclusion of Hong Kong in our calculations would result in significant distortions in international trading patterns. There are two main reasons for partner country trade data distortions arising from the inclusion of Hong Kong in overall Chinese trade. The first has to do with the substantial amount of smuggling of imports into China from Hong Kong (showing up as underinvoicing of Chinese imports) which reduces illicit outflows. Second, apart from outright smuggling, data distortions related to recorded trade arise because trading partners in the rest of the world are often unable to correctly assign the country of origin or destination of trade with China and Hong Kong. These difficulties arise due to re-exports (involving the use of Hong Kong as a port) and trade between China and Hong Kong trade that is not recorded accurately. It is interesting to note however, that according to the Zhu et al report, capital flight from China (excluding Hong Kong) amounted to US$246.61 billion in 2000, which is slightly higher than the US$233.5 billion annual average for 2002-2006 estimated in this study.

- A handful of countries in Europe, including Russia, are driving Europe's second place (around 16-17 percent) in the share of average illicit flows from developing countries. Again, a separate study is warranted given the paucity of in-depth research on capital flight from Russia following the recent sharp fluctuations in crude oil prices.

- By far, the share of illicit financial flows from Africa is the lowest among all developing regions (approximately 3 percent of the total). **However, there are strong reasons to believe that the share would probably have been higher if more complete and reliable trade and external debt data were available.** Chart 10 shows that countries in Africa with missing data have a cumulative GDP accounting for nearly 37 percent of total African GDP. Missing data from MENA countries accounts for nearly 35 percent of regional GDP, also understating illicit financial flows from that region. The chart shows that data gaps do not seriously understate illicit financial flows from Asia, Europe, or the Western Hemisphere. This measure assumes that the understatement of illicit financial flows varies directly with the size of the economy relative to the region. For example, missing data on Congo, Democratic Republic are likely to understate illicit financial flows from Africa to a much larger extent than missing data on Lesotho (i.e., the larger the economy the larger the potential illicit financial flows, other things being equal).

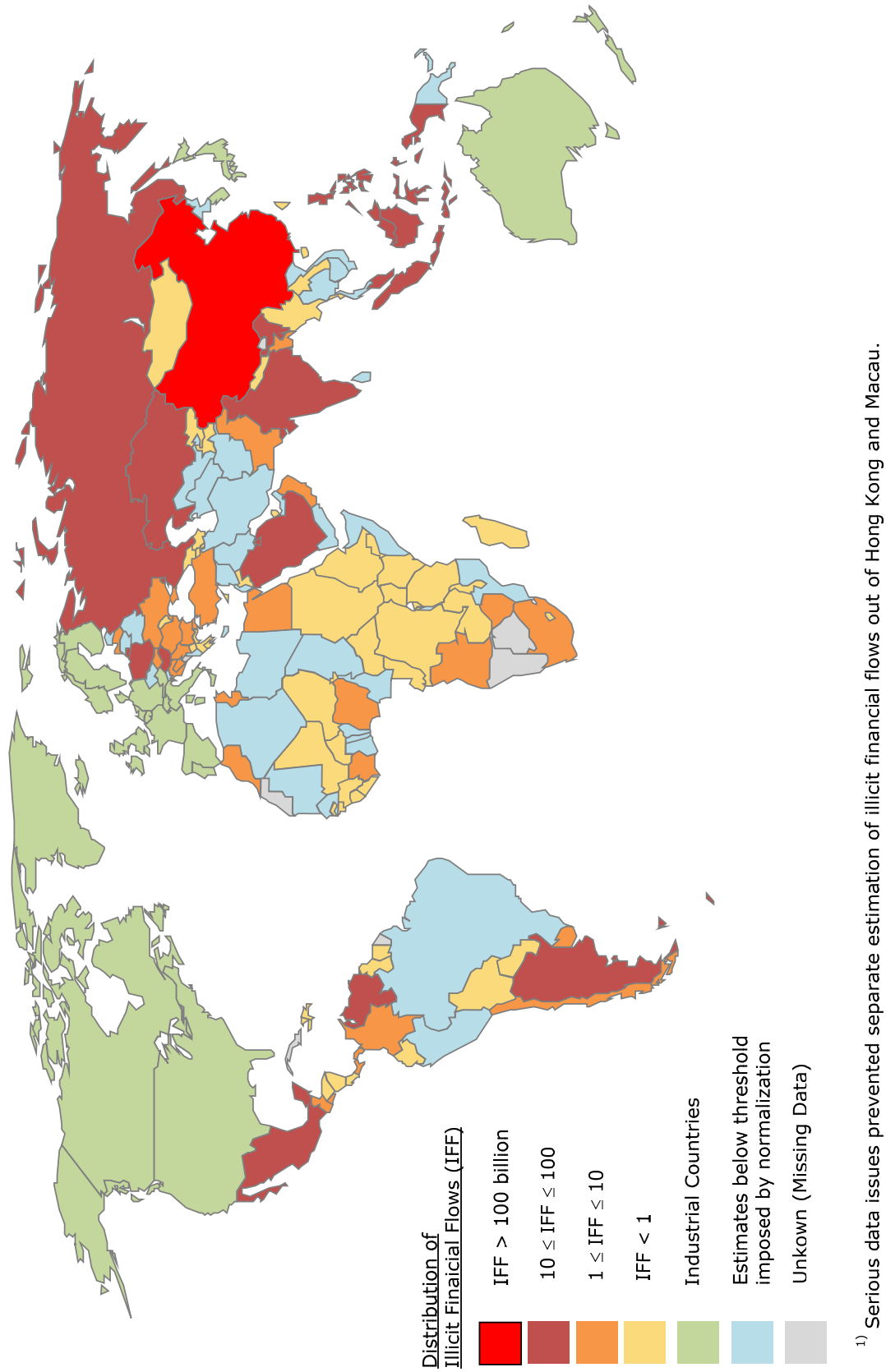
- The regional dispersion of illicit flows discussed above is illustrated Charts 11 and 12 which show the non-normalized and normalized global distribution as measured by the CED-GER models. We see that in both types of estimates, illicit outflows from China stand out prominently (bright red), which is followed by countries in the "greater than US$10 billion but less than US$100 billion category (dark red), while large swaths of the Western Hemisphere and parts of Africa fall in the greater than US$1 billion but less than US$10 billion category (orange). A large part of Africa (yellow) shows illicit outflows of less than one billion dollars annually. This global distribution of illicit outflows remains basically intact upon normalization (Chart 12), except that countries with less than US$10 billion in such outflows, involving large parts of the Western Hemisphere and Africa, now fall below the threshold imposed by normalization (light blue). Admittedly, more tiers in the volume of capital flight could have been added, but the combination of colors on the world map required by such fine tuning would come at the cost of clarity in the distribution.

Chart 11. Global Distribution of Non-normalized Illicit Financial Flows, Average 2002-06[1]



[1)] Serious data issues prevented separate estimation of illicit financial flows out of Hong Kong and Macau.

Chart 12. Global Distribution of Normalized Illicit Financial Flows, Average 2002-06[1]



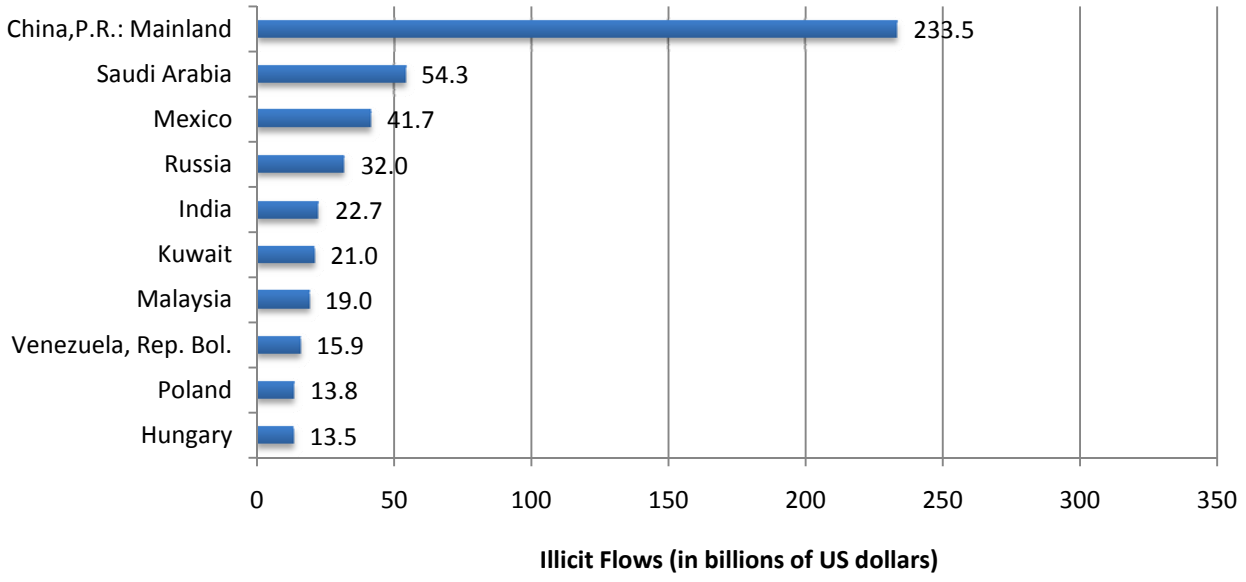
[1] Serious data issues prevented separate estimation of illicit financial flows out of Hong Kong and Macau.

- Over the five-year period, illicit outflows (Normalized CED + GER at 10 percent) grew at the fastest pace in the MENA region followed by Europe, Asia, Africa, and the Western Hemisphere in that order. This pattern of growth in illicit flows remains invariant with respect to the normalization process. The nearly 50 percent compound rate of growth in such outflows from the MENA region simply reflects the phenomenal growth of CED components such as the current account surplus and external debt of many oil producing countries in the MENA and European regions. GER registers a low figure because, as noted earlier, oil trade does not offer great opportunity for trade mispricing.

- In spite of this, at least five of the top ten countries with the highest average flight capital during 2002-06 (Kuwait, Mexico, Russia, Saudi Arabia, and Venezuela) are oil exporters (Chart 13); Indonesia, another oil exporter does not make the cut if estimates are normalized (Chart 14).

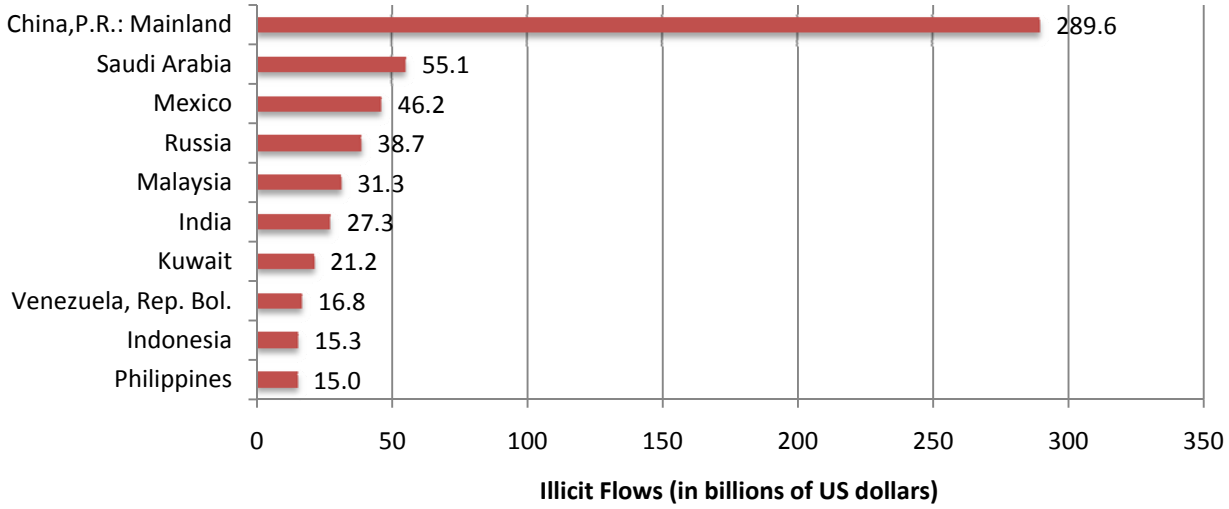
- Comparing the two top-ten lists, it is interesting to note that eight out of the ten countries—China, Saudi Arabia, Mexico, Russia, Malaysia, India, Kuwait, and Venezuela—are not affected by the normalization process and are therefore in both lists. Indonesia and the Philippines are in the non-normalized list while Hungary and Poland are in the normalized list.

Chart 13. Ten Countries with Highest Average Normalized Illicit Flows, 2002 - 2006



* Based on a combination of the World Bank Residual (CED) and Trade Mispricing (GER) models. Normalized involves three correct signs and IFF/Export f.o.b. = or >10%.
China refers to mailand only

Chart 14. Ten Countries with Highest Average Non-Normalized Illicit Flows, 2002 - 2006



* Based on a combination of the World Bank Residual (CED) and Trade Mispricing (GER) models. China refers to mailand only.

VI. SUMMARY OF FINDINGS AND CONCLUSIONS

60. The various models of illicit financial flows reviewed in this paper have their own limitations. For one, data deficiencies related to the net errors and omissions (NEO) used in the Hot Money Narrow measure or net debt flows (NDF) used to estimate a version of the World Bank Residual model, limit the wider applicability of these models. The paper found that in spite of some problems, the World Bank Residual method (change in external debts or CED) when combined with the Trade Mispricing (gross excluding reversals or GER) method provides the most unbiased and robust estimates of illicit flows (as data limitations are relatively less). Based on these findings, the CED-GER methods are used to analyze the overall volume and pattern of illicit flows from developing countries. In contrast, the Hot Money Narrow method produced low estimates of illicit flows due to data deficiencies and the restricted coverage of possible channels for transfer of such funds. Moreover, the Trade Mispricing model (Net) was also not selected as changes in signs indicating illicit inflows were suspect for many countries given that they have poor governance scores and have not undertaken any serious economic reform that would bring about the repatriation of flight capital. In fact, according to the Trade Mispricing (Net) estimates, Europe and the MENA regions show zero illicit flows thereby distorting the overall pattern of such outflows of capital from developing countries.

61. Estimates using the various models are subjected to a two-stage filtration procedure after which both the non-normalized and normalized estimates are compared for each set of models. Specifically, the filtration process subjects the entire list of developing countries (for which data are available) to pass through two filters: (i) such outflows must have the right sign in at least three out of the five years, and (ii) in addition exceed the threshold (10 percent) with respect to exports f.o.b. Thus, the two-

stage filtration process yields "normalized" or a low-end range of probable illicit flows from developing countries. At the first stage, only estimates with the correct sign (under all three methods of estimating illicit flows — the Hot Money Narrow method, the World Bank Residual Method, and the Trade Mispricing method) for at least three out of five years are taken as genuine illicit outflows. In contrast, the non-normalized method of deriving average and cumulative illicit flow for a country over the five-year period would include all cases where estimates had the right sign even for one year.

62. At the second stage, countries with illicit flows below a certain threshold level of exports f.o.b. are excluded. The rationale is that capital outflows below the threshold level are probably due to statistical errors of measurement and other data issues rather than genuine illicit outflows. Note that the setting of an adequate threshold level to act as a filter inevitably involves making a subjective judgment. However, while there is really no objective criterion for fixing the threshold at a certain level of exports, the two-stage filtration process works by eliminating data-related spurious cases. We chose the 10 percent threshold (rather than the less restrictive 5 percent) in order to arrive at a conservative figure of overall illicit outflows from developing countries.

63. Normalization techniques on various model combinations afford a range of estimates of overall illicit outflows from developing countries which are compared to the corresponding Baker Range. Chart 6 illustrates that the CED-GER estimates of overall illicit outflows from developing countries in 2005 (US$767 to US$931 billion) exceed the Baker Range (i.e., US$539 to US$778 billion in 2005) both at the lower and upper ends. Chart 7 shows the breakdown of 2006 (the most recent) estimates of illicit flows by model combination.

64. The IPPS and DOTS-based model estimates of illicit outflows through trade mispricing were compared. It was found that trade mispricing at the global level is consistently higher under the DOTS system than those obtained using the IPPS. A comparison of the two systems was based on the assumption that traders in different regions of the developing world misprice trade in proportion to the share of U.S. trade in the regions' trade with the world. In other words, if traders in Africa were to misprice US$1,000 in US$10,000 worth of total trade with the United States, then they would misprice US$10,000 in trade with the world if Africa's world trade is 10 times its trade with the United States. It was found that if the regional propensity to misprice trade with the United States were applied to the region's overall trade with the world, then that assumption would understate the region's global trade mispricing. This is probably because traders would generally be more cautious in mispricing trade with the United States than with other regions of the world (due to better enforcement by the U.S. Customs, very high governance scores in U.S. government institutions, and better tracking mechanisms in place in the United States relative to other developing countries).

65. Using the CED-GER models, the paper finds that developing Asia accounts for around half of the overall illicit outflows from developing countries—and normalization of estimates does not significantly alter this picture. It is clear that the huge volume of illicit outflows from mainland China is behind Asia's dominance in such outflows from developing countries (Charts 11-14).

66. A handful of countries in Europe, including Russia, is driving Europe's second place (around 16-17 percent) in the share of overall illicit outflows from developing countries. Again, a separate study is warranted given the paucity of in-depth research on illicit flows from Russia following the recent sharp volatility in crude oil prices. Average normalized illicit flows from the Western Hemisphere (at 15.2 percent of the average for all developing countries) are slightly more than the average illicit capital outflows from the MENA region (at 14.8 percent). Corresponding non-normalized estimates of regional illicit

flows also places the Western Hemisphere slightly ahead of the MENA region. By far, the share of illicit flows from Africa is the lowest among all developing regions (approximately 3-4 percent of the total). However, there are strong reasons to believe that the share would probably have been higher if more complete and reliable DOTS and external debt data were available.

67. Over the five-year period 2002-2006, illicit outflows grew at the fastest pace in the MENA region, followed by Europe, Asia, Africa, and the Western Hemisphere, in that order. This pattern of growth in illicit outflows remains invariant with respect to the normalization process. The nearly 50 percent compound rate of growth in illicit outflows from the MENA region simply reflects the phenomenal growth of CED components such as the current account surplus and external debt of many oil producing countries in the MENA and European regions. At the same time, GER registers a low figure because as noted earlier, oil trade does not offer much opportunity for trade mispricing.

REFERENCES

Almounsor, Abdullah 2005, *A Development Comparative Approach to Capital Flight: the Case of the Middle East and North Africa, 1970-2002* in Capital Flight and Capital Controls in Developing Countries, Edited by Gerald A. Epstein, pp. 234-261, Edward Elgar, Cheltenham, United Kingdom.

Abalkin, A and J. Whalley, 1999, *The Problem of Capital Flight from Russia*, *The World Economy*, May, Vol. 22, No. 3, 412-444.

Baker, Raymond W., 2005, *Capitalism's Achilles Heel, Dirty Money and How to Renew the Free-Market System*, John Wiley & Sons, Inc., Hoboken, New Jersey, United States.

Bhagwati, Jagdish N., 1967, *Fiscal Policies, the Faking of Foreign Trade Declarations and the Balance of Payments*, Bulletin of the Oxford University Institute of Statistics, February.

Bhagwati, Jagdish N, 1964, *On the Under-Invoicing of Imports*, Bulletin of the Oxford University, Institute of Economics and Statistics, 26, pp. 389-97.

Bhagwati, Jagdish, Krueger, Anne, and Wibulswasdi**,** C**.,** 1974, *Capital Flight from LDCs: A Statistical Analysis*, Illegal Transactions in International Trade (Ed.) J.N. Bhagwati, North Holland, and Amsterdam.

Cerra, Valerie, Rishi, Meenakshi , and Saxena, Sweta C. 2005, *Robbing the Riches: Capital Flight, Institutions, and Instability,* IMF Working Paper (WP/05/199, October, 2005).

Chang, P.H. Kevin, and Robert E. Cumby, 1991, *Capital Flight in Sub-Saharan African Countries*, in Ishrat Husain and John Underwood, eds. African External Finance in the 1990s, World Bank, pp. 162-184, Washington, DC.

Chipalkatti, Niranjan, and Meenakshi Rishi, 2001, *External Debt and Capital Flight in the Indian Economy*, *Oxford Development Studies*, Vol. 29, No. 1, pp. 31–44.

Cuddington, J., 1986, *Capital Flight: Estimates, Issues, and Explanations*, Princeton Studies in International Finance, No. 58.

Dooley, Michael, P., 1986, *Country Specific Risk Premiums, Capital Flight and Net Investment Income Payments in Selected Developing Countries*, International Monetary Fund, Departmental Memorandum, Washington DC.

Dooley, Michael, Helkie, W., Tyron, R. and Underwood, J., 1986, *An Analysis of External Debt Positions in Eight Developing Countries through 1990*, Journal of Developing Economics, pp. 283-318.

Dooley, Michael P., and Kenneth M. Kletzer, 1994, *Capital Flight, External Debt and Domestic Policies*, NBER Working Paper 4793 (Cambridge, Massachusetts: National Bureau of Economic Research).

Dornbusch, Rudiger, 1990, *Capital Flight: Theory, Measurement and Policy Issues*, Occasional Paper No. 2 (Washington: Inter-American Development Bank).

Fischer, Stanley, Ernesto Hernández-Catá, and Mohsin S. Khan, 1998, *Africa: This Is a Turning Point*? Paper presented at the American Economic Association meeting, Chicago, January 3–5.

Fischer, Stanley and Ratna Sahay, 1999, *The Transition Economies after Ten Years*, Draft, International Monetary Fund (October).

Gulati, Ravi, *A Note on Trade Misinvoicing*, in Capital Flight and Third World Debt, Lessard, Donald and John Williamson (eds.), Institute for International Economics, Washington DC.

Gunter, Frank R., 2004, *Capital Flight from China*, China Economic Review, Vol. 15, pp. 63-85.

Henry, Lester, 1996, *Capital Flight from Beautiful Places: The Case of Three Caribbean Countries*, *International Review of Applied Economics*, Vol. 10, No. 2, pp. 263–72.

Hermes, Niels, and Robert Lensink, 1992. *The Magnitude and Determinants of Capital Flight: The Case for Six Sub-Saharan African Countries*, De Economist, Vol. 140, No. 4, pp. 515–30.

Hermes, Niels, and Robert Lensink, 2001, *Capital Flight and the Uncertainty of Government Policies*, Economics Letters, Vol. 71, No. 3, pp. 377–81.

International Monetary Fund, 2006, *Annual Report on Exchange Arrangements and Exchange Restrictions*, 2006, Washington DC.

Kant, Chander, 1996, *Foreign Direct Investment and Capital Flight*, Princeton Studies in International Finance, No. 80, April.

Khan, Mohsin S., and Nadeem Ul Haque, 1985, *Foreign Borrowing and Capital Flight: A Formal Analysis*, *Staff Papers*, International Monetary Fund, Vol. 32 (December).

Khan, Moshin and N. Ul Haque, 1987, *Capital Flight from Developing Countries*, Finance and Development, March, pp. 2-5.

Le, Quan V., and Meenakshi Rishi, 2006, *Corruption and Capital Flight: An Empirical Assessment*, International Economic Journal, Vol. 20, No. 4, pp. 523-540, December.

Lessard, Donald and John Williamson eds**.,** 1984, *Capital Flight and Third World Debt*, Washington DC, Institute for International Economics.

Loungani, Prakash and Paolo Mauro 2000, *Capital Flight from Russia*, Conference on Post-Election Strategy, Moscow, April 2000.

Moghadam, Mashaallah Rahnama, Hedayeh Samavati, and David A. Dilts, 2003, *An Examination of Capital Flight from East Asian Emerging Economies: Paradise Lost*, *Journal of Asia-Pacific Business*, Vol. 5, No. 1, pp. 33–49.

Morgan Guaranty Trust Company, 1986, *LDC Capital Flight*, *World Financial Markets*, March, pp. 13-15.

Motala, John, 1997, *Statistical Discrepancies in the World Current Account*, Finance and Development, International Monetary Fund, March 1997, Vol. 34, No. 1.

Nayak, Dinkar N., 1999, *Capital Flight from India (1975-1995)*, Foreign Trade Review: Quarterly Journal of The Indian Institute of Foreign Trade (India); 34, No. 2, pp. 57-73.

Ndikumana, Léonce and James K. Boyce, 2008, *New Estimates of Capital Flight from Sub-Saharan African Countries: Linkages with External Borrowing and Policy Options*, University of Massachusetts, Amherst, April.

Ndung'u, Njuguna, 2007, *Keynote Address by Governor, Central Bank of Kenya* at the Senior Policy Seminar on Implications of Capital Flight for Macroeconomic Management and Growth in Sub-Saharan Africa, South African Reserve Bank, October.

NGO Documents for the Earth Summit, 1992, *Treaty 15: Capital Flight and Corruption Treaty*, Non-Governmental Organization Alternative Treaties at the 1992 Global Forum.

Schineller, Lisa, 1997, *An Econometric Model of Capital Flight from Developing Countries*, Federal Reserve Board, International Finance Discussion Paper No. 579.

Schneider, Benu, 2003, *Measuring Capital Flight: Estimates and Interpretations*, Working Paper No. 194, Overseas Development Institute, London, United Kingdom, March.

Sheets, Nathan, 1996, *Capital Flight from the Countries in Transition: Some Empirical Evidence, Journal of Policy Reform*, Vol. 1, pp. 259-277.

Sicular, Terry, 1998, *Capital Flight and Foreign Investment: Two Tales from China and Russia*, The World Economy, July, Vol. 21, No. 5, pp. 589-602.

Tikhomirov, Vladimir, 1997, *Capital Flight from Post-Soviet Russia*, Europe-Asia Studies, Vol. 49, No. 4, pp. 591-616.

Varman-Schneider, B., 1991, *Capital Flight from Developing Countries*, Westview Press, Boulder, Colorado, USA.

Walter, Ingo, 1987, *The Mechanisms of Capital Flight*, in Lessard, Donald R. and Williamson, J., Capital Flight and Third World Debt, Institute for International Economics.

World Bank, 1985, *World Development Report*, Washington DC, Oxford University Press for the World Bank.

Zhu, Andong, Chunxiang Li, and Gerald Epstein, 2005, *Capital Flight from China, 1982-2001*, in Capital Flight and Capital Controls in Developing Countries, Edited by Gerald A. Epstein, pp. 262-285, Edward Elgar, Cheltenham, United Kingdom.

BIOGRAPHIES

DR. DEV KAR
Lead Economist, Study Author

Dev Kar is a Lead Economist at the Global Financial Integrity Program, Center for International Policy. Prior to joining CIP, Dr. Kar was a Senior Economist at the International Monetary Fund (IMF), Washington DC. During a career spanning nearly 32 years at the IMF, he worked on a wide variety of macroeconomic and statistical issues, both at IMF headquarters and on different types of IMF missions to member countries (technical assistance, Article IV Consultations with member countries, and Use of IMF Resources).

Dr. Kar's assignments at the IMF included: (i) research studies on the functions and role of central banks which formed the basis for the design, development, and implementation of a large-scale database on laws, regulations, and data on various aspects of central banking operations, (ii) technical papers on the operational budget of the IMF, (iii) carrying out complex IMF operational transactions with member countries, (iv) review of IMF lending programs involving the use of its financial resources in order to assess sovereign and liquidity risks, (v) the monitoring of economic and political developments in Heavily Indebted Poor Countries (HIPC) and in Poverty Reduction and Growth Facility (PRGF)-eligible countries, (vi) preparation of research papers and discussion notes on the role of the SDR in the international monetary system and the use of the SDR as a unit of account by multilateral institutions, (vii) critiquing technical assistance papers based on expert technical knowledge of international methodological guidelines on national accounts, price statistics, and merchandise trade, (viii) providing technical assistance to member countries in the area of national accounts, prices, and external trade in order to build members' statistical capacities, (ix) preparing papers for discussion by the IMF Executive Board on recent cases of overdue financial obligations of certain members and assessing the likelihood of payments by these countries, (x) preparing short papers on the external debt situation of heavily indebted countries and providing technical assistance to IMF economists in forecasting external debt profiles, (xi) conducting extensive research on early warning models that seek to predict an external debt crisis for heavily indebted countries, and (xii) developing statistical measures and indicators on quantitative and non-quantitative trade restrictions, dumping, and other trade policy issues, comparing them across countries and within countries over time. Dr. Kar has a Ph.D. in Economics from the George Washington University (Major: Monetary Economics), an M. Phil (Economics), also from the same university (Major: International Economics) and a M.S. (Computer Science) from Howard University (Major: Database Management Systems). He obtained an undergraduate degree in Physics from St. Xavier's College, University of Calcutta, India. Dev has published a number of articles on macroeconomic and statistical issues both inside and outside the IMF.

DEVON CARTWRIGHT-SMITH
Senior Research Associate, Study Co-Author

Devon Cartwright-Smith is the Senior Research Associate at Global Financial Integrity. He is also currently in the Doctoral Program in Economics at Georgetown University. Prior to joining GFI, Mr.

Cartwright-Smith was the Operations Analyst at Baker & Taylor, the largest U.S. distributor of books, music and movies for libraries and retailers, with six branches nationwide. While there, he reengineered the previous approach to data collection and processing into vastly more efficient methods. He moved the company from a manual reporting framework to a fully automated Excel-driven reporting system. He was regularly sought out by several other departments, company-wide, to develop creative solutions to problems and operational inefficiencies.

Mr. Cartwright-Smith graduated from Bates College in 2003 with a degree in Economics. For his senior thesis, he acquired data from over 1100 completed eBay auctions using original scripts written in Excel, defined new market spaces for item types, and created and parameterized a pair of models, one for each market space, that determined, in a linear regression analysis, the final price in an auction and, alternatively, the number of bidders in an auction. In 2001 he won a competitive fellowship, where he was retained as a consultant to advise the city of Lewiston, Maine on strategies for implementing a mixed-income housing initiative.

RAYMOND W. BAKER
Director, Global Financial Integrity

Raymond Baker is an internationally respected authority on corruption, money laundering, growth and foreign policy issues in developing and transitional economies and the impact of these problems on western economic and foreign interests. He has written and spoken extensively, testified before U.S. Senate and House committees and U.K. Parliamentary committees, been quoted worldwide, and has commented frequently on television and radio in the United States, Europe and Asia on legislative matters and policy questions, including appearances on Nightline, CNN, BBC, NPR, ABC, Four Corners in Australia and Fifth Estate in Canada, among others. He is the author of *Capitalism's Achilles Heel: Dirty Money and How to Renew the Free-Market System* (John Wiley & Sons), recognized by the *Financial Times* as one of the best business books of 2005

Mr. Baker is a Guest Scholar at the Brookings Institution and a Senior Fellow at the Center for International Policy where he directs the **Global Financial Integrity (GFI)** program.

Illicit Financial Flows from Developing Countries: 2002 - 2006

Dev Kar and Devon Cartwright-Smith

Statistical Appendix

The following Statistical Appendix consists of 20 tables. The first three tables show the nature and extent of capital controls in developing countries, the system of classifying developing countries, and the extent of data deficiencies affecting the Hot Money measure. Table 4 presents alternative estimates of trade mispricing obtained by applying the DOTS and IPPS models. Tables 5 and 6 present summary estimates of non-normalized and normalized illicit flows provided by the various models and the regional breakdown of these estimates. As the CED-GER models are the main ones used in this paper to analyze developments in global and regional illicit flows, the combined estimates are shown separately in Table 7 for ease of reference. In addition, the non-normalized and normalized estimates of illicit flows for individual countries obtained through the Hot Money model, the World Bank Residual model (CED as well as NDF), and the Trade Mispricing model (GER as well as Net) are presented in ten tables (Tables 8-17). Tables 18-19 show the non-normalized and normalized estimates of illicit outflows for individual countries obtained by applying the CED-GER models. The data presented in these two tables form the basis for the global distribution of illicit financial flows shown in Charts 11 and 12. Table 20 lists the 28 countries and the volume of illicit flows that were eliminated through the normalization procedures.

Table 1: Summary Features of Exhange Arrangements and Regulatory Frameworks	**Status under IMF Articles of Agreement**		**Exchange rate arrangements**								**Exchange Rate Structure**		**Arrangements for payments and receipts**			**Proceeds from exports and/or invisible transactions**	
	Article VIII	Article XIV	Exchange arrangement with no separate legal tender	Currency board arrangement	Conventional pegged arrangement	Pegged exchange rate within horizontal bands	Crawling peg	Crawling band	Managed floating with no pre-determined path for the exchange rate	Independently floating	Dual exchange rates	Multiple exchange rates	Bilateral payments arrangements	Payments arrears	**Controls on payments for invisible transactions and current transfers**	Repatriation requirements	Surrender requirements
Developing Countries																	
Afghanistan, I.R. of		●							●				●	/	●	/	/
Albania		●								●				●		●	
Algeria	●								●				●		●	●	●
Angola		●							●				●	●	●	●	●
Argentina	●								●				●	●		●	●
Armenia	●									●			●				
Azerbaijan, Rep. of	●				◊								●		●	●	
Bahamas, The	●				◊						●				●	●	●
Bahrain, Kingdom of	●				◊								●				
Bangladesh	●								●				●		●	●	●
Barbados	●				◊								/		●	●	●
Belarus	●				◊								●	●	●	●	●
Belize	●				◊						●				●	●	●
Benin	●		▲										●		●	●	●
Bolivia	●						◊								●		
Bosnia & Herzegovina		●		▲												●	
Brazil	●									●						●	●
Brunei Darussalam	●			♦											●		
Bulgaria	●			▲									●	●	●	●	
Burkina Faso	●		▲										●	●	●	●	●
Burundi		●							●				●	●	●	●	
Cambodia	●								●		●					●	
Cameroon	●		▲											●	●	●	●
Cape Verde	●				▲								●	●	●	●	●
Central African Rep.	●		▲											●	●	●	●
Chad	●		▲											●	●	●	●
Chile	●									●							
China,P.R.: Mainland	●				◊										●	●	●
Colombia	●								●							●	
Comoros	●				▲									●	●	●	●
Congo, Dem. Rep. of	●									●			●	●	●	●	●
Congo, Republic of	●		▲											●	●	●	●
Costa Rica	●															●	
Côte d'Ivoire	●		▲											●	●	●	●
Croatia	●								●				●				
Cyprus	●					±											
Czech Republic	●								●								
Djibouti	●			◊										●			
Dominican Republic	●								●				●				
Ecuador	●		□										●	●			
Egypt	●				◊								●				
El Salvador	●		□														
Equatorial Guinea	●		▲											●	●		
Estonia	●			±									●	●			
Ethiopia		●							●						●	●	●
Fiji	●				*								/	/	●	●	●
Gabon	●		▲											●	●	●	●
Gambia, The	●								●								
Georgia	●								●						●		
Ghana	●								●						●	●	●
Grenada	●		◊													●	●
Guatemala	●								●				●				
Guinea	●								●				●	●	●	●	

Table 1: Summary Features of Exhange Arrangements and Regulatory Frameworks

	Status under IMF Articles of Agreement		**Exchange rate arrangements**								**Exchange Rate Structure**		**Arrangements for payments and receipts**			**Proceeds from exports and/or invisible transactions**	
	Article VIII	Article XIV	Exchange arrangement with no separate legal tender	Currency board arrangement	Conventional pegged arrangement	Pegged exchange rate within horizontal bands	Crawling peg	Crawling band	Managed floating with no pre-determined path for the exchange rate	Independently floating	Dual exchange rates	Multiple exchange rates	Bilateral payments arrangements	Payments arrears	**Controls on payments for invisible transactions and current transfers**	Repatriation requirements	Surrender requirements
Guinea-Bissau	●		▲										●	●	●	●	●
Guyana	●				◊								●	●			
Haiti	●								●				●	●			
Honduras	●				◊								●			●	●
Hungary	●					▲											
India	●								●						●	●	●
Indonesia	●								●								
Iran, I.R. of	●						◊								●		
Iraq		●			◊									●	●	●	●
Israel	●									●							
Jamaica	●								●								
Jordan	●				◊								●				
Kazakhstan	●								●						●	●	
Kenya	●								●					●			
Kuwait	●				◊												
Kyrgyz Republic	●								●				●	●			
Lao People's Dem.Rep		●							●				●	/	●	●	●
Latvia	●				±												
Lebanon	●				◊												
Liberia		●							●					●			
Lithuania	●			±									●				
Macedonia, FYR	●				▲								●		●		
Madagascar	●								●				●	●		●	
Malawi	●								●					●	●	●	●
Malaysia	●								●				●			●	●
Maldives		●			◊												
Mali	●		▲												●	●	●
Malta	●				±												
Mauritania	●				◊								●	●	●	●	●
Mauritius	●								●								
Mexico	●									●			●				
Moldova	●								●				●		●	●	
Mongolia	●								●				●	●			
Morocco	●				*										●	●	●
Mozambique		●							●					●	●	●	●
Myanmar		●							●		●			●	●	●	
Nepal	●				♦										●	●	●
Nicaragua	●						◊						●	●			
Niger	●		▲												●	●	●
Nigeria		●							●			●		●	●	●	●
Oman	●				◊												
Pakistan	●				◊										●	●	●
Panama	●		□														
Papua New Guinea	●								●						●		
Paraguay	●								●						●		
Peru	●								●				●	●			
Philippines	●									●			●		●		
Poland	●									●			●		●		
Qatar	●				◊								/				
Romania	●								●				●	●			
Russia	●								●				●	●		●	●
Rwanda	●								●						●	●	
St. Lucia	●		◊												●		
St. Vincent & Grens.	●		◊											●	●	●	●

Table 1: Summary Features of Exhange Arrangements and Regulatory Frameworks

	Status under IMF Articles of Agreement		**Exchange rate arrangements**								**Exchange Rate Structure**		**Arrangements for payments and receipts**			**Proceeds from exports and/or invisible transactions**	
	Article VIII	Article XIV	Exchange arrangement with no separate legal tender	Currency board arrangement	Conventional pegged arrangement	Pegged exchange rate within horizontal bands	Crawling peg	Crawling band	Managed floating with no pre-determined path for the exchange rate	Independently floating	Dual exchange rates	Multiple exchange rates	Bilateral payments arrangements	Payments arrears	**Controls on payments for invisible transactions and current transfers**	Repatriation requirements	Surrender requirements
Samoa	●														●	●	●
Saudi Arabia	●				◊												
Senegal	●		▲														
Serbia & Montenegro	●		□						●					●			
Seychelles	●				◊								●	●			
Sierra Leone	●									●			●	●			
Slovak Republic	●					±											
Slovenia	●					±							●				
Solomon Islands	●				◊												
Somalia		●								●	●		/	/			
South Africa	●									●							
Sri Lanka	●								●								
Sudan	●								●				●				
Suriname	●				◊							●	/	●			
Syrian Arab Republic		●			◊							●	●	●			
Tajikistan	●								●					●			
Tanzania	●									●			●	●			
Thailand	●								●								
Togo	●		▲											●			
Tonga	●					^											
Tunisia	●								●								
Turkey	●									●			●				
Turkmenistan		●			◊							●	●	●			
Uganda	●									●			●	●			
Ukraine	●				◊								●	/			
United Arab Emirates	●				◊												
Uruguay	●								●				●				
Uzbekistan	●								●						●	●	●
Vanuatu	●				^								■	■	■	■	■
Vietnam	●				◊								●		●	●	
Yemen, Republic of	●									●				●			
Zambia	●								●					●			
Zimbabwe	●				◊							●	●	●	●	●	●
Aruba	●				◊										●	●	●

Key and Footnotes

● The specified practice is a feature of the exchange system.

/ Data were not available at time of publication.

■ The specific practice is not regulated.

Source: *Annual Report on Exchange Arrangements and Exchange Restrictions* , 2006. IMF, Washington DC

Table 1: Summary Features of Exhange Arrangements and Regulatory Frameworks	**Capital transactions**	Controls on:										Provisions specific to:	
	Capital market securities	*Money market instruments*	*Collective investment securities*	*Derivatives and other instruments*	*Commercial credits*	*Financial credits*	*Guarantees, sureties, and financial backup facilities*	*Direct investment*	*Liquidation of direct investment*	*Real estate transactions*	*Personal capital movements*	*Commercial banks and other credit institutions*	*Institutional investors*
Developing Countries													
Afghanistan, I.R. of	/	/	/	/	/	/	/	/	/	/	/	●	●
Albania	●	●	●	●	●	●	●	●		●	●	●	■
Algeria	●	/	●	●	●	●	●	●	●	●	●	●	
Angola	●	●	●	■	●	●	●	●	●	●	●	●	■
Argentina	●	●	●	●	●	●	●	●	●	●	●	●	●
Armenia										●		●	
Azerbaijan, Rep. of	●	●	●	■	●	●		●		●	●	●	
Bahamas, The	●	●	●	●	●	●	●	●		●	●	●	/
Bahrain, Kingdom of	●	●						●		●		●	
Bangladesh	●	●	●	●	●	●	●	●	●	●	●	●	
Barbados	●	●	●	●	●	●	●	●	●	●	●	●	●
Belarus	●	●	●	●	●	●		●		●	●	●	●
Belize	●	●	●	●	●	●	●	●	●	●	●	●	
Benin	●	●	●	●	●	●	●	●		●	●	●	●
Bolivia					●	●						●	●
Bosnia & Herzegovina	●					●		●	●	●	●	●	●
Brazil	●		■	●	■			●				●	●
Brunei Darussalam								●		●	●	●	
Bulgaria						●	●	●		●	●	●	●
Burkina Faso	●	●	●	●	●	●	●	●		●	●	●	●
Burundi	●	●	■	■	●	●	●	●	●	●	●	●	
Cambodia	■	■	■	■				●		●		●	
Cameroon	●	●	●	■	●	●	●	●	●	●	●	●	●
Cape Verde	●	●		■	●	●	●	●		●	●	●	/
Central African Rep.	●	●	●	●	●	●	●	●	●	/	●	/	/
Chad	●	●	●	●	●	●	●	●	●	●	●	●	/
Chile			●	●								●	●
China,P.R.: Mainland	●	●	●	●	●	●	●	●	●	●	●	●	
Colombia	●	●	●	●	●	●	●	●	●		●	●	●
Comoros	●	■	■	■	●	●	●	●	●	●	●	●	
Congo, Dem. Rep. of	●	●	●	●	●	●	●	●	●	●	●	●	●
Congo, Republic of	●	●	●	●	●	●	●	●	●	/	/	/	/
Costa Rica											/	●	/
Côte d'Ivoire	●	●	●	●	●	●	●	●		●	●	●	●
Croatia	●	●	●	●	●	●	●			●	●	●	●
Cyprus								●		●		●	●
Czech Republic	●	●	●	●				●		●		●	●
Djibouti					●	●	●	●				●	●
Dominican Republic					●	●	●	●			●	●	●
Ecuador					●		●	●					
Egypt	●			■	●			●				●	●
El Salvador								●				●	●
Equatorial Guinea	●	●	●	●	●	●	●	●	●	●	●	●	●
Estonia										●	●	●	●
Ethiopia	●	●	■	■	●	●	●	●	●	●	●	●	●
Fiji	●	●	●	●	●	●	●	●	●	●	●	●	●
Gabon	●	●	●	●	●	●	●	●	●	●	●	●	●
Gambia, The						●						●	
Georgia				●								●	/
Ghana	●	●	●	●	●	●		●		●	●	●	
Grenada	●	●	●	●	●	●	/	●	●	●	●	●	
Guatemala												●	●
Guinea	●	●	●	●	●	●	●	●		●	●	●	

Table 1: Summary Features of Exhange Arrangements and Regulatory Frameworks	**Capital transactions**	Controls on:										Provisions specific to:	
	Capital market securities	*Money market instruments*	*Collective investment securities*	*Derivatives and other instruments*	*Commercial credits*	*Financial credits*	*Guarantees, sureties, and financial backup facilities*	*Direct investment*	*Liquidation of direct investment*	*Real estate transactions*	*Personal capital movements*	*Commercial banks and other credit institutions*	*Institutional investors*
Guinea-Bissau	●	●	●	●	●	●	●	●		●	●	●	●
Guyana					●	●	●					●	
Haiti				/								●	/
Honduras	●		●		●	●	●	●		●		●	●
Hungary	●	●	●			●		●		●		●	●
India	●	●	●	●	●	●	●	●	●	●	●	●	●
Indonesia	●	●	●	●	●	●	●	●		●		●	●
Iran, I.R. of	●	●	●	/	●	●	●	●	●	●	●	●	/
Iraq	/	/	/	/	/	/	/	●	/	●	/	●	/
Israel												●	/
Jamaica	●	●	●	●							■	●	●
Jordan								●		●		●	
Kazakhstan	●	●	●	●	●	●		●		●	●	●	●
Kenya	●	●	●	●						●		●	●
Kuwait	●	●	●	●				●		●		●	
Kyrgyz Republic	●	●	●	■						●		●	●
Lao People's Dem.Rep	●	●	●	●	●	●		●		●	●	●	/
Latvia								●		●		●	●
Lebanon	●	●	●	●	●	●	●	●		●		●	●
Liberia													/
Lithuania								●		●	●	●	●
Macedonia, FYR	●	●	●	●	●	●	●	●		●	●	●	●
Madagascar	●	■	■	■	●	●	/	●	●	●	/	●	/
Malawi	●	●	●	●	●	●	●	●		●	●	●	/
Malaysia	●	●	●	●	●	●	●	●		●	●	●	●
Maldives	●			■		●		●		●	●	●	■
Mali	●	●	●	●	●	●	●	●		●	●	●	●
Malta										●			●
Mauritania	●	●	●	●	●	●	●	●		●	●	●	/
Mauritius	●							●		●		●	
Mexico	●	●	●	●		●	●	●		●	●	●	●
Moldova	●	●	●	●	●	●	●	●	●	●	●	●	●
Mongolia	●	●	●	●	●	●		■		●	●	●	
Morocco	●	●	●	●	●	●	●	●	●	●	●	●	
Mozambique	●	●	●	●	●	●	●	●	●	●	●	●	●
Myanmar	/	/	/	/	●	●	●	●	●	●	●	●	/
Nepal	●		/		●	●	●	●	●	●	●	●	■
Nicaragua								●				●	●
Niger	●	●	●	●	●	●	●	●	●	●	●	●	●
Nigeria	●	●			●				●		●	●	
Oman	●							●		●		●	/
Pakistan	●	●	●	●	●	●	●	●		●	●	●	●
Panama													
Papua New Guinea	●	●	●	●	●	●	●	●	●	●	●	●	●
Paraguay												●	
Peru												●	●
Philippines	●	●	●	●	●	●	●	●		●	●	●	●
Poland	●	●	●	●		●	●	●		●	●	●	●
Qatar								●		●	●		
Romania		●		●						●		●	■
Russia	●	●	●	●		●		●			●	●	
Rwanda	●	●	●			●	●	●			●	●	
St. Lucia	●	●	●	●	●	●	●	●	/	●	●	●	●
St. Vincent & Grens.	●	●	●	●	●	●	/	●		●	/	●	/

Table 1: Summary Features of Exhange Arrangements and Regulatory Frameworks	**Capital transactions**	Controls on:										Provisions specific to:	
	Capital market securities	*Money market instruments*	*Collective investment securities*	*Derivatives and other instruments*	*Commercial credits*	*Financial credits*	*Guarantees, sureties, and financial backup facilities*	*Direct investment*	*Liquidation of direct investment*	*Real estate transactions*	*Personal capital movements*	*Commercial banks and other credit institutions*	*Institutional investors*
Samoa	●	●	●		●	●	●	●	●	●	●	●	
Saudi Arabia	●	●	●	●	●	●	●	●		●		●	●
Senegal	●	●	●	●	●	●	●	●		●	●	●	●
Serbia & Montenegro	●	●	●	●	●	●		●	●	●	●	●	●
Seychelles										●		●	
Sierra Leone	●	●	●	■		●	●	●		●	■	●	■
Slovak Republic	●		●					●	■	●		●	●
Slovenia			●					●		●		●	●
Solomon Islands	●	●	●	●	●	●	●	●	●	●	●	●	●
Somalia	●	●	●	/	●	●	●	●	●	●	/	/	/
South Africa	●	●	●	●	●	●	●	●		●	●	●	●
Sri Lanka	●	●	●	●	●	●	●	●	●	●	●	●	●
Sudan	●	●	/	/	●	●	●	●		●	●	●	
Suriname	●	●	●	●	●	●	/	●	●	●	●	●	●
Syrian Arab Republic	●	●	■	/	●	●	●	●	●	●	/	●	/
Tajikistan	●	●	●	●	●	●	●	●	●	●	●	●	
Tanzania	●	●	●	●	●	●	●	●	●	●	●	●	●
Thailand	●	●	●	●		●	●	●		●	●	●	●
Togo	●	●	●	●	●	●	●	■		●	●	●	●
Tonga	●	●	●	●	●	●	●	■	●	●	●	●	/
Tunisia	●	●	●	●	●	●	●	■		●	●	●	●
Turkey	●	●	●	●	●	●		■		●	●	●	●
Turkmenistan	●	●	●	/	●	●	●	■		●	●	●	●
Uganda										●		●	
Ukraine	●	●	●	●	●	●	●	●		●		●	●
United Arab Emirates	●		●					●		●		●	
Uruguay				■								●	●
Uzbekistan	●	■	●	■	●	●	●	●	●	●	●	●	■
Vanuatu	■	■	■	■	■	■	■	■	■	■	■	■	■
Vietnam	●	●	●	●	●	●	●	●	/	●	●	●	●
Yemen, Republic of					●	●						●	
Zambia												●	
Zimbabwe	●	●	●	●	●	●	●	●	●	●	●	●	●
Aruba	●	●	●	●	●	●	●	●	●	●	●	●	●

Key and Footnotes

● The specified practice is a feature of the exchange system.	**101**	**88**	**87**	**74**	**88**	**96**	**78**	**106**	**45**	**109**	**84**	**132**	**75**
/ Data were not available at time of publication.	**3**	**4**	**5**	**9**	**2**	**2**	**6**	**1**	**4**	**3**	**8**	**3**	**22**
■ The specific practice is not regulated.	**2**	**5**	**8**	**16**	**2**	**1**	**1**	**7**	**2**	**1**	**3**	**1**	**8**

Source: *Annual Report on Exchange Arrangements and Exchange Restrictions* , 2006. IMF, Washington DC

Table 2: Classification of 160 Developing Countries

Africa - 48	Asia - 30	Europe - 31	Middle East and North Africa - 18	Western Hemisphere - 33
Angola	Afghanistan, I.R. Of	Albania	Algeria	Antigua & Barbuda
Benin	Bangladesh	Armenia	Bahrain, Kingdom Of	Argentina
Botswana	Bhutan	Azerbaijan, Rep. Of	Egypt	Aruba
Burkina Faso	Brunei Darussalam	Belarus	Iran, I.R. Of	Bahamas, The
Burundi	Cambodia	Bosnia & Herzegovina	Iraq	Barbados
Cameroon	China,P.R.: Mainland	Bulgaria	Israel	Belize
Cape Verde	Fiji	Croatia	Jordan	Bolivia
Central African Rep.	India	Cyprus	Kuwait	Brazil
Chad	Indonesia	Czech Republic	Lebanon	Chile
Comoros	Kiribati	Estonia	Libya	Colombia
Congo, Dem. Rep. Of	Lao People's Dem.Rep	Georgia	Morocco	Costa Rica
Congo, Republic Of	Malaysia	Hungary	Oman	Dominica
Côte D'Ivoire	Maldives	Kazakhstan	Qatar	Dominican Republic
Djibouti	Marshall Islands	Kyrgyz Republic	Saudi Arabia	Ecuador
Equatorial Guinea	Micronesia	Latvia	Syrian Arab Republic	El Salvador
Eritrea	Mongolia	Lithuania	Tunisia	Grenada
Ethiopia	Myanmar	Macedonia, Fyr	United Arab Emirates	Guatemala
Gabon	Nepal	Malta	Yemen, Republic Of	Guyana
Gambia, The	Pakistan	Moldova		Haiti
Ghana	Palau	Montenegro		Honduras
Guinea	Papua New Guinea	Poland		Jamaica
Guinea-Bissau	Philippines	Romania		Mexico
Kenya	Samoa	Russia		Nicaragua
Lesotho	Solomon Islands	Serbia		Panama
Liberia	Sri Lanka	Slovak Republic		Paraguay
Madagascar	Thailand	Slovenia		Peru
Malawi	Timor-Leste	Tajikistan		St. Kitts
Mali	Tonga	Turkey		St. Lucia
Mauritania	Vanuatu	Turkmenistan		St. Vincent & Grens.
Mauritius	Vietnam	Ukraine		Suriname
Mozambique		Uzbekistan		Trinidad & Tobago
Namibia				Uruguay
Niger				Venezuela, Rep. Bol.
Nigeria				
Rwanda				
São Tomé & Príncipe				
Senegal				
Seychelles				
Sierra Leone				
Somalia				
South Africa				
Sudan				
Swaziland				
Tanzania				
Togo				
Uganda				
Zambia				
Zimbabwe				

Table 3: Hot Money Method - Data Issues, 2002 - 2006

Afghanistan, I.R. Of	X	Côte D'Ivoire		Kuwait		Paraguay		Turkmenistan	X
Albania		Croatia		Kyrgyz Republic		Peru		Uganda	
Algeria	X	Cyprus		Lao People's Dem.Rep	|	Philippines		Ukraine	
Angola		Czech Republic		Latvia		Poland		United Arab Emirates	X
Antigua & Barbuda	X	Djibouti		Lebanon		Qatar	X	Uruguay	
Argentina		Dominica		Lesotho		Romania		Uzbekistan	X
Armenia		Dominican Republic		Liberia	X	Russia		Vanuatu	
Aruba		Ecuador		Libya		Rwanda		Venezuela, Rep. Bol.	
Azerbaijan, Rep. Of		Egypt		Lithuania		Samoa		Vietnam	
Bahamas, The		El Salvador		Macedonia, Fyr		São Tomé & Príncipe		Yemen, Republic Of	
Bahrain, Kingdom Of		Equatorial Guinea	X	Madagascar		Saudi Arabia		Zambia	
Bangladesh		Eritrea	|	Malawi		Senegal		Zimbabwe	X
Barbados		Estonia		Malaysia		Serbia	X		
Belarus		Ethiopia		Maldives		Seychelles		***Source: Balance of Payments Statistics Database, IMF***	
Belize		Fiji		Mali		Sierra Leone		**** I - data not available for all 5 years***	
Benin		Gabon		Malta		Slovak Republic		***** X - missing data for all years***	
Bhutan	X	Gambia, The		Marshall Islands	X	Slovenia			
Bolivia		Georgia		Mauritania	|	Solomon Islands		**Number of countries**	160
Bosnia & Herzegovina		Ghana		Mauritius		Somalia	X	**Number of countries with |**	5
Botswana		Grenada		Mexico		South Africa		**Number of countries with X**	26
Brazil		Guatemala		Micronesia	X	Sri Lanka		**Number of countries with data problems**	31
Brunei Darussalam	X	Guinea		Moldova		St. Kitts			
Bulgaria		Guinea-Bissau		Mongolia		St. Lucia			
Burkina Faso	|	Guyana		Montenegro	X	St. Vincent & Grens.			
Burundi		Haiti		Morocco		Sudan			
Cambodia		Honduras		Mozambique		Suriname			
Cameroon		Hungary		Myanmar		Swaziland			
Cape Verde		India		Namibia		Syrian Arab Republic			
Central African Rep.	X	Indonesia		Nepal		Tajikistan			
Chad	X	Iran, I.R. Of	|	Nicaragua		Tanzania			
Chile		Iraq	X	Niger		Thailand			
China,P.R.: Mainland		Israel		Nigeria		Timor-Leste	X		
Colombia		Jamaica		Oman		Togo			
Comoros	X	Jordan		Pakistan		Tonga			
Congo, Dem. Rep. Of	X	Kazakhstan		Palau	X	Trinidad & Tobago	X		
Congo, Republic Of		Kenya		Panama		Tunisia			
Costa Rica		Kiribati	X	Papua New Guinea		Turkey			

Table 4: Illicit Financial Flows Through Trade Mispricing: DOTS Compared to the IPPS Method, 2003-2006

in millions of US dollars

Regions/Year	IPPS US Export Under Invoic	IPPS US Import Over-Invoic.	Regional Exports to USA	Regional Imports from USA	Regional Exports to World	Regional Imports from World	Exports Factor	Import Factor	IPPS Exp. Under-inv. in World	DOTS Exp Under-inv. in World	Discrep. Export Under-inv.	IPPS Imp. Over-inv. in World	DOTS Over-inv. in World	Discrep. Import Over-inv.	Trade Mispricing IPPS	Trade Mispricing DOTS	Discrep. bet. IPPS and DOTS
	(A)	(B)	(C)	(D)	(E)	(F)	G=(E/C)	H=(F/D)	I=A*G	(J)	K=I-J	L=B*H	(M)	N=L-M	(O)	(P)	Q=O-P
Total 2003	***43.4***	***18.2***	***486.9***	***303.3***	***2,030.00***	***1,819.00***	***4.2***	***6***	***187.7***	***163.2***	***24.5***	***117.3***	***159.6***	***-42.3***	***304.9***	***316.6***	***-11.7***
Africa	0.7	0.3	22	8.9	108	97	***4.9***	***11***	***3.4***	2.3	***1.1***	3.3	2.2	1.1	***6.7***	***4.5***	***2.2***
Asia	25	8.4	191.3	88.7	744	696	***3.9***	***7.8***	***97.2***	142.2	***-45***	65.9	97.4	-31.5	***163.1***	***239.6***	***-76.5***
Europe	2	0.5	17.8	15.9	468	440	***26.4***	***27.7***	***52.7***	5.4	***47.3***	13.8	12	1.8	***66.6***	***17.4***	***49.2***
MENA	1.1	1.8	45.8	22.2	335	241	***7.3***	***10.9***	***8.2***	0.3	***7.9***	19.4	4	15.4	***27.6***	***4.3***	***23.3***
Western Hem.	14.6	7.2	210.1	167.6	375	345	***1.8***	***2.1***	***26.1***	13	***13.1***	14.8	44	-29.2	***40.9***	***57***	***-16.1***
Total 2004	***47.5***	***17***	***597.7***	***350.9***	***2,622.00***	***2,374.00***	***4.4***	***6.8***	***216.5***	***239***	***-22.5***	***110.7***	***226***	***-115.3***	***327.2***	***459.5***	***-132.3***
Africa	1	0.5	31.5	9.5	137	129	***4.4***	***13.6***	***4.4***	6.4	***-2***	6.8	6.1	0.7	***11.1***	***12.5***	***-1.4***
Asia	26	6.3	235.5	110.5	950	924	***4***	***8.4***	***104.9***	190.8	***-85.9***	52.7	138.6	-85.9	***157.6***	***329.4***	***-171.8***
Europe	1.9	0.5	24.3	18.5	614	565	***25.3***	***30.5***	***48***	19.7	***28.3***	15.3	20.1	-4.8	***63.3***	***39.8***	***23.5***
MENA	4.2	1.5	59.6	29.5	457	339	***7.7***	***11.5***	***32.2***	1	***31.2***	17.2	14.3	2.9	***49.4***	***15.3***	***34.1***
Western Hem.	14.4	8.2	246.8	182.8	464	417	***1.9***	***2.3***	***27.1***	21.1	***6***	18.7	46.9	-28.2	***45.8***	***68***	***-22.2***
Total 2005	***50.9***	***18.1***	***722.9***	***390.5***	***3,251.00***	***3,118.00***	***4.5***	***8***	***276.5***	***240.1***	***36.4***	***140.8***	***238.6***	***-97.8***	***417.2***	***475.1***	***-57.9***
Africa	1.4	0.4	46.2	11.4	175	155	***3.8***	***13.6***	***5.3***	2.9	***2.4***	5.4	10.8	-5.4	***10.7***	***13.7***	***-3***
Asia	26.8	6.2	287	117.9	1,173.00	1,105.00	***4.1***	***9.4***	***109.5***	204.9	***-95.4***	58.1	163	-104.9	***167.6***	***367.9***	***-200.3***
Europe	3.5	0.7	25.1	20.2	767	675	***30.6***	***33.4***	***107***	2.4	***104.6***	23.4	9.8	13.6	***130.3***	***12.2***	***118.1***
MENA	3	1.8	73.2	37.4	579	398	***7.9***	***10.6***	***23.7***	10.8	***12.9***	19.1	3.9	15.2	***42.9***	***14.7***	***28.2***
Western Hem.	16.2	9	291.4	203.6	557	785	***1.9***	***3.9***	***31***	19.1	***11.9***	34.7	51.1	-16.4	***65.7***	***70.2***	***-4.5***
Total 2006	***59.1***	***19.4***	***856.3***	***443.1***	***3,995.00***	***3,434.00***	***4.7***	***7.7***	***306.1***	***222.8***	***83.3***	***148.4***	***281.2***	***-132.8***	***454.5***	***506***	***-51.5***
Africa	1.1	0.5	54.2	14	207	193	***3.8***	***13.7***	***4.2***	7.8	***-3.6***	6.9	10.4	-3.5	***11.1***	***18.2***	***-7.1***
Asia	34.7	7.2	349.1	133.1	1,463.00	1,356.00	***4.2***	***10.2***	***145.4***	193.7	***-48.3***	73.4	200.9	-127.5	***218.8***	***394.6***	***-175.8***
Europe	3.1	0.7	28.4	23.3	932	849	***32.8***	***36.4***	***101.7***	7.4	***94.3***	25.5	14.3	11.2	***127.2***	***21.7***	***105.5***
MENA	2.3	1.9	88.5	44.5	712	459	***8***	***10.3***	***18.5***	6	***12.5***	19.6	4.2	15.4	***38.1***	***10.2***	***27.9***
Western Hem.	17.9	9.1	336.2	228.3	681	577	***2***	***2.5***	***36.3***	7.9	***28.4***	23	51.4	-28.4	***59.3***	***59.3***	***0***

Source: Trade Mispricing (DOTS) estimates are based on partner country trade data, Direction of Trade Statistics, IMF. Trade Mispricing (IPPS) are based on the United States' bilateral trade with developing countries as compiled by International Trade Alert, Miami, Florida based on U.S. Customs database.

TABLE 5

Summary Estimates of Non-Normalized Illicit Financial Flows From Developing Countries and Regions, 2002 - 2006							
	(in millions of US dollars)						
	2002	2003	2004	2005	2006	Average 2002-2006	Compound cumulative growth rate
Hot Money Measure							
Developing Countries	39,880	35,603	31,645	70,173	50,639	45,588	4.9
Africa	3,293	3,347	1,385	2,056	581	2,132	-29.3
Asia	3,918	4,722	5,443	27,621	25,959	13,533	46.0
Europe	12,063	15,861	10,967	19,196	13,504	14,318	2.3
MENA	2,958	2,391	5,627	12,678	6,086	5,948	15.5
Western Hemisphere	17,648	9,282	8,224	8,624	4,509	9,657	-23.9
World Bank Residual (CED)							
Developing Countries	174,290	252,050	255,979	330,727	550,215	312,652	25.8
Africa	18,246	22,484	22,042	5,925	5,133	14,766	-22.4
Asia	31,942	25,889	16,282	80,174	148,234	60,504	35.9
Europe	58,565	91,375	96,894	80,088	172,317	99,848	24.1
MENA	20,700	53,639	72,091	128,505	175,696	90,126	53.4
Western Hemisphere	44,839	58,663	48,670	36,035	48,834	47,408	1.7
World Bank Residual (NDF)							
Developing Countries	130,219	154,713	222,216	385,729	499,245	278,424	30.8
Africa	11,477	11,612	17,147	19,489	8,231	13,591	-6.4
Asia	24,435	9,653	11,350	98,190	133,277	55,381	40.4
Europe	36,856	47,954	71,897	80,166	145,249	76,425	31.6
MENA	18,163	51,618	74,546	133,288	172,179	89,959	56.8
Western Hemisphere	39,288	33,875	47,276	54,597	40,309	43,069	0.5
Trade Mispricing (GER)							
Developing Countries	261,076	316,556	459,458	475,053	505,972	403,623	14.1
Africa	3,639	3,906	12,396	13,115	17,573	10,126	37.0
Asia	187,138	239,663	329,433	368,706	398,071	304,602	16.3
Europe	9,034	12,751	34,137	7,459	18,548	16,386	15.5
MENA	4,435	4,339	15,397	14,619	11,684	10,095	21.4
Western Hemisphere	56,830	55,897	68,095	71,154	60,096	62,414	1.1
Trade Mispricing (NET)							
Developing Countries	183,076	206,631	313,287	348,904	345,769	279,534	13.6
Africa	-8,930	-5,975	5,164	5,799	3,900	4,954	-175.9
Asia	161,745	184,511	276,985	314,891	337,552	255,137	15.9
Europe	-50,596	-60,611	-84,669	-144,555	-171,017	0	0.0
MENA	-47,780	-48,533	-46,378	-36,622	-49,362	0	0.0
Western Hemisphere	21,331	22,120	31,138	28,214	4,317	21,424	-27.3
Total Illicit Financial Flows	**2002**	**2003**	**2004**	**2005**	**2006**	**Average 2002-2006**	**annual growth rate**
Hot Money + GER	300,956	352,159	491,103	545,227	556,612	449,211	13.1
Hot Money + NET	222,957	242,234	344,932	419,078	396,409	325,122	12.2
CED + GER	435,366	568,606	715,437	805,780	1,056,187	716,275	19.4
CED + NET	357,366	458,681	569,266	679,631	895,984	592,186	20.2
NDF + GER	391,296	471,269	681,674	860,783	1,005,217	682,048	20.8
NDF + NET	313,296	361,344	535,503	734,634	845,014	557,958	22.0

Source: Global Financial Integrity (GFI) Staff Estimates.

TABLE 6

Summary Estimates of Normalized Illicit Financial Flows From Developing Countries and Regions, 2002 - 2006							
	(in millions of US dollars)						
	2002	2003	2004	2005	2006	Average 2002-2006	Compound cumulative growth rate
Normalized Hot Money Measure (three correct signs)							
Developing Countries	34,007	32,748	30,807	48,358	29,046	34,993	-3.1
Africa	2,589	2,614	1,323	1,678	361	1,713	-32.5
Asia	3,572	4,669	4,726	10,975	8,288	6,446	18.3
Europe	11,707	15,847	10,967	19,146	10,428	13,619	-2.3
MENA	2,902	1,691	5,582	8,753	5,946	4,975	15.4
Western Hemisphere	13,238	7,927	8,210	7,806	4,022	8,241	-21.2
Normalized Hot Money Measure (three correct signs and IFF/export FOB =or >10 %)							
Developing Countries	3,761	2,692	6,747	7,327	5,458	5,197	7.7
Africa	1,750	748	602	910	105	823	-43.1
Asia	13	14	33	20	8	18	-10.2
Europe	624	0	1,183	1,226	1,308	868	20.3
MENA	0	28	2,902	4,173	3,466	2,114	0.0
Western Hemisphere	1,374	1,902	2,028	998	571	1,374	-16.1
Normalized Hot Money Measure (three correct signs and IFF/export FOB =or >5 %)							
Developing Countries	9,549	7,123	12,101	15,924	13,931	11,725	7.8
Africa	2,337	1,518	1,204	1,579	334	1,394	-32.2
Asia	381	93	200	1,275	1,243	639	26.7
Europe	1,396	1,851	2,232	3,879	3,970	2,665	23.3
MENA	656	767	3,889	4,838	4,543	2,939	47.3
Western Hemisphere	4,780	2,893	4,576	4,353	3,841	4,089	-4.3
World Bank Residual (CED) (three correct signs)							
Developing Countries	166,027	246,702	253,860	322,562	538,453	305,520	26.5
Africa	10,573	17,848	20,469	5,925	5,051	11,973	-13.7
Asia	31,861	25,717	16,255	79,852	143,656	59,468	35.1
Europe	58,565	91,123	96,894	74,277	172,005	98,573	24.0
MENA	20,466	53,639	71,765	126,490	169,041	88,280	52.5
Western Hemisphere	44,562	58,374	48,477	36,018	48,699	47,226	1.8
World Bank Residual (CED) (three correct signs and IFF/export FOB > or =10 %)							
Developing Countries	129,238	212,690	231,209	242,756	387,406	240,660	24.6
Africa	10,319	17,685	20,232	5,802	5,046	11,817	-13.3
Asia	7,686	8,493	6,175	4,388	9,083	7,165	3.4
Europe	57,961	90,969	96,813	73,368	171,712	98,165	24.3
MENA	19,941	52,183	71,582	123,218	162,162	85,817	52.1
Western Hemisphere	33,329	43,359	36,408	35,980	39,403	37,696	3.4
World Bank Residual (CED) (three correct signs and IFF/export FOB > or =5 %)							
Developing Countries	162,924	241,540	241,453	321,225	531,716	299,772	26.7
Africa	10,573	17,848	20,469	5,925	5,051	11,973	-13.7
Asia	30,596	23,892	11,901	79,425	142,563	57,675	36.0
Europe	57,983	91,031	96,894	73,368	171,712	98,198	24.3
MENA	20,466	53,639	71,765	126,490	169,041	88,280	52.5
Western Hemisphere	43,306	55,130	40,424	36,018	43,349	43,645	0.0
World Bank Residual (NDF) (three correct signs)							
Developing Countries	127,664	153,557	220,280	368,911	481,779	270,438	30.4
Africa	9,111	10,866	16,600	19,489	6,057	12,425	-7.8
Asia	24,349	9,540	11,328	89,222	126,798	52,247	39.1
Europe	36,856	47,740	70,837	74,355	141,297	74,217	30.8
MENA	18,124	51,618	74,296	131,273	167,431	88,549	56.0
Western Hemisphere	39,223	33,794	47,219	54,571	40,196	43,001	0.5
World Bank Residual (NDF) (three correct signs and IFF/export FOB > or =10 %)							

TABLE 6

Summary Estimates of Normalized Illicit Financial Flows From Developing Countries and Regions, 2002 - 2006							
	(in millions of US dollars)						
	2002	2003	2004	2005	2006	Average 2002-2006	Compound cumulative growth rate
Developing Countries	98,324	127,418	188,105	275,647	344,101	206,719	28.5
Africa	8,594	10,368	16,007	19,104	5,678	11,950	-8.0
Asia	3,589	3,420	3,977	6,770	8,590	5,269	19.1
Europe	36,229	46,111	69,364	73,458	136,507	72,334	30.4
MENA	16,693	46,179	67,715	126,067	158,416	83,014	56.8
Western Hemisphere	33,220	21,340	31,042	50,248	34,910	34,152	1.0
World Bank Residual (NDF) (three correct signs and IFF/export FOB > or =5 %)							
Developing Countries	125,799	150,758	207,198	365,994	478,097	265,569	30.6
Africa	8,859	10,595	16,369	19,270	5,811	12,181	-8.1
Asia	23,269	7,721	6,821	87,940	126,395	50,429	40.3
Europe	36,323	47,740	70,828	73,458	141,192	73,908	31.2
MENA	18,124	51,618	74,090	130,755	165,296	87,977	55.6
Western Hemisphere	39,223	33,084	39,091	54,571	39,403	41,074	0.1
Trade mispricing GER (three correct signs)							
Developing Countries	260,208	315,403	458,627	466,550	494,757	399,109	13.7
Africa	3,528	3,598	12,396	13,105	17,573	10,040	37.9
Asia	187,138	239,663	329,433	368,706	397,188	304,426	16.2
Europe	9,034	12,751	33,483	7,444	16,327	15,808	12.6
MENA	3,678	3,495	15,219	6,141	3,573	6,421	-0.6
Western Hemisphere	56,830	55,896	68,095	71,154	60,096	62,414	1.1
Trade mispricing GER (three correct signs and IFF/export FOB > or =10 %)							
Developing Countries	243,262	295,577	414,734	432,177	471,179	371,386	14.1
Africa	2,393	2,912	5,455	4,390	5,936	4,217	19.9
Asia	185,218	236,611	324,547	359,586	390,272	299,247	16.1
Europe	2,016	2,802	14,101	4,869	14,447	7,647	48.3
MENA	2,185	2,763	13,976	2,092	2,623	4,728	3.7
Western Hemisphere	51,450	50,490	56,656	61,240	57,900	55,547	2.4
Trade mispricing GER (three correct signs and IFF/export FOB > or =5 %)							
Developing Countries	247,994	301,402	427,536	449,433	484,399	382,153	14.3
Africa	3,354	3,281	11,855	12,648	17,029	9,633	38.4
Asia	185,619	237,421	325,470	360,073	390,272	299,771	16.0
Europe	3,141	4,078	14,550	5,465	14,513	8,350	35.8
MENA	2,463	3,203	14,872	5,720	3,094	5,870	4.7
Western Hemisphere	53,416	53,419	60,788	65,527	59,491	58,528	2.2
Trade mispricing NET (three correct signs)							
Developing Countries	199,424	243,821	350,658	390,837	394,008	315,750	14.6
Africa	-5,353	-2,395	9,837	11,303	14,764	11,968	-240.2
Asia	172,187	206,481	298,925	341,296	361,170	276,012	16.0
Europe	324	242	287	-5,545	-9,484	284	-408.1
MENA	713	1,770	-1,916	878	1,095	1,114	11.3
Western Hemisphere	31,552	37,724	43,524	42,905	26,463	36,434	-3.5
Trade mispricing net (three correct signs and IFF/export FOB > or =10 %)							
Developing Countries	197,722	229,356	320,744	351,413	372,348	294,317	13.5
Africa	604	-474	4,281	3,758	4,489	3,283	65.1
Asia	163,786	195,879	277,636	309,930	337,246	256,896	15.5
Europe	24	-68	66	66	594	188	122.7
MENA	0	0	0	0	0	0	0.0
Western Hemisphere	33,308	34,019	38,761	37,659	30,019	34,753	-2.1
Trade mispricing net (three correct signs and IFF/export FOB > or =5 %)							
Developing Countries	200,538	238,135	346,151	384,572	400,147	313,909	14.8

TABLE 6

Summary Estimates of Normalized Illicit Financial Flows From Developing Countries and Regions, 2002 - 2006							
	(in millions of US dollars)						
	2002	2003	2004	2005	2006	Average 2002-2006	Compound cumulative growth rate
Africa	-5,447	-2,523	9,550	11,115	14,553	11,739	-238.8
Asia	171,810	204,952	295,013	332,716	354,312	271,761	15.6
Europe	34	25	-26	186	494	185	95.2
MENA	87	111	146	166	204	143	18.8
Western Hemisphere	34,055	35,570	41,468	40,389	30,585	36,413	-2.1
Total Illicit Financial Flows	**2002**	**2003**	**2004**	**2005**	**2006**	**Average 2002-2006**	**annual growth rate**
Hot Money (10%) + GER (10%)	247,023	298,270	421,481	439,504	476,636	376,583	14.0
Hot Money (5%) + GER (5%)	257,543	308,524	439,637	465,356	498,331	393,878	14.1
GER (10%) + CED (10%)	372,500	508,267	645,943	674,933	858,585	612,046	18.2
GER (5%) + CED (5%)	410,917	542,942	668,990	770,658	1,016,115	681,925	19.8
GER (10%)+ NDF (10%)	341,586	422,995	602,839	707,824	815,280	578,105	19.0
GER (5%) + NDF (5%)	373,792	452,159	634,734	815,427	962,496	647,722	20.8
Hot Money (10%) + NET (10%)	201,483	232,048	327,491	358,740	377,806	299,514	13.4
Hot Money (5%) + NET (5%)	210,088	245,257	358,252	400,496	414,079	325,634	14.5
NET (10%) + CED (10%)	326,960	442,046	551,954	594,169	759,755	534,977	18.4
NET (5%) + CED (5%)	363,462	479,675	587,604	705,798	931,863	613,681	20.7
NET (10%) + NDF (10%)	296,046	356,774	508,850	627,060	716,449	501,036	19.3
NET (5%) + NDF (5%)	326,337	388,893	553,349	750,566	878,244	579,478	21.9

Source: Global Financial Integrity (GFI) Staff Estimates.

TABLE 7

Summary Estimates of Non-normalized Illicit Financial Flows From Developing Countries and Regions, 2002 - 2006								
	(in millions of US dollars)							
	2002	2003	2004	2005	2006	Average 2002 - 2006	Average distribution 2002 - 2006	Compound annual growth rate
Non-normalized illicit flows (GER + CED)								
Developing Countries	435,366	568,606	715,437	805,780	1,056,187	716,275	100.0%	19.4
Africa	21,885	26,390	34,437	19,040	22,706	24,892	3.5%	0.7
Asia	219,080	265,552	345,716	448,879	546,305	365,106	51.0%	20.1
Europe	67,599	104,126	131,031	87,547	190,866	116,234	16.2%	23.1
MENA	25,134	57,978	87,488	143,124	187,380	100,221	14.0%	49.4
Western Hemisphere	101,669	114,561	116,766	107,189	108,929	109,823	15.3%	1.4
Summary Estimates of Normalized Illicit Financial Flows From Developing Countries and Regions, 2002 - 2006								
	(in millions of US dollars)							
	2002	2003	2004	2005	2006	Average 2002 - 2006	Average distribution 2002 - 2006	Compound annual growth rate
Normalized illicit flows (GER + CED) (three correct signs and IFF/export FOB =or >10 %)								
Developing Countries	372,500	508,267	645,943	674,933	858,585	612,046	100.0%	18.2
Africa	12,712	20,598	25,687	10,192	10,982	16,034	2.6%	-2.9
Asia	192,905	245,104	330,722	363,974	399,355	306,412	50.1%	15.7
Europe	59,978	93,771	110,913	78,237	186,159	105,812	17.3%	25.4
MENA	22,126	54,946	85,558	125,310	164,785	90,545	14.8%	49.4
Western Hemisphere	84,779	93,849	93,063	97,220	97,303	93,243	15.2%	2.8

Source: Global Financial Integrity (GFI) Staff Estimates.

Table 8: Non-normalized Hot Money Estimates of Illicit Financial Flows, 2002-06

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Afghanistan, I.R. Of	0	0	0	0	0	0	0
Albania	108	147	115	204	237	0	0
Algeria	0	0	0	0	0	0	0
Angola	150	-388	277	-378	290	-766	-383
Antigua & Barbuda	0	0	0	0	0	0	0
Argentina	-1847	-1350	580	283	1673	-3197	-1598
Armenia	-4	-2	-1	3	-4	-11	-3
Aruba	13	24	4	8	2	0	0
Azerbaijan, Rep. Of	-87	-112	-50	-126	-256	-630	-126
Bahamas, The	103	85	180	97	348	0	0
Bahrain, Kingdom Of	1218	-700	83	37	8	-700	-700
Bangladesh	-349	81	-25	-644	-604	-1622	-405
Barbados	25	34	45	18	0	0	0
Belarus	-294	-3	274	112	-250	-547	-182
Belize	-9	-33	-2	1	4	-43	-14
Benin	2	182	-10	9	0	-10	-10
Bhutan	0	0	0	0	0	0	0
Bolivia	-640	-174	-625	-374	-71	-1885	-377
Bosnia & Herzegovina	98	323	428	470	559	0	0
Botswana	106	66	-122	-319	-142	-583	-194
Brazil	-154	-933	-2145	-1096	968	-4327	-1082
Brunei Darussalam	0	0	0	0	0	0	0
Bulgaria	-716	-889	371	-772	254	-2377	-792
Burkina Faso	0	0	0	0	0	0	0
Burundi	2	-14	-21	-80	5	-115	-38
Cambodia	2	-40	-46	5	-46	-132	-44
Cameroon	-130	467	201	0	0	-130	-130
Cape Verde	-8	-12	10	63	-41	-61	-20
Central African Rep.	0	0	0	0	0	0	0
Chad	0	0	0	0	0	0	0
Chile	-952	-724	-270	-1268	1537	-3215	-804
China,P.R.: Mainland	7504	17985	26834	-16441	-13048	-29488	-14744
Colombia	192	134	241	379	279	0	0
Comoros	0	0	0	0	0	0	0
Congo, Dem. Rep. Of	0	0	0	0	0	0	0
Congo, Republic Of	-220	-116	-93	326	0	-429	-143
Costa Rica	-51	35	64	156	293	-51	-51
Côte D'Ivoire	-26	-888	27	-58	52	-972	-324
Croatia	-624	133	-1183	-1226	-1308	-4341	-1085
Cyprus	-77	21	152	165	-182	-259	-130
Czech Republic	266	611	-422	-757	-775	-1954	-651
Djibouti	9	1	-16	-45	-58	-119	-40
Dominica	16	1	11	11	0	0	0
Dominican Republic	-139	-1568	-987	-379	-500	-3573	-715

Table 8: Non-normalized Hot Money Estimates of Illicit Financial Flows, 2002-06

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Ecuador	-157	163	681	477	424	-157	-157
Egypt	1906	1575	-45	-2427	634	-2472	-1236
El Salvador	-615	-143	352	-52	-187	-998	-249
Equatorial Guinea	0	0	0	0	0	0	0
Eritrea	0	0	0	0	0	0	0
Estonia	59	-39	14	-11	-78	-128	-43
Ethiopia	-915	-390	-354	486	1161	-1659	-553
Fiji	-90	10	308	305	370	-90	-90
Gabon	-125	-260	-357	0	0	-742	-247
Gambia, The	0	3	-9	-54	-6	-69	-23
Georgia	7	-14	1	19	58	-14	-14
Ghana	57	-47	115	26	174	-47	-47
Grenada	24	-6	8	-14	0	-20	-10
Guatemala	-65	-61	-25	87	-88	-239	-60
Guinea	143	-157	69	0	0	-157	-157
Guinea-Bissau	-3	6	-4	0	0	-7	-4
Guyana	-1	-20	-43	-68	-119	-252	-50
Haiti	41	121	48	-59	-42	-100	-50
Honduras	61	-55	42	-53	-93	-201	-67
Hungary	145	226	-1773	-2315	-3366	-7454	-2485
India	-190	471	637	769	-4623	-4813	-2407
Indonesia	-1763	-3510	-3094	-136	2460	-8503	-2126
Iran, I.R. Of	0	0	0	0	0	0	0
Iraq	0	0	0	0	0	0	0
Israel	2717	344	724	3730	-140	-140	-140
Jamaica	-61	28	-14	46	20	-75	-38
Jordan	-56	149	192	842	294	-56	-56
Kazakhstan	320	-932	-1016	-1804	-2397	-6149	-1537
Kenya	193	-277	-62	-237	265	-575	-192
Kiribati	0	0	0	0	0	0	0
Kuwait	-1869	-579	-1136	-3341	-293	-7217	-1443
Kyrgyz Republic	10	123	97	303	381	0	0
Lao People's Dem.Rep	0	0	0	0	0	0	0
Latvia	-71	-13	8	-296	120	-380	-127
Lebanon	4719	-28	-2902	-4173	-3466	-10569	-2642
Lesotho	-98	-57	-17	81	142	-172	-57
Liberia	0	0	0	0	0	0	0
Libya	362	1890	1733	-1497	2008	-1497	-1497
Lithuania	79	181	192	-49	-226	-275	-138
Macedonia, Fyr	-30	-26	8	-13	10	-69	-23
Madagascar	29	67	-35	91	0	-35	-35
Malawi	157	0	0	0	0	0	0
Malaysia	-391	-4	1880	-6555	-6731	-13680	-3420
Maldives	11	12	19	-8	133	-8	-8

Table 8: Non-normalized Hot Money Estimates of Illicit Financial Flows, 2002-06

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Mali	-6	45	-26	-29	0	-62	-21
Malta	-56	24	79	-55	-118	-228	-76
Marshall Islands	0	0	0	0	0	0	0
Mauritania	0	0	0	0	0	0	0
Mauritius	9	40	78	19	413	0	0
Mexico	-7287	-3262	-1193	-1036	3287	-12778	-3195
Micronesia	0	0	0	0	0	0	0
Moldova	-24	47	101	178	105	-24	-24
Mongolia	14	-6	1	-75	-8	-89	-30
Montenegro	0	0	0	0	0	0	0
Morocco	-182	-297	-282	-414	-498	-1672	-334
Mozambique	-60	208	216	281	144	-60	-60
Myanmar	-19	-79	-143	-610	-632	-1483	-297
Namibia	16	-89	115	164	134	-89	-89
Nepal	-67	310	416	139	109	-67	-67
Nicaragua	-332	-119	-416	-37	127	-903	-226
Niger	-9	-15	116	121	0	-23	-12
Nigeria	782	5614	4676	9758	0	0	0
Oman	-656	-739	-987	-666	-1077	-4124	-825
Pakistan	974	-52	685	-198	742	-251	-125
Palau	0	0	0	0	0	0	0
Panama	45	133	119	-554	56	-554	-554
Papua New Guinea	91	40	26	47	0	0	0
Paraguay	-263	-41	95	-208	212	-511	-170
Peru	249	801	236	362	-445	-445	-445
Philippines	33	-902	-282	-1803	473	-2987	-996
Poland	-1516	-2835	1782	-3369	-643	-8363	-2091
Qatar	0	0	0	0	0	0	0
Romania	-856	-289	1167	612	-908	-2053	-684
Russia	-6502	-9713	-6436	-8326	6027	-30976	-7744
Rwanda	-8	23	-9	26	87	-17	-8
Samoa	0	0	-12	-7	-3	-22	-7
São Tomé & Príncipe	1	2	0	0	0	0	0
Saudi Arabia	0	0	0	0	0	0	0
Senegal	31	11	16	0	0	0	0
Serbia	0	0	0	0	0	0	0
Seychelles	-10	-5	1	2	2	-15	-7
Sierra Leone	-16	-50	-54	-59	119	-179	-45
Slovak Republic	298	27	0	0	0	0	0
Slovenia	-255	150	17	181	-270	-525	-262
Solomon Islands	55	35	-6	54	74	-6	-6
Somalia	0	0	0	0	0	0	0
South Africa	-484	3466	5623	3084	5537	-484	-484
Sri Lanka	136	-114	-189	-73	-261	-636	-159

Table 8: Non-normalized Hot Money Estimates of Illicit Financial Flows, 2002-06

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
St. Kitts	2	5	14	6	0	0	0
St. Lucia	-2	10	9	-17	0	-19	-10
St. Vincent & Grens.	9	16	27	6	0	0	0
Sudan	479	-14	212	727	-220	-234	-117
Suriname	144	194	218	169	145	0	0
Swaziland	62	-92	97	-12	-28	-132	-44
Syrian Arab Republic	-160	383	-256	-137	-588	-1142	-285
Tajikistan	-56	-30	-33	-76	-265	-459	-92
Tanzania	-811	-281	-148	-672	874	-1912	-478
Thailand	1386	132	-710	717	1564	-710	-710
Timor-Leste	0	0	0	0	0	0	0
Togo	5	-10	14	9	0	-10	-10
Tonga	0	-2	-6	-6	-4	-18	-4
Trinidad & Tobago	0	0	0	0	0	0	0
Tunisia	-35	-47	-18	-23	-24	-149	-30
Turkey	113	4931	2109	2092	-2399	-2399	-2399
Turkmenistan	0	0	0	0	0	0	0
Uganda	9	-8	-4	2	41	-12	-6
Ukraine	-895	-965	-54	156	-62	-1976	-494
United Arab Emirates	0	0	0	0	0	0	0
Uruguay	-2292	1009	378	-173	36	-2465	-1233
Uzbekistan	0	0	0	0	0	0	0
Vanuatu	-13	-12	-15	-7	5	-48	-12
Venezuela, Rep. Bol.	-2781	-795	-2503	-3235	-2964	-12279	-2456
Vietnam	-1038	798	-915	-1059	0	-3011	-1004
Yemen, Republic Of	43	156	53	213	180	0	0
Zambia	-363	-178	-44	-112	-87	-785	-157
Zimbabwe	0	0	0	0	0	0	0

Source: IMF Balance Payment, International Finance Statistics, Direction of Trade Statistics,
World Economic Outlook databases, as well as World Bank Global Development Finance database.

Table 9: Normalized Hot Money Estimates of Illicit Financial Flows, 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Afghanistan, I.R. Of	0	0	0	0	0	0	0
Albania	0	0	0	0	0	0	0
Algeria	0	0	0	0	0	0	0
Angola	0	0	0	0	0	0	0
Antigua & Barbuda	0	0	0	0	0	0	0
Argentina	0	0	0	0	0	0	0
Armenia	0	0	0	0	0	0	0
Aruba	0	0	0	0	0	0	0
Azerbaijan, Rep. Of	0	0	0	0	0	0	0
Bahamas, The	0	0	0	0	0	0	0
Bahrain, Kingdom Of	0	0	0	0	0	0	0
Bangladesh	0	0	0	0	0	0	0
Barbados	0	0	0	0	0	0	0
Belarus	0	0	0	0	0	0	0
Belize	0	0	0	0	0	0	0
Benin	0	0	0	0	0	0	0
Bhutan	0	0	0	0	0	0	0
Bolivia	-640	-174	-625	-374	-71	-1885	-377
Bosnia & Herzegovina	0	0	0	0	0	0	0
Botswana	0	0	0	0	0	0	0
Brazil	0	0	0	0	0	0	0
Brunei Darussalam	0	0	0	0	0	0	0
Bulgaria	0	0	0	0	0	0	0
Burkina Faso	0	0	0	0	0	0	0
Burundi	2	-14	-21	-80	5	-115	-38
Cambodia	0	0	0	0	0	0	0
Cameroon	0	0	0	0	0	0	0
Cape Verde	-8	-12	10	63	-41	-61	-20
Central African Rep.	0	0	0	0	0	0	0
Chad	0	0	0	0	0	0	0
Chile	0	0	0	0	0	0	0
China,P.R.: Mainland	0	0	0	0	0	0	0
Colombia	0	0	0	0	0	0	0
Comoros	0	0	0	0	0	0	0
Congo, Dem. Rep. Of	0	0	0	0	0	0	0
Congo, Republic Of	0	0	0	0	0	0	0
Costa Rica	0	0	0	0	0	0	0
Côte D'Ivoire	0	0	0	0	0	0	0
Croatia	-624	133	-1183	-1226	-1308	-4341	-1085
Cyprus	0	0	0	0	0	0	0
Czech Republic	0	0	0	0	0	0	0
Djibouti	9	1	-16	-45	-58	-119	-40
Dominica	0	0	0	0	0	0	0
Dominican Republic	-139	-1568	-987	-379	-500	-3573	-715

Table 9: Normalized Hot Money Estimates of Illicit Financial Flows, 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Ecuador	0	0	0	0	0	0	0
Egypt	0	0	0	0	0	0	0
El Salvador	0	0	0	0	0	0	0
Equatorial Guinea	0	0	0	0	0	0	0
Eritrea	0	0	0	0	0	0	0
Estonia	0	0	0	0	0	0	0
Ethiopia	-915	-390	-354	486	1161	-1659	-553
Fiji	0	0	0	0	0	0	0
Gabon	0	0	0	0	0	0	0
Gambia, The	0	3	-9	-54	-6	-69	-23
Georgia	0	0	0	0	0	0	0
Ghana	0	0	0	0	0	0	0
Grenada	0	0	0	0	0	0	0
Guatemala	0	0	0	0	0	0	0
Guinea	0	0	0	0	0	0	0
Guinea-Bissau	0	0	0	0	0	0	0
Guyana	0	0	0	0	0	0	0
Haiti	0	0	0	0	0	0	0
Honduras	0	0	0	0	0	0	0
Hungary	0	0	0	0	0	0	0
India	0	0	0	0	0	0	0
Indonesia	0	0	0	0	0	0	0
Iran, I.R. Of	0	0	0	0	0	0	0
Iraq	0	0	0	0	0	0	0
Israel	0	0	0	0	0	0	0
Jamaica	0	0	0	0	0	0	0
Jordan	0	0	0	0	0	0	0
Kazakhstan	0	0	0	0	0	0	0
Kenya	0	0	0	0	0	0	0
Kiribati	0	0	0	0	0	0	0
Kuwait	0	0	0	0	0	0	0
Kyrgyz Republic	0	0	0	0	0	0	0
Lao People's Dem.Rep	0	0	0	0	0	0	0
Latvia	0	0	0	0	0	0	0
Lebanon	4719	-28	-2902	-4173	-3466	-10569	-2642
Lesotho	0	0	0	0	0	0	0
Liberia	0	0	0	0	0	0	0
Libya	0	0	0	0	0	0	0
Lithuania	0	0	0	0	0	0	0
Macedonia, Fyr	0	0	0	0	0	0	0
Madagascar	0	0	0	0	0	0	0
Malawi	0	0	0	0	0	0	0
Malaysia	0	0	0	0	0	0	0
Maldives	0	0	0	0	0	0	0

Table 9: Normalized Hot Money Estimates of Illicit Financial Flows, 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Mali	0	0	0	0	0	0	0
Malta	0	0	0	0	0	0	0
Marshall Islands	0	0	0	0	0	0	0
Mauritania	0	0	0	0	0	0	0
Mauritius	0	0	0	0	0	0	0
Mexico	0	0	0	0	0	0	0
Micronesia	0	0	0	0	0	0	0
Moldova	0	0	0	0	0	0	0
Mongolia	0	0	0	0	0	0	0
Montenegro	0	0	0	0	0	0	0
Morocco	0	0	0	0	0	0	0
Mozambique	0	0	0	0	0	0	0
Myanmar	0	0	0	0	0	0	0
Namibia	0	0	0	0	0	0	0
Nepal	0	0	0	0	0	0	0
Nicaragua	-332	-119	-416	-37	127	-903	-226
Niger	0	0	0	0	0	0	0
Nigeria	0	0	0	0	0	0	0
Oman	0	0	0	0	0	0	0
Pakistan	0	0	0	0	0	0	0
Palau	0	0	0	0	0	0	0
Panama	0	0	0	0	0	0	0
Papua New Guinea	0	0	0	0	0	0	0
Paraguay	-263	-41	95	-208	212	-511	-170
Peru	0	0	0	0	0	0	0
Philippines	0	0	0	0	0	0	0
Poland	0	0	0	0	0	0	0
Qatar	0	0	0	0	0	0	0
Romania	0	0	0	0	0	0	0
Russia	0	0	0	0	0	0	0
Rwanda	0	0	0	0	0	0	0
Samoa	0	0	-12	-7	-3	-22	-7
São Tomé & Príncipe	0	0	0	0	0	0	0
Saudi Arabia	0	0	0	0	0	0	0
Senegal	0	0	0	0	0	0	0
Serbia	0	0	0	0	0	0	0
Seychelles	0	0	0	0	0	0	0
Sierra Leone	-16	-50	-54	-59	119	-179	-45
Slovak Republic	0	0	0	0	0	0	0
Slovenia	0	0	0	0	0	0	0
Solomon Islands	0	0	0	0	0	0	0
Somalia	0	0	0	0	0	0	0
South Africa	0	0	0	0	0	0	0
Sri Lanka	0	0	0	0	0	0	0

Table 9: Normalized Hot Money Estimates of Illicit Financial Flows, 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
St. Kitts	0	0	0	0	0	0	0
St. Lucia	0	0	0	0	0	0	0
St. Vincent & Grens.	0	0	0	0	0	0	0
Sudan	0	0	0	0	0	0	0
Suriname	0	0	0	0	0	0	0
Swaziland	0	0	0	0	0	0	0
Syrian Arab Republic	0	0	0	0	0	0	0
Tajikistan	0	0	0	0	0	0	0
Tanzania	-811	-281	-148	-672	874	-1912	-478
Thailand	0	0	0	0	0	0	0
Timor-Leste	0	0	0	0	0	0	0
Togo	0	0	0	0	0	0	0
Tonga	0	-2	-6	-6	-4	-18	-4
Trinidad & Tobago	0	0	0	0	0	0	0
Tunisia	0	0	0	0	0	0	0
Turkey	0	0	0	0	0	0	0
Turkmenistan	0	0	0	0	0	0	0
Uganda	0	0	0	0	0	0	0
Ukraine	0	0	0	0	0	0	0
United Arab Emirates	0	0	0	0	0	0	0
Uruguay	0	0	0	0	0	0	0
Uzbekistan	0	0	0	0	0	0	0
Vanuatu	-13	-12	-15	-7	5	-48	-12
Venezuela, Rep. Bol.	0	0	0	0	0	0	0
Vietnam	0	0	0	0	0	0	0
Yemen, Republic Of	0	0	0	0	0	0	0
Zambia	0	0	0	0	0	0	0
Zimbabwe	0	0	0	0	0	0	0

*Normalization is a two stage process. At the first stage, only countries with at least three years of capital flight out of five years pass through filtration to the second stage. During second stage, only those countries where capital flight exceeds 10 percent of their exports (f.o.b) are selected and included in the table.

Source: IMF Balance Payment, International Finance Statistics, Direction of Trade Statistics,
World Economic Outlook databases, as well as World Bank Global Development Finance database.

Table 10: Non-normalized Estimates of World Bank Residual Model (CED), 2002-06

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Afghanistan, I.R. Of	0	0	0	0	0	0	0
Albania	-279	38	-256	-169	-124	38	38
Algeria	0	0	0	0	0	0	0
Angola	2156	2456	1964	4232	2841	13650	2730
Antigua & Barbuda	0	0	0	0	0	0	0
Argentina	12155	20619	3522	-31896	-3359	36297	12099
Armenia	212	268	303	7	179	969	194
Aruba	-39	33	154	-57	485	671	224
Azerbaijan, Rep. Of	505	496	-273	361	1197	2559	640
Bahamas, The	-331	-393	-217	-99	-772	0	0
Bahrain, Kingdom Of	-57	-68	143	1093	3300	4537	1512
Bangladesh	2173	1238	872	-247	2474	6757	1689
Barbados	-127	-179	-196	-356	0	0	0
Belarus	581	92	-489	909	294	1876	469
Belize	7	43	-116	32	55	136	34
Benin	120	-301	-8	-346	0	120	120
Bhutan	0	0	0	0	0	0	0
Bolivia	938	911	663	637	-1334	3149	787
Bosnia & Herzegovina	-332	-126	-579	-1736	-745	0	0
Botswana	545	528	724	531	656	2984	597
Brazil	8056	9490	2878	-9988	-19521	20425	6808
Brunei Darussalam	1725	2370	2908	4222	5272	16497	3299
Bulgaria	953	1991	1650	302	4975	9871	1974
Burkina Faso	0	0	0	0	0	0	0
Burundi	87	81	27	-111	-62	195	65
Cambodia	146	86	123	12	8	376	75
Cameroon	275	989	-983	0	0	1264	632
Cape Verde	-5	22	-64	-51	82	104	52
Central African Rep.	0	0	0	0	0	0	0
Chad	0	0	0	0	0	0	0
Chile	4030	3881	8858	6106	11929	34804	6961
China,P.R.: Mainland	8307	-1162	-45113	55208	104581	168096	56032
Colombia	-3193	3791	409	1718	4319	10237	2559
Comoros	0	0	0	0	0	0	0
Congo, Dem. Rep. Of	0	0	0	0	0	0	0
Congo, Republic Of	1045	1219	1822	203	0	4289	1072
Costa Rica	-211	-83	174	14	-103	188	94
Côte D'Ivoire	0	0	0	0	0	0	0
Croatia	1960	7439	5969	-4514	5228	20597	5149
Cyprus	-213	214	-791	-1059	-1453	214	214
Czech Republic	-2598	-4415	-2072	5811	-84	5811	5811
Djibouti	88	86	79	45	109	408	82
Dominica	-26	34	-10	-91	-55	34	34
Dominican Republic	1762	2397	2074	-10	1032	7264	1816

Table 10: Non-normalized Estimates of World Bank Residual Model (CED), 2002-06

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Ecuador	1550	711	371	38	1420	4090	818
Egypt	1700	4328	6063	-14	8165	20256	5064
El Salvador	881	1555	34	-56	177	2647	662
Equatorial Guinea	0	0	0	0	0	0	0
Eritrea	0	0	0	0	0	0	0
Estonia	-682	-522	-1354	-1813	-2883	0	0
Ethiopia	1134	686	-751	-1356	-5365	1821	910
Fiji	81	-15	-247	-86	-370	81	81
Gabon	408	1165	1415	0	0	2989	996
Gambia, The	0	72	32	-5	53	157	52
Georgia	22	62	81	-432	-469	165	55
Ghana	490	368	-1125	-1620	-4332	859	429
Grenada	24	-33	19	-110	-27	44	22
Guatemala	-1002	-809	-1216	-1642	-1369	0	0
Guinea	53	81	-69	0	0	134	67
Guinea-Bissau	14	11	10	0	0	35	12
Guyana	30	37	-69	-191	-157	68	34
Haiti	-59	62	-143	-1	135	196	98
Honduras	212	156	-69	-911	-1252	368	184
Hungary	4483	6009	8882	-4405	34466	53840	13460
India	-1311	-6613	-7753	-19456	4578	4578	4578
Indonesia	2970	7090	3485	-2487	6390	19936	4984
Iran, I.R. Of	0	0	0	0	0	0	0
Iraq	0	0	0	-7247	-4603	0	0
Israel	525	1456	184	3272	6880	12315	2463
Jamaica	-288	433	178	-643	820	1432	477
Jordan	319	744	534	-1142	710	2307	577
Kazakhstan	3698	5193	11820	13569	24392	58672	11734
Kenya	508	540	-77	-1012	-962	1048	524
Kiribati	0	0	0	0	0	0	0
Kuwait	5315	16141	15031	28780	39932	105199	21040
Kyrgyz Republic	65	112	82	-157	84	342	86
Lao People's Dem.Rep	0	0	0	0	0	0	0
Latvia	1139	1259	2274	-134	3281	7952	1988
Lebanon	887	-5507	2048	-346	2923	5858	1953
Lesotho	125	93	96	-154	-40	314	105
Liberia	0	0	60	-241	-5	60	60
Libya	-170	-1644	-1353	2015	4313	6329	3164
Lithuania	429	-358	1918	261	3221	5828	1457
Macedonia, Fyr	50	99	-89	-212	370	519	173
Madagascar	-90	100	-1892	-802	0	100	100
Malawi	2	0	0	0	0	2	2
Malaysia	8015	4589	-809	17179	19190	48973	12243
Maldives	-36	-31	-83	-230	-240	0	0

Table 10: Non-normalized Estimates of World Bank Residual Model (CED), 2002-06

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Mali	-148	-69	57	-630	-1752	57	57
Malta	-583	132	260	-36	1236	1628	543
Marshall Islands	0	0	0	0	0	0	0
Mauritania	0	0	0	0	0	0	0
Mauritius	14	682	-357	-281	-523	695	348
Mexico	1256	3245	8053	-935	5350	17903	4476
Micronesia	0	0	0	0	0	0	0
Moldova	201	66	-42	-50	78	345	115
Mongolia	66	566	168	29	294	1122	224
Montenegro	0	0	0	0	0	0	0
Morocco	520	2536	-1350	-477	3271	6326	2109
Mozambique	-459	-1780	397	-755	-2021	397	397
Myanmar	1116	929	152	81	841	3118	624
Namibia	262	531	706	700	1244	3441	688
Nepal	532	149	116	-176	26	823	206
Nicaragua	-535	-89	-2324	-501	-1330	0	0
Niger	33	109	-274	-305	-1519	142	71
Nigeria	5135	9834	12366	-847	0	27335	9112
Oman	178	199	-158	2356	3674	6406	1602
Pakistan	2055	3240	1780	-3999	-1395	7075	2358
Palau	0	0	0	0	0	0	0
Panama	-79	943	1103	-263	2055	4102	1367
Papua New Guinea	-207	171	-240	322	0	493	247
Paraguay	378	76	375	-428	209	1038	260
Peru	370	1569	768	-166	2526	5233	1308
Philippines	3104	3515	1884	2650	3318	14472	2894
Poland	9213	15552	4923	-3350	25358	55047	13762
Qatar	0	0	0	0	0	0	0
Romania	1844	5302	3517	729	7787	19178	3836
Russia	16727	35602	37038	55340	15418	160126	32025
Rwanda	102	22	-4	-278	-1284	124	62
Samoa	0	0	174	56	176	407	136
São Tomé & Príncipe	0	0	0	0	0	0	0
Saudi Arabia	8523	25853	47094	90989	98832	271291	54258
Senegal	78	-122	-1049	-687	-2559	78	78
Serbia	0	0	0	0	0	0	0
Seychelles	-18	83	11	91	143	328	82
Sierra Leone	53	114	41	-117	-298	208	69
Slovak Republic	422	3808	2089	-2556	5657	11976	2994
Slovenia	-65	-700	-315	-975	312	312	312
Solomon Islands	-48	-25	27	-66	-57	27	27
Somalia	0	0	0	0	0	0	0
South Africa	4138	1007	-14242	-5890	-22468	5145	2572
Sri Lanka	513	205	357	-770	-947	1075	358

Table 10: Non-normalized Estimates of World Bank Residual Model (CED), 2002-06

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
St. Kitts	0	0	0	0	0	0	0
St. Lucia	-26	-16	-15	3	-134	3	3
St. Vincent & Grens.	10	-2	-33	-32	-4	10	10
Sudan	229	1080	911	-2190	-365	2220	740
Suriname	-186	-242	-251	-135	-147	0	0
Swaziland	254	162	236	123	4	780	156
Syrian Arab Republic	-269	-507	326	-11691	2215	2541	1270
Tajikistan	104	-3	10	51	430	595	149
Tanzania	576	-168	526	-133	-4257	1101	551
Thailand	-4181	1671	2328	-5176	1085	5084	1695
Timor-Leste	0	0	0	0	0	0	0
Togo	69	30	-126	-373	-302	99	49
Tonga	-10181	-13114	-29145	-3012	-4240	0	0
Trinidad & Tobago	0	0	0	0	0	0	0
Tunisia	2500	2382	669	-2887	1356	6906	1727
Turkey	11945	3107	3488	-22797	19645	38185	9546
Turkmenistan	0	0	0	0	0	0	0
Uganda	172	334	27	-452	-3496	533	178
Ukraine	4011	4534	12589	2750	18710	42595	8519
United Arab Emirates	0	0	0	0	0	0	0
Uruguay	3835	167	3220	-374	-3703	7222	2407
Uzbekistan	0	0	0	0	0	0	0
Vanuatu	20	1	5	-69	-16	26	9
Venezuela, Rep. Bol.	9344	8510	15817	27487	18322	79481	15896
Vietnam	1119	68	1902	415	-1149	3504	876
Yemen, Republic Of	234	-116	-51	-517	126	360	180
Zambia	81	-107	535	-2406	-2570	616	308
Zimbabwe	0	0	0	0	0	0	0

*Source: IMF Balance Payment, International Finance Statistics, Direction of Trade Statistics,
World Economic Outlook databases, as well as World Bank Global Development Finance database.

Table 11: Normalized Estimates of World Bank Residual Model (CED), 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Afghanistan, I.R. Of	0	0	0	0	0	0	0
Albania	0	0	0	0	0	0	0
Algeria	0	0	0	0	0	0	0
Angola	2156	2456	1964	4232	2841	13650	2730
Antigua & Barbuda	0	0	0	0	0	0	0
Argentina	12155	20619	3522	-31896	-3359	36297	12099
Armenia	212	268	303	7	179	969	194
Aruba	-39	33	154	-57	485	671	224
Azerbaijan, Rep. Of	505	496	-273	361	1197	2559	640
Bahamas, The	0	0	0	0	0	0	0
Bahrain, Kingdom Of	-57	-68	143	1093	3300	4537	1512
Bangladesh	2173	1238	872	-247	2474	6757	1689
Barbados	0	0	0	0	0	0	0
Belarus	0	0	0	0	0	0	0
Belize	7	43	-116	32	55	136	34
Benin	0	0	0	0	0	0	0
Bhutan	0	0	0	0	0	0	0
Bolivia	938	911	663	637	-1334	3149	787
Bosnia & Herzegovina	0	0	0	0	0	0	0
Botswana	545	528	724	531	656	2984	597
Brazil	0	0	0	0	0	0	0
Brunei Darussalam	1725	2370	2908	4222	5272	16497	3299
Bulgaria	953	1991	1650	302	4975	9871	1974
Burkina Faso	0	0	0	0	0	0	0
Burundi	87	81	27	-111	-62	195	65
Cambodia	0	0	0	0	0	0	0
Cameroon	0	0	0	0	0	0	0
Cape Verde	0	0	0	0	0	0	0
Central African Rep.	0	0	0	0	0	0	0
Chad	0	0	0	0	0	0	0
Chile	4030	3881	8858	6106	11929	34804	6961
China,P.R.: Mainland	0	0	0	0	0	0	0
Colombia	-3193	3791	409	1718	4319	10237	2559
Comoros	0	0	0	0	0	0	0
Congo, Dem. Rep. Of	0	0	0	0	0	0	0
Congo, Republic Of	1045	1219	1822	203	0	4289	1072
Costa Rica	0	0	0	0	0	0	0
Côte D'Ivoire	0	0	0	0	0	0	0
Croatia	1960	7439	5969	-4514	5228	20597	5149
Cyprus	0	0	0	0	0	0	0
Czech Republic	0	0	0	0	0	0	0
Djibouti	88	86	79	45	109	408	82
Dominica	0	0	0	0	0	0	0
Dominican Republic	1762	2397	2074	-10	1032	7264	1816

Table 11: Normalized Estimates of World Bank Residual Model (CED), 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Ecuador	0	0	0	0	0	0	0
Egypt	1700	4328	6063	-14	8165	20256	5064
El Salvador	881	1555	34	-56	177	2647	662
Equatorial Guinea	0	0	0	0	0	0	0
Eritrea	0	0	0	0	0	0	0
Estonia	0	0	0	0	0	0	0
Ethiopia	0	0	0	0	0	0	0
Fiji	0	0	0	0	0	0	0
Gabon	408	1165	1415	0	0	2989	996
Gambia, The	0	72	32	-5	53	157	52
Georgia	0	0	0	0	0	0	0
Ghana	0	0	0	0	0	0	0
Grenada	0	0	0	0	0	0	0
Guatemala	0	0	0	0	0	0	0
Guinea	0	0	0	0	0	0	0
Guinea-Bissau	14	11	10	0	0	35	12
Guyana	0	0	0	0	0	0	0
Haiti	0	0	0	0	0	0	0
Honduras	0	0	0	0	0	0	0
Hungary	4483	6009	8882	-4405	34466	53840	13460
India	0	0	0	0	0	0	0
Indonesia	0	0	0	0	0	0	0
Iran, I.R. Of	0	0	0	0	0	0	0
Iraq	0	0	0	0	0	0	0
Israel	0	0	0	0	0	0	0
Jamaica	-288	433	178	-643	820	1432	477
Jordan	319	744	534	-1142	710	2307	577
Kazakhstan	3698	5193	11820	13569	24392	58672	11734
Kenya	0	0	0	0	0	0	0
Kiribati	0	0	0	0	0	0	0
Kuwait	5315	16141	15031	28780	39932	105199	21040
Kyrgyz Republic	65	112	82	-157	84	342	86
Lao People's Dem.Rep	0	0	0	0	0	0	0
Latvia	1139	1259	2274	-134	3281	7952	1988
Lebanon	887	-5507	2048	-346	2923	5858	1953
Lesotho	125	93	96	-154	-40	314	105
Liberia	0	0	0	0	0	0	0
Libya	0	0	0	0	0	0	0
Lithuania	429	-358	1918	261	3221	5828	1457
Macedonia, Fyr	50	99	-89	-212	370	519	173
Madagascar	0	0	0	0	0	0	0
Malawi	0	0	0	0	0	0	0
Malaysia	0	0	0	0	0	0	0
Maldives	0	0	0	0	0	0	0

Table 11: Normalized Estimates of World Bank Residual Model (CED), 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Mali	0	0	0	0	0	0	0
Malta	-583	132	260	-36	1236	1628	543
Marshall Islands	0	0	0	0	0	0	0
Mauritania	0	0	0	0	0	0	0
Mauritius	0	0	0	0	0	0	0
Mexico	0	0	0	0	0	0	0
Micronesia	0	0	0	0	0	0	0
Moldova	201	66	-42	-50	78	345	115
Mongolia	66	566	168	29	294	1122	224
Montenegro	0	0	0	0	0	0	0
Morocco	520	2536	-1350	-477	3271	6326	2109
Mozambique	0	0	0	0	0	0	0
Myanmar	1116	929	152	81	841	3118	624
Namibia	262	531	706	700	1244	3441	688
Nepal	532	149	116	-176	26	823	206
Nicaragua	0	0	0	0	0	0	0
Niger	0	0	0	0	0	0	0
Nigeria	5135	9834	12366	-847	0	27335	9112
Oman	178	199	-158	2356	3674	6406	1602
Pakistan	2055	3240	1780	-3999	-1395	7075	2358
Palau	0	0	0	0	0	0	0
Panama	-79	943	1103	-263	2055	4102	1367
Papua New Guinea	0	0	0	0	0	0	0
Paraguay	378	76	375	-428	209	1038	260
Peru	0	0	0	0	0	0	0
Philippines	0	0	0	0	0	0	0
Poland	9213	15552	4923	-3350	25358	55047	13762
Qatar	0	0	0	0	0	0	0
Romania	1844	5302	3517	729	7787	19178	3836
Russia	16727	35602	37038	55340	15418	160126	32025
Rwanda	0	0	0	0	0	0	0
Samoa	0	0	174	56	176	407	136
São Tomé & Príncipe	0	0	0	0	0	0	0
Saudi Arabia	8523	25853	47094	90989	98832	271291	54258
Senegal	0	0	0	0	0	0	0
Serbia	0	0	0	0	0	0	0
Seychelles	-18	83	11	91	143	328	82
Sierra Leone	53	114	41	-117	-298	208	69
Slovak Republic	422	3808	2089	-2556	5657	11976	2994
Slovenia	0	0	0	0	0	0	0
Solomon Islands	0	0	0	0	0	0	0
Somalia	0	0	0	0	0	0	0
South Africa	0	0	0	0	0	0	0
Sri Lanka	0	0	0	0	0	0	0

Table 11: Normalized Estimates of World Bank Residual Model (CED), 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
St. Kitts	0	0	0	0	0	0	0
St. Lucia	0	0	0	0	0	0	0
St. Vincent & Grens.	0	0	0	0	0	0	0
Sudan	229	1080	911	-2190	-365	2220	740
Suriname	0	0	0	0	0	0	0
Swaziland	0	0	0	0	0	0	0
Syrian Arab Republic	0	0	0	0	0	0	0
Tajikistan	104	-3	10	51	430	595	149
Tanzania	0	0	0	0	0	0	0
Thailand	0	0	0	0	0	0	0
Timor-Leste	0	0	0	0	0	0	0
Togo	0	0	0	0	0	0	0
Tonga	0	0	0	0	0	0	0
Trinidad & Tobago	0	0	0	0	0	0	0
Tunisia	2500	2382	669	-2887	1356	6906	1727
Turkey	11945	3107	3488	-22797	19645	38185	9546
Turkmenistan	0	0	0	0	0	0	0
Uganda	172	334	27	-452	-3496	533	178
Ukraine	4011	4534	12589	2750	18710	42595	8519
United Arab Emirates	0	0	0	0	0	0	0
Uruguay	3835	167	3220	-374	-3703	7222	2407
Uzbekistan	0	0	0	0	0	0	0
Vanuatu	20	1	5	-69	-16	26	9
Venezuela, Rep. Bol.	9344	8510	15817	27487	18322	79481	15896
Vietnam	0	0	0	0	0	0	0
Yemen, Republic Of	0	0	0	0	0	0	0
Zambia	0	0	0	0	0	0	0
Zimbabwe	0	0	0	0	0	0	0

*Normalization is a two stage process. At the first stage, only countries with at least three years of capital flight out of five years pass through filtration to the second stage. During second stage, only those countries where capital flight exceeds 10 percent of their exports (f.o.b) are selected and included in the table.

Source: IMF Balance Payment, International Finance Statistics, Direction of Trade Statistics, World Economic Outlook databases, as well as World Bank Global Development Finance database.

Table 12: Non-normalized Estimates of World Bank Residual Model (NDF), 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Afghanistan, I.R. Of	0	0	0	0	143	143	143
Albania	-180	-99	-322	-58	-228	0	0
Algeria	-1436	-1260	-2309	-3740	-12048	0	0
Angola	1539	2985	2560	4381	3096	14562	2912
Antigua & Barbuda	0	0	0	0	0	0	0
Argentina	14157	5184	-3152	14160	-1471	33501	11167
Armenia	160	227	253	-1	119	759	190
Aruba	-39	33	154	-57	485	671	224
Azerbaijan, Rep. Of	408	352	-356	559	1144	2463	616
Bahamas, The	-331	-393	-217	-99	-772	0	0
Bahrain, Kingdom Of	-57	-68	143	1093	3300	4537	1512
Bangladesh	789	25	300	1335	2067	4516	903
Barbados	-127	-179	-196	-356	0	0	0
Belarus	513	-101	-272	898	90	1501	500
Belize	-35	45	-128	36	51	133	44
Benin	-21	-310	-68	-231	17	17	17
Bhutan	94	91	81	85	47	399	80
Bolivia	871	710	534	399	496	3009	602
Bosnia & Herzegovina	-396	-1334	-607	-968	-1032	0	0
Botswana	409	491	706	580	670	2855	571
Brazil	4771	10170	6920	-1013	-24244	21861	7287
Brunei Darussalam	1725	2370	2908	4222	5272	16497	3299
Bulgaria	569	1127	1184	1807	4910	9596	1919
Burkina Faso	71	101	236	183	232	823	165
Burundi	-13	-42	-18	-9	-109	0	0
Cambodia	43	-50	50	90	135	318	79
Cameroon	-242	-487	-442	-684	-213	0	0
Cape Verde	-27	-15	-82	-15	59	59	59
Central African Rep.	0	3	-6	-5	-42	3	2
Chad	108	151	80	70	66	475	95
Chile	3055	3735	8563	7155	11996	34505	6901
China,P.R.: Mainland	10718	-9710	-48793	59782	96859	167359	55786
Colombia	-1080	632	227	2034	1891	4784	1196
Comoros	11	3	3	0	2	18	4
Congo, Dem. Rep. Of	244	-67	315	95	79	733	183
Congo, Republic Of	541	597	795	695	-32	2628	657
Costa Rica	-273	-126	48	-18	-384	48	48
Côte D'Ivoire	-362	-480	-722	-363	857	857	857
Croatia	-126	5446	4009	5	3187	12647	3162
Cyprus	-213	214	-791	-1059	-1453	214	214
Czech Republic	-2598	-4415	-2072	5811	-84	5811	5811
Djibouti	51	42	64	73	95	326	65
Dominica	-10	39	-9	-109	-61	39	39
Dominican Republic	1697	2265	2004	156	1091	7213	1443

Table 12: Non-normalized Estimates of World Bank Residual Model (NDF), 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Ecuador	1350	471	286	-67	1442	3549	887
Egypt	378	1875	3554	1687	7410	14904	2981
El Salvador	565	106	35	451	-49	1158	289
Equatorial Guinea	1	33	-46	-1	0	34	17
Eritrea	85	80	68	57	36	327	65
Estonia	-682	-522	-1354	-1813	-2883	0	0
Ethiopia	964	304	279	-400	-1257	1547	516
Fiji	73	-24	-253	-76	-372	73	73
Gabon	40	557	1073	-35	29	1699	425
Gambia, The	58	36	12	41	28	174	35
Georgia	-76	-86	17	-306	-469	17	17
Ghana	134	-97	-305	-1072	97	231	115
Grenada	17	-32	9	-112	-66	27	13
Guatemala	-1053	-896	-1247	-1591	-852	0	0
Guinea	-115	-142	-173	-74	-84	0	0
Guinea-Bissau	-22	-28	-15	-7	-14	0	0
Guyana	-9	1	54	32	92	179	45
Haiti	-82	-62	-187	17	114	131	65
Honduras	37	-149	-190	168	128	333	111
Hungary	372	-246	7639	-1501	32443	40454	13485
India	-9625	-14379	-11101	-15139	-3945	0	0
Indonesia	-3474	-3083	-3293	8466	6336	14802	7401
Iran, I.R. Of	907	3983	6191	1416	-1744	12498	3124
Iraq	0	0	0	-7247	-4603	0	0
Israel	525	1456	184	3272	6880	12315	2463
Jamaica	-465	226	58	-402	679	963	321
Jordan	-127	-66	250	-676	358	607	304
Kazakhstan	2630	5050	11153	12901	23893	55628	11126
Kenya	2	84	-311	-982	-1219	86	43
Kiribati	0	0	0	0	0	0	0
Kuwait	5315	16141	15031	28780	39932	105199	21040
Kyrgyz Republic	-47	-26	-13	-10	-70	0	0
Lao People's Dem.Rep	198	319	163	301	68	1049	210
Latvia	842	657	1814	314	2296	5924	1185
Lebanon	680	-5838	1893	-81	2748	5321	1774
Lesotho	69	23	41	-93	-63	132	44
Liberia	0	3	-76	-106	-96	3	3
Libya	-170	-1644	-1353	2015	4313	6329	3164
Lithuania	-40	-1203	1043	-515	3494	4538	2269
Macedonia, Fyr	-87	-80	-154	-251	81	81	81
Madagascar	-281	-215	-275	-260	243	243	243
Malawi	-153	-2	35	45	82	162	54
Malaysia	8269	2788	-917	17955	19041	48053	12013
Maldives	-52	-45	-107	-199	-253	0	0

Table 12: Non-normalized Estimates of World Bank Residual Model (NDF), 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Mali	126	-305	-49	-133	-15	126	126
Malta	-583	132	260	-36	1236	1628	543
Marshall Islands	0	0	0	0	0	0	0
Mauritania	59	40	84	90	144	417	83
Mauritius	-57	570	-399	-198	-557	570	570
Mexico	-4973	710	8128	-1125	793	9630	3210
Micronesia	0	0	0	0	0	0	0
Moldova	20	-42	9	-1	15	44	15
Mongolia	-13	219	115	146	262	742	186
Montenegro	0	0	0	0	65	65	65
Morocco	161	1148	-2319	1133	2187	4628	1157
Mozambique	-532	-560	-239	-199	-300	0	0
Myanmar	511	259	243	508	703	2225	445
Namibia	262	531	706	700	1244	3441	688
Nepal	255	18	-17	102	-73	376	125
Nicaragua	-422	-260	-258	-283	-293	0	0
Niger	-45	-54	-61	-186	-390	0	0
Nigeria	4200	4547	8942	11860	-3721	29549	7387
Oman	167	162	-169	2385	3672	6386	1596
Pakistan	654	22	1142	-531	-2183	1818	606
Palau	0	0	0	0	0	0	0
Panama	-54	908	1109	-202	2033	4051	1350
Papua New Guinea	-318	9	-282	440	-226	449	224
Paraguay	293	-65	73	-324	185	551	184
Peru	630	835	812	1637	2383	6296	1259
Philippines	694	1513	2844	3432	1905	10387	2077
Poland	-601	5437	-749	2605	17047	25088	8363
Qatar	0	0	0	0	0	0	0
Romania	430	2910	2710	2061	6623	14733	2947
Russia	19201	20023	25103	45381	10462	120170	24034
Rwanda	34	-78	-43	-66	-133	34	34
Samoa	16	119	167	71	169	541	108
São Tomé & Príncipe	8	-11	6	2	-2	16	5
Saudi Arabia	8523	25853	47094	90989	98832	271291	54258
Senegal	-181	-489	-528	-357	-448	0	0
Serbia	804	1080	1668	2837	2817	9206	1841
Seychelles	-43	46	-10	41	124	211	70
Sierra Leone	-11	1	33	27	-10	61	20
Slovak Republic	94	1629	1464	-1759	4685	7872	1968
Slovenia	-65	-700	-315	-975	312	312	312
Solomon Islands	-59	-27	20	-58	-63	20	20
Somalia	9	0	-33	0	0	9	9
South Africa	2018	-301	-11677	-4439	-20321	2018	2018
Sri Lanka	-168	104	-18	62	-1209	166	83

Table 12: Non-normalized Estimates of World Bank Residual Model (NDF), 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
St. Kitts	39	43	-12	-20	-3	82	41
St. Lucia	-30	-23	-18	8	-138	8	8
St. Vincent & Grens.	9	-7	-35	-29	-3	9	9
Sudan	-563	-120	223	-1295	-1077	223	223
Suriname	-186	-242	-251	-135	-147	0	0
Swaziland	197	100	238	167	-3	701	175
Syrian Arab Republic	-504	-772	207	518	2135	2860	953
Tajikistan	-25	18	229	94	456	796	199
Tanzania	194	127	243	381	-195	946	236
Thailand	-6323	1797	1350	-790	268	3415	1138
Timor-Leste	0	0	0	0	0	0	0
Togo	-90	-169	-274	-222	-433	0	0
Tonga	-10188	-13119	-29147	-3006	-4243	0	0
Trinidad & Tobago	0	0	0	0	0	0	0
Tunisia	1469	1000	-178	-1398	335	2804	935
Turkey	7347	-7239	740	-14303	15852	23939	7980
Turkmenistan	-413	-290	-267	-280	-206	0	0
Uganda	41	55	-50	-36	-84	95	48
Ukraine	3467	3653	12602	4895	14020	38637	7727
United Arab Emirates	0	0	0	0	0	0	0
Uruguay	3588	-794	2666	245	-3576	6500	2167
Uzbekistan	-379	-79	-158	-297	-452	0	0
Vanuatu	13	-6	2	-59	-18	16	8
Venezuela, Rep. Bol.	8209	7762	15594	28098	16452	76115	15223
Vietnam	383	-997	1965	1193	-1450	3541	1180
Yemen, Republic Of	38	-360	-146	-231	76	115	57
Zambia	-198	-486	324	-247	899	1224	612
Zimbabwe	-164	104	83	-213	133	320	107

*Source: IMF Balance Payment, International Finance Statistics, Direction of Trade Statistics,
World Economic Outlook databases, as well as World Bank Global Development Finance database.

Table 13: Normalized Estimates of World Bank Residual Model (NDF), 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Afghanistan, I.R. Of	0	0	0	0	0	0	0
Albania	0	0	0	0	0	0	0
Algeria	0	0	0	0	0	0	0
Angola	1539	2985	2560	4381	3096	14562	2912
Antigua & Barbuda	0	0	0	0	0	0	0
Argentina	14157	5184	-3152	14160	-1471	33501	11167
Armenia	160	227	253	-1	119	759	190
Aruba	-39	33	154	-57	485	671	224
Azerbaijan, Rep. Of	408	352	-356	559	1144	2463	616
Bahamas, The	0	0	0	0	0	0	0
Bahrain, Kingdom Of	-57	-68	143	1093	3300	4537	1512
Bangladesh	789	25	300	1335	2067	4516	903
Barbados	0	0	0	0	0	0	0
Belarus	0	0	0	0	0	0	0
Belize	-35	45	-128	36	51	133	44
Benin	0	0	0	0	0	0	0
Bhutan	94	91	81	85	47	399	80
Bolivia	871	710	534	399	496	3009	602
Bosnia & Herzegovina	0	0	0	0	0	0	0
Botswana	409	491	706	580	670	2855	571
Brazil	0	0	0	0	0	0	0
Brunei Darussalam	1725	2370	2908	4222	5272	16497	3299
Bulgaria	569	1127	1184	1807	4910	9596	1919
Burkina Faso	71	101	236	183	232	823	165
Burundi	0	0	0	0	0	0	0
Cambodia	0	0	0	0	0	0	0
Cameroon	0	0	0	0	0	0	0
Cape Verde	0	0	0	0	0	0	0
Central African Rep.	0	0	0	0	0	0	0
Chad	0	0	0	0	0	0	0
Chile	3055	3735	8563	7155	11996	34505	6901
China,P.R.: Mainland	0	0	0	0	0	0	0
Colombia	0	0	0	0	0	0	0
Comoros	11	3	3	0	2	18	4
Congo, Dem. Rep. Of	244	-67	315	95	79	733	183
Congo, Republic Of	541	597	795	695	-32	2628	657
Costa Rica	0	0	0	0	0	0	0
Côte D'Ivoire	0	0	0	0	0	0	0
Croatia	-126	5446	4009	5	3187	12647	3162
Cyprus	0	0	0	0	0	0	0
Czech Republic	0	0	0	0	0	0	0
Djibouti	51	42	64	73	95	326	65
Dominica	0	0	0	0	0	0	0
Dominican Republic	1697	2265	2004	156	1091	7213	1443

Table 13: Normalized Estimates of World Bank Residual Model (NDF), 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Ecuador	1350	471	286	-67	1442	3549	887
Egypt	378	1875	3554	1687	7410	14904	2981
El Salvador	0	0	0	0	0	0	0
Equatorial Guinea	0	0	0	0	0	0	0
Eritrea	0	0	0	0	0	0	0
Estonia	0	0	0	0	0	0	0
Ethiopia	964	304	279	-400	-1257	1547	516
Fiji	0	0	0	0	0	0	0
Gabon	40	557	1073	-35	29	1699	425
Gambia, The	58	36	12	41	28	174	35
Georgia	0	0	0	0	0	0	0
Ghana	0	0	0	0	0	0	0
Grenada	0	0	0	0	0	0	0
Guatemala	0	0	0	0	0	0	0
Guinea	0	0	0	0	0	0	0
Guinea-Bissau	0	0	0	0	0	0	0
Guyana	0	0	0	0	0	0	0
Haiti	0	0	0	0	0	0	0
Honduras	0	0	0	0	0	0	0
Hungary	372	-246	7639	-1501	32443	40454	13485
India	0	0	0	0	0	0	0
Indonesia	0	0	0	0	0	0	0
Iran, I.R. Of	0	0	0	0	0	0	0
Iraq	0	0	0	0	0	0	0
Israel	0	0	0	0	0	0	0
Jamaica	-465	226	58	-402	679	963	321
Jordan	0	0	0	0	0	0	0
Kazakhstan	2630	5050	11153	12901	23893	55628	11126
Kenya	0	0	0	0	0	0	0
Kiribati	0	0	0	0	0	0	0
Kuwait	5315	16141	15031	28780	39932	105199	21040
Kyrgyz Republic	0	0	0	0	0	0	0
Lao People's Dem.Rep	198	319	163	301	68	1049	210
Latvia	842	657	1814	314	2296	5924	1185
Lebanon	680	-5838	1893	-81	2748	5321	1774
Lesotho	0	0	0	0	0	0	0
Liberia	0	0	0	0	0	0	0
Libya	0	0	0	0	0	0	0
Lithuania	0	0	0	0	0	0	0
Macedonia, Fyr	0	0	0	0	0	0	0
Madagascar	0	0	0	0	0	0	0
Malawi	-153	-2	35	45	82	162	54
Malaysia	0	0	0	0	0	0	0
Maldives	0	0	0	0	0	0	0

Table 13: Normalized Estimates of World Bank Residual Model (NDF), 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Mali	0	0	0	0	0	0	0
Malta	-583	132	260	-36	1236	1628	543
Marshall Islands	0	0	0	0	0	0	0
Mauritania	0	0	0	0	0	0	0
Mauritius	0	0	0	0	0	0	0
Mexico	0	0	0	0	0	0	0
Micronesia	0	0	0	0	0	0	0
Moldova	0	0	0	0	0	0	0
Mongolia	-13	219	115	146	262	742	186
Montenegro	0	0	0	0	0	0	0
Morocco	161	1148	-2319	1133	2187	4628	1157
Mozambique	0	0	0	0	0	0	0
Myanmar	511	259	243	508	703	2225	445
Namibia	262	531	706	700	1244	3441	688
Nepal	255	18	-17	102	-73	376	125
Nicaragua	0	0	0	0	0	0	0
Niger	0	0	0	0	0	0	0
Nigeria	4200	4547	8942	11860	-3721	29549	7387
Oman	167	162	-169	2385	3672	6386	1596
Pakistan	0	0	0	0	0	0	0
Palau	0	0	0	0	0	0	0
Panama	-54	908	1109	-202	2033	4051	1350
Papua New Guinea	0	0	0	0	0	0	0
Paraguay	293	-65	73	-324	185	551	184
Peru	0	0	0	0	0	0	0
Philippines	0	0	0	0	0	0	0
Poland	-601	5437	-749	2605	17047	25088	8363
Qatar	0	0	0	0	0	0	0
Romania	430	2910	2710	2061	6623	14733	2947
Russia	19201	20023	25103	45381	10462	120170	24034
Rwanda	0	0	0	0	0	0	0
Samoa	16	119	167	71	169	541	108
São Tomé & Príncipe	8	-11	6	2	-2	16	5
Saudi Arabia	8523	25853	47094	90989	98832	271291	54258
Senegal	0	0	0	0	0	0	0
Serbia	804	1080	1668	2837	2817	9206	1841
Seychelles	-43	46	-10	41	124	211	70
Sierra Leone	-11	1	33	27	-10	61	20
Slovak Republic	0	0	0	0	0	0	0
Slovenia	0	0	0	0	0	0	0
Solomon Islands	0	0	0	0	0	0	0
Somalia	0	0	0	0	0	0	0
South Africa	0	0	0	0	0	0	0
Sri Lanka	0	0	0	0	0	0	0

Table 13: Normalized Estimates of World Bank Residual Model (NDF), 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
St. Kitts	0	0	0	0	0	0	0
St. Lucia	0	0	0	0	0	0	0
St. Vincent & Grens.	0	0	0	0	0	0	0
Sudan	0	0	0	0	0	0	0
Suriname	0	0	0	0	0	0	0
Swaziland	0	0	0	0	0	0	0
Syrian Arab Republic	0	0	0	0	0	0	0
Tajikistan	-25	18	229	94	456	796	199
Tanzania	194	127	243	381	-195	946	236
Thailand	0	0	0	0	0	0	0
Timor-Leste	0	0	0	0	0	0	0
Togo	0	0	0	0	0	0	0
Tonga	0	0	0	0	0	0	0
Trinidad & Tobago	0	0	0	0	0	0	0
Tunisia	1469	1000	-178	-1398	335	2804	935
Turkey	7347	-7239	740	-14303	15852	23939	7980
Turkmenistan	0	0	0	0	0	0	0
Uganda	0	0	0	0	0	0	0
Ukraine	3467	3653	12602	4895	14020	38637	7727
United Arab Emirates	0	0	0	0	0	0	0
Uruguay	3588	-794	2666	245	-3576	6500	2167
Uzbekistan	0	0	0	0	0	0	0
Vanuatu	0	0	0	0	0	0	0
Venezuela, Rep. Bol.	8209	7762	15594	28098	16452	76115	15223
Vietnam	0	0	0	0	0	0	0
Yemen, Republic Of	0	0	0	0	0	0	0
Zambia	0	0	0	0	0	0	0
Zimbabwe	0	0	0	0	0	0	0

*Normalization is a two stage process. At the first stage, only countries with at least three years of capital flight out of five years pass through filtration to the second stage. During second stage, only those countries where capital flight exceeds 10 percent of their exports (f.o.b) are selected and included in the table.

Source: IMF Balance Payment, International Finance Statistics, Direction of Trade Statistics,
World Economic Outlook databases, as well as World Bank Global Development Finance database.

Table 14: Non-normalized Estimates of Trade Mispricing Model (GER), 2002-06

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Afghanistan, I.R. Of	0	1	11	1	1	14	3
Albania	0	3	9	77	66	155	39
Algeria	793	24	117	44	37	1016	203
Angola	1	1	168	0	0	170	34
Antigua & Barbuda	0	0	0	0	0	0	0
Argentina	597	0	1447	780	0	2824	941
Armenia	170	247	105	316	181	1018	204
Aruba	803	1195	2165	3560	3506	11229	2246
Azerbaijan, Rep. Of	0	0	0	0	2194	2194	2194
Bahamas, The	75	87	130	132	160	584	117
Bahrain, Kingdom Of	0	0	0	0	0	0	0
Bangladesh	401	810	920	487	0	2617	654
Barbados	287	321	348	526	52	1534	307
Belarus	0	0	10606	1651	9394	21651	7217
Belize	0	2	2	1	1	6	1
Benin	0	0	54	38	37	129	43
Bhutan	0	0	0	0	0	0	0
Bolivia	212	222	17	93	12	556	111
Bosnia & Herzegovina	0	0	27	14	313	354	71
Botswana	0	0	0	0	0	0	0
Brazil	0	1119	2367	2422	485	6394	1598
Brunei Darussalam	3	0	12	3	4	22	5
Bulgaria	440	674	438	520	0	2072	518
Burkina Faso	33	45	59	67	81	285	57
Burundi	6	3	0	50	120	179	45
Cambodia	279	327	402	395	506	1910	382
Cameroon	112	308	0	0	0	419	210
Cape Verde	16	13	17	20	25	91	18
Central African Rep.	32	40	54	59	73	257	51
Chad	0	0	0	0	0	0	0
Chile	1044	1098	1377	1329	0	4848	1212
China,P.R.: Mainland	154442	184749	253259	282100	293047	1167598	233520
Colombia	937	1616	2151	1596	179	6478	1296
Comoros	2	2	3	3	4	13	3
Congo, Dem. Rep. Of	4	4	4	8	0	19	5
Congo, Republic Of	0	918	2959	34	38	3949	987
Costa Rica	2267	3417	4615	5743	105	16147	3229
Côte D'Ivoire	0	0	0	0	0	0	0
Croatia	154	463	189	14	0	820	205
Cyprus	360	537	478	299	2154	3828	766
Czech Republic	1670	2726	1673	0	0	6069	2023
Djibouti	26	32	38	42	50	188	38
Dominica	1	1	0	2	2	7	2
Dominican Republic	6	4	0	5	6	21	5

Table 14: Non-normalized Estimates of Trade Mispricing Model (GER), 2002-06

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Ecuador	300	26	816	1130	478	2750	550
Egypt	1059	1340	1751	2090	2618	8859	1772
El Salvador	550	569	767	771	492	3150	630
Equatorial Guinea	0	4	17	0	0	22	4
Eritrea	0	0	0	0	0	0	0
Estonia	0	0	610	0	0	610	610
Ethiopia	308	89	49	776	893	2115	423
Fiji	8	11	14	16	19	67	13
Gabon	24	29	35	40	47	175	35
Gambia, The	2	3	3	4	5	17	3
Georgia	242	367	445	394	911	2359	472
Ghana	28	36	79	53	65	261	52
Grenada	20	23	26	28	31	128	26
Guatemala	1393	1277	1392	1532	343	5937	1187
Guinea	2	161	413	501	738	1814	363
Guinea-Bissau	9	12	16	17	21	75	15
Guyana	0	1	0	0	0	1	1
Haiti	0	0	0	0	0	0	0
Honduras	2743	2763	2816	22	27	8371	1674
Hungary	0	0	0	0	0	0	0
India	8325	9962	23173	27512	44659	113632	22726
Indonesia	1182	11810	14655	11324	12837	51807	10361
Iran, I.R. Of	278	86	63	137	160	723	145
Iraq	0	0	4	0	0	4	2
Israel	623	497	0	0	0	1120	560
Jamaica	294	427	418	485	190	1813	363
Jordan	0	0	174	0	0	174	174
Kazakhstan	1037	303	0	55	59	1454	364
Kenya	0	123	378	65	81	647	162
Kiribati	0	0	0	0	0	0	0
Kuwait	126	141	149	193	231	840	168
Kyrgyz Republic	0	0	0	16	0	16	16
Lao People's Dem.Rep	0	0	0	0	0	0	0
Latvia	668	766	1189	753	792	4169	834
Lebanon	96	123	161	184	226	790	158
Lesotho	0	0	0	0	0	0	0
Liberia	1	2	6	3	3	14	3
Libya	18	42	17	47	51	174	35
Lithuania	0	0	0	0	0	0	0
Macedonia, Fyr	164	245	376	471	166	1422	284
Madagascar	299	214	161	200	254	1129	226
Malawi	0	1	2	8	2	12	2
Malaysia	12336	18217	19679	21709	23196	95137	19027
Maldives	1072	887	942	41	24	2966	593

Table 14: Non-normalized Estimates of Trade Mispricing Model (GER), 2002-06

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Mali	458	512	576	623	693	2863	573
Malta	137	300	397	674	848	2355	471
Marshall Islands	0	0	0	0	0	0	0
Mauritania	62	79	104	118	145	509	102
Mauritius	15	114	18	0	119	266	67
Mexico	40013	37303	40676	43958	46451	208402	41680
Micronesia	0	0	0	0	0	0	0
Moldova	106	222	333	257	0	919	230
Mongolia	0	0	0	0	174	174	174
Montenegro	0	0	0	0	0	0	0
Morocco	182	317	736	3444	244	4924	985
Mozambique	191	3	0	0	427	622	207
Myanmar	4	5	3	7	0	19	5
Namibia	0	0	0	0	0	0	0
Nepal	457	356	422	499	239	1972	394
Nicaragua	441	519	638	918	1100	3616	723
Niger	0	0	89	1	1	90	30
Nigeria	0	0	2659	3376	4169	10204	3401
Oman	134	314	0	0	0	448	224
Pakistan	0	0	0	0	709	709	709
Palau	0	0	0	0	0	0	0
Panama	2084	2275	2382	3235	3535	13513	2703
Papua New Guinea	15	18	22	28	34	117	23
Paraguay	306	157	0	25	1902	2390	598
Peru	709	940	843	1204	900	4594	919
Philippines	7105	10280	11989	15666	15729	60770	12154
Poland	274	48	590	0	0	912	304
Qatar	0	0	0	6227	7498	13725	6863
Romania	0	0	0	0	0	0	0
Russia	0	2797	16111	0	1080	19989	6663
Rwanda	63	80	104	119	158	524	105
Samoa	0	2	2	312	4	320	80
São Tomé & Príncipe	0	0	0	0	0	0	0
Saudi Arabia	0	0	0	1164	613	1777	889
Senegal	0	0	0	9	0	9	9
Serbia	0	0	0	0	0	0	0
Seychelles	205	149	55	62	76	548	110
Sierra Leone	14	18	22	26	32	112	22
Slovak Republic	956	278	344	0	0	1577	526
Slovenia	0	0	44	0	0	44	44
Solomon Islands	17	19	21	23	26	107	21
Somalia	39	49	65	73	90	316	63
South Africa	958	0	3071	4678	6782	15489	3872
Sri Lanka	0	0	0	0	0	0	0

Table 14: Non-normalized Estimates of Trade Mispricing Model (GER), 2002-06

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
St. Kitts	3	4	4	4	5	20	4
St. Lucia	3	3	4	4	5	20	4
St. Vincent & Grens.	170	153	279	299	1	902	180
Sudan	0	0	43	156	71	270	90
Suriname	0	26	1	0	0	27	5
Swaziland	0	0	0	0	0	0	0
Syrian Arab Republic	1125	1422	12225	2	5	14780	2956
Tajikistan	168	117	173	55	0	513	128
Tanzania	0	110	135	81	0	327	109
Thailand	1489	2207	3902	8578	6857	23033	4607
Timor-Leste	0	0	0	0	0	0	0
Togo	72	232	73	174	39	590	118
Tonga	0	0	4	0	0	4	1
Trinidad & Tobago	1095	5	6	8	11	1124	225
Tunisia	0	0	0	0	0	0	0
Turkey	1801	2057	0	1896	361	6115	1529
Turkmenistan	685	599	2	0	0	1286	429
Uganda	3	135	14	19	24	196	39
Ukraine	0	0	0	0	28	28	28
United Arab Emirates	0	0	0	0	0	0	0
Uruguay	19	345	319	352	29	1064	213
Uzbekistan	0	0	0	0	0	1	0
Vanuatu	2	3	3	4	5	16	3
Venezuela, Rep. Bol.	458	0	2091	986	88	3623	906
Vietnam	0	0	0	0	0	0	0
Yemen, Republic Of	0	33	0	1087	0	1120	560
Zambia	0	388	555	1289	481	2714	678
Zimbabwe	655	0	299	321	1726	3001	750

*Source: IMF Balance Payment, International Finance Statistics, Direction of Trade Statistics,
World Economic Outlook databases, as well as World Bank Global Development Finance database.

Table 15: Normalized Estimates of Trade Mispricing Model (GER), 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Afghanistan, I.R. Of	0	0	0	0	0	0	0
Albania	0	0	0	0	0	0	0
Algeria	0	0	0	0	0	0	0
Angola	0	0	0	0	0	0	0
Antigua & Barbuda	0	0	0	0	0	0	0
Argentina	0	0	0	0	0	0	0
Armenia	170	247	105	316	181	1018	204
Aruba	803	1195	2165	3560	3506	11229	2246
Azerbaijan, Rep. Of	0	0	0	0	0	0	0
Bahamas, The	75	87	130	132	160	584	117
Bahrain, Kingdom Of	0	0	0	0	0	0	0
Bangladesh	0	0	0	0	0	0	0
Barbados	287	321	348	526	52	1534	307
Belarus	0	0	10606	1651	9394	21651	7217
Belize	0	0	0	0	0	0	0
Benin	0	0	0	0	0	0	0
Bhutan	0	0	0	0	0	0	0
Bolivia	0	0	0	0	0	0	0
Bosnia & Herzegovina	0	0	0	0	0	0	0
Botswana	0	0	0	0	0	0	0
Brazil	0	0	0	0	0	0	0
Brunei Darussalam	0	0	0	0	0	0	0
Bulgaria	0	0	0	0	0	0	0
Burkina Faso	33	45	59	67	81	285	57
Burundi	6	3	0	50	120	179	45
Cambodia	279	327	402	395	506	1910	382
Cameroon	0	0	0	0	0	0	0
Cape Verde	16	13	17	20	25	91	18
Central African Rep.	32	40	54	59	73	257	51
Chad	0	0	0	0	0	0	0
Chile	0	0	0	0	0	0	0
China,P.R.: Mainland	154442	184749	253259	282100	293047	1167598	233520
Colombia	0	0	0	0	0	0	0
Comoros	2	2	3	3	4	13	3
Congo, Dem. Rep. Of	0	0	0	0	0	0	0
Congo, Republic Of	0	918	2959	34	38	3949	987
Costa Rica	2267	3417	4615	5743	105	16147	3229
Côte D'Ivoire	0	0	0	0	0	0	0
Croatia	0	0	0	0	0	0	0
Cyprus	360	537	478	299	2154	3828	766
Czech Republic	0	0	0	0	0	0	0
Djibouti	26	32	38	42	50	188	38
Dominica	0	0	0	0	0	0	0
Dominican Republic	0	0	0	0	0	0	0

Table 15: Normalized Estimates of Trade Mispricing Model (GER), 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Ecuador	0	0	0	0	0	0	0
Egypt	1059	1340	1751	2090	2618	8859	1772
El Salvador	550	569	767	771	492	3150	630
Equatorial Guinea	0	0	0	0	0	0	0
Eritrea	0	0	0	0	0	0	0
Estonia	0	0	0	0	0	0	0
Ethiopia	308	89	49	776	893	2115	423
Fiji	0	0	0	0	0	0	0
Gabon	0	0	0	0	0	0	0
Gambia, The	2	3	3	4	5	17	3
Georgia	242	367	445	394	911	2359	472
Ghana	0	0	0	0	0	0	0
Grenada	20	23	26	28	31	128	26
Guatemala	1393	1277	1392	1532	343	5937	1187
Guinea	2	161	413	501	738	1814	363
Guinea-Bissau	9	12	16	17	21	75	15
Guyana	0	0	0	0	0	0	0
Haiti	0	0	0	0	0	0	0
Honduras	2743	2763	2816	22	27	8371	1674
Hungary	0	0	0	0	0	0	0
India	8325	9962	23173	27512	44659	113632	22726
Indonesia	1182	11810	14655	11324	12837	51807	10361
Iran, I.R. Of	0	0	0	0	0	0	0
Iraq	0	0	0	0	0	0	0
Israel	0	0	0	0	0	0	0
Jamaica	294	427	418	485	190	1813	363
Jordan	0	0	0	0	0	0	0
Kazakhstan	0	0	0	0	0	0	0
Kenya	0	0	0	0	0	0	0
Kiribati	0	0	0	0	0	0	0
Kuwait	0	0	0	0	0	0	0
Kyrgyz Republic	0	0	0	0	0	0	0
Lao People's Dem.Rep	0	0	0	0	0	0	0
Latvia	668	766	1189	753	792	4169	834
Lebanon	0	0	0	0	0	0	0
Lesotho	0	0	0	0	0	0	0
Liberia	0	0	0	0	0	0	0
Libya	0	0	0	0	0	0	0
Lithuania	0	0	0	0	0	0	0
Macedonia, Fyr	164	245	376	471	166	1422	284
Madagascar	299	214	161	200	254	1129	226
Malawi	0	0	0	0	0	0	0
Malaysia	12336	18217	19679	21709	23196	95137	19027
Maldives	1072	887	942	41	24	2966	593

Table 15: Normalized Estimates of Trade Mispricing Model (GER), 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Mali	458	512	576	623	693	2863	573
Malta	137	300	397	674	848	2355	471
Marshall Islands	0	0	0	0	0	0	0
Mauritania	0	0	0	0	0	0	0
Mauritius	0	0	0	0	0	0	0
Mexico	40013	37303	40676	43958	46451	208402	41680
Micronesia	0	0	0	0	0	0	0
Moldova	106	222	333	257	0	919	230
Mongolia	0	0	0	0	0	0	0
Montenegro	0	0	0	0	0	0	0
Morocco	0	0	0	0	0	0	0
Mozambique	191	3	0	0	427	622	207
Myanmar	0	0	0	0	0	0	0
Namibia	0	0	0	0	0	0	0
Nepal	457	356	422	499	239	1972	394
Nicaragua	441	519	638	918	1100	3616	723
Niger	0	0	0	0	0	0	0
Nigeria	0	0	0	0	0	0	0
Oman	0	0	0	0	0	0	0
Pakistan	0	0	0	0	0	0	0
Palau	0	0	0	0	0	0	0
Panama	2084	2275	2382	3235	3535	13513	2703
Papua New Guinea	0	0	0	0	0	0	0
Paraguay	306	157	0	25	1902	2390	598
Peru	0	0	0	0	0	0	0
Philippines	7105	10280	11989	15666	15729	60770	12154
Poland	0	0	0	0	0	0	0
Qatar	0	0	0	0	0	0	0
Romania	0	0	0	0	0	0	0
Russia	0	0	0	0	0	0	0
Rwanda	63	80	104	119	158	524	105
Samoa	0	2	2	312	4	320	80
São Tomé & Príncipe	0	0	0	0	0	0	0
Saudi Arabia	0	0	0	0	0	0	0
Senegal	0	0	0	0	0	0	0
Serbia	0	0	0	0	0	0	0
Seychelles	205	149	55	62	76	548	110
Sierra Leone	14	18	22	26	32	112	22
Slovak Republic	0	0	0	0	0	0	0
Slovenia	0	0	0	0	0	0	0
Solomon Islands	17	19	21	23	26	107	21
Somalia	0	0	0	0	0	0	0
South Africa	0	0	0	0	0	0	0
Sri Lanka	0	0	0	0	0	0	0

Table 15: Normalized Estimates of Trade Mispricing Model (GER), 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
St. Kitts	3	4	4	4	5	20	4
St. Lucia	0	0	0	0	0	0	0
St. Vincent & Grens.	170	153	279	299	1	902	180
Sudan	0	0	0	0	0	0	0
Suriname	0	0	0	0	0	0	0
Swaziland	0	0	0	0	0	0	0
Syrian Arab Republic	1125	1422	12225	2	5	14780	2956
Tajikistan	168	117	173	55	0	513	128
Tanzania	0	0	0	0	0	0	0
Thailand	0	0	0	0	0	0	0
Timor-Leste	0	0	0	0	0	0	0
Togo	72	232	73	174	39	590	118
Tonga	0	0	0	0	0	0	0
Trinidad & Tobago	0	0	0	0	0	0	0
Tunisia	0	0	0	0	0	0	0
Turkey	0	0	0	0	0	0	0
Turkmenistan	0	0	0	0	0	0	0
Uganda	0	0	0	0	0	0	0
Ukraine	0	0	0	0	0	0	0
United Arab Emirates	0	0	0	0	0	0	0
Uruguay	0	0	0	0	0	0	0
Uzbekistan	0	0	0	0	0	0	0
Vanuatu	2	3	3	4	5	16	3
Venezuela, Rep. Bol.	0	0	0	0	0	0	0
Vietnam	0	0	0	0	0	0	0
Yemen, Republic Of	0	0	0	0	0	0	0
Zambia	0	388	555	1289	481	2714	678
Zimbabwe	655	0	299	321	1726	3001	750

*Normalization is a two stage process. At the first stage, only countries with at least three years of capital flight out of five years pass through filtration to the second stage. During second stage, only those countries where capital flight exceeds 10 percent of their exports (f.o.b) are selected and included in the table.

Source: IMF Balance Payment, International Finance Statistics, Direction of Trade Statistics,
World Economic Outlook databases, as well as World Bank Global Development Finance database.

Table 16: Non-normalized Estimates of Trade Mispricing Model (Net), 2002-06

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Afghanistan, I.R. Of	0	1	11	1	1	14	3
Albania	-25	-23	-40	15	-27	15	-20
Algeria	-686	22	117	42	35	217	-94
Angola	1	1	150	0	-2	152	30
Antigua & Barbuda	0	0	0	0	0	0	0
Argentina	-16	-318	1447	780	-1212	2227	136
Armenia	10	93	-92	120	-100	223	6
Aruba	803	1195	2003	1670	1578	7250	1450
Azerbaijan, Rep. Of	-805	-904	-1922	-1120	312	312	-888
Bahamas, The	73	84	127	128	156	567	113
Bahrain, Kingdom Of	-6294	-7935	-10433	-12114	-14999	0	-10355
Bangladesh	116	810	462	213	-922	1601	136
Barbados	287	321	348	526	17	1499	300
Belarus	-2162	-2485	1835	-3461	189	2025	-1217
Belize	-3	-2	-12	-24	-33	0	-15
Benin	-833	-815	-918	-1599	-140	0	-861
Bhutan	0	0	0	0	0	0	0
Bolivia	-81	-132	-403	83	0	83	-107
Bosnia & Herzegovina	0	0	25	14	-437	40	-79
Botswana	0	0	0	0	0	0	0
Brazil	-2587	1119	872	1185	-1768	3176	-236
Brunei Darussalam	-13	-939	12	-12	-12	12	-193
Bulgaria	90	140	-324	-685	-5890	230	-1334
Burkina Faso	0	4	0	6	7	18	3
Burundi	0	3	-36	50	117	170	27
Cambodia	-532	-765	-895	-1098	-1773	0	-1012
Cameroon	-20	-284	-249	-382	-482	0	-283
Cape Verde	16	13	17	20	25	91	18
Central African Rep.	32	40	54	59	72	256	51
Chad	0	0	-38	0	-1	0	-8
Chile	82	1010	1188	1329	-2357	3609	251
China,P.R.: Mainland	154442	184749	253259	282100	293047	1167598	233520
Colombia	937	1616	2151	1596	179	6478	1296
Comoros	2	2	2	3	4	12	2
Congo, Dem. Rep. Of	1	0	4	2	-11	7	-1
Congo, Republic Of	-495	694	2155	23	26	2897	480
Costa Rica	2267	3417	4615	5743	105	16147	3229
Côte D'Ivoire	0	0	0	0	0	0	0
Croatia	-594	-561	-935	-1311	-1592	0	-999
Cyprus	-3184	-5706	-7565	-7045	-6987	0	-6097
Czech Republic	-1882	-778	-10786	-16741	-19684	0	-9974
Djibouti	25	31	37	41	48	182	36
Dominica	0	0	-2	0	0	0	-1
Dominican Republic	3	1	-5	2	3	9	1

Table 16: Non-normalized Estimates of Trade Mispricing Model (Net), 2002-06

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Ecuador	-193	-68	552	1130	381	2064	361
Egypt	203	236	299	435	581	1755	351
El Salvador	429	439	485	771	257	2382	476
Equatorial Guinea	0	4	17	0	-4	22	4
Eritrea	0	0	0	0	0	0	0
Estonia	-1340	-992	-1023	-2231	-3547	0	-1827
Ethiopia	308	83	4	776	727	1898	380
Fiji	-85	-105	-133	-152	-185	0	-132
Gabon	-258	-323	-436	-476	-585	0	-415
Gambia, The	2	3	3	4	5	17	3
Georgia	24	-68	66	66	594	750	137
Ghana	-120	-152	-164	-229	-268	0	-187
Grenada	17	19	21	23	25	106	21
Guatemala	1393	1277	1392	1532	134	5728	1146
Guinea	-1	-47	413	322	517	1252	241
Guinea-Bissau	9	12	16	17	21	75	15
Guyana	-3	-3	-5	-6	-8	0	-5
Haiti	-358	-418	-447	-16	-20	0	-252
Honduras	987	901	785	0	0	2673	535
Hungary	-3810	-5524	-7925	-10657	-14890	0	-8561
India	7881	9962	23173	27512	43941	112469	22494
Indonesia	-3503	-12675	-11339	-14962	-14682	0	-11432
Iran, I.R. Of	-3436	-4435	-5883	-8124	-10233	0	-6422
Iraq	-5	-2	-82	0	-3	0	-18
Israel	-1692	-2293	-4929	-3529	-4569	0	-3402
Jamaica	294	270	403	485	190	1642	328
Jordan	-1191	-1668	-1828	-1052	-1799	0	-1508
Kazakhstan	570	-880	-4857	-1473	-2184	570	-1765
Kenya	-248	-142	-362	-112	-136	0	-200
Kiribati	0	0	0	0	0	0	0
Kuwait	126	141	117	193	231	809	162
Kyrgyz Republic	-328	-481	-639	-904	-2113	0	-893
Lao People's Dem.Rep	0	0	0	0	0	0	0
Latvia	-1398	-1643	-810	-953	-1496	0	-1260
Lebanon	87	111	146	166	204	713	143
Lesotho	0	0	0	0	0	0	0
Liberia	-2	2	-38	2	3	7	-7
Libya	15	36	12	40	44	148	30
Lithuania	-2283	-2986	-2893	-3128	-4353	0	-3129
Macedonia, Fyr	-196	-154	-24	-21	-115	0	-102
Madagascar	103	115	140	177	225	760	152
Malawi	-3	-3	-2	3	-2	3	-1
Malaysia	7140	7346	14066	15473	13072	57097	11419
Maldives	1072	887	906	21	24	2911	582

Table 16: Non-normalized Estimates of Trade Mispricing Model (Net), 2002-06

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Mali	452	504	560	611	678	2805	561
Malta	-1847	-1479	-1750	-1274	-2663	0	-1802
Marshall Islands	0	0	0	0	0	0	0
Mauritania	55	69	90	104	128	446	89
Mauritius	-102	-268	-46	-81	19	19	-96
Mexico	26338	25631	28318	26022	26728	133037	26607
Micronesia	0	0	0	0	0	0	0
Moldova	-289	-390	-527	-541	-304	0	-410
Mongolia	-151	-170	-184	-290	174	174	-124
Montenegro	0	0	0	0	0	0	0
Morocco	-781	-359	-232	-602	-95	0	-414
Mozambique	-124	-155	-258	-306	-386	0	-246
Myanmar	-207	-241	-265	-280	-308	0	-260
Namibia	0	0	0	0	0	0	0
Nepal	391	281	299	296	233	1501	300
Nicaragua	421	464	263	758	830	2736	547
Niger	-181	-135	-28	-1	-1	0	-69
Nigeria	-6667	-1451	2199	2679	3281	8159	8
Oman	-2203	292	-813	-1205	-1443	292	-1074
Pakistan	-2491	-4321	-4773	-4192	-52	0	-3166
Palau	0	0	0	0	0	0	0
Panama	-8533	-10804	-13259	-15495	-17999	0	-13218
Papua New Guinea	-1075	-1339	-1704	-1965	-2405	0	-1697
Paraguay	-27	-195	-158	-24	1902	1902	300
Peru	-605	-703	-436	-271	-1310	0	-665
Philippines	763	913	2839	7097	4914	16526	3305
Poland	-5757	-7009	-12798	-25283	-32102	0	-16590
Qatar	-729	-967	-3470	5022	4081	9103	787
Romania	-399	-580	-1361	-4146	-8856	0	-3068
Russia	-19425	-21200	-23009	-42755	-42539	0	-29786
Rwanda	23	29	37	43	63	195	39
Samoa	-19	-4	-5	199	-3	199	34
São Tomé & Príncipe	0	0	0	0	0	0	0
Saudi Arabia	-7904	-6486	-4049	-147	-1032	0	-3924
Senegal	-289	-408	-518	-665	-563	0	-489
Serbia	0	0	0	0	0	0	0
Seychelles	205	119	55	58	69	506	101
Sierra Leone	10	14	17	21	27	89	18
Slovak Republic	290	216	288	-5745	-9541	794	-2898
Slovenia	-1126	-983	5	-4207	-5918	5	-2446
Solomon Islands	5	5	8	3	2	23	5
Somalia	39	49	65	73	90	315	63
South Africa	616	-597	3071	4678	6782	15147	2910
Sri Lanka	-795	-1000	-819	-1517	-1489	0	-1124

Table 16: Non-normalized Estimates of Trade Mispricing Model (Net), 2002-06

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
St. Kitts	1	1	0	-3	0	2	0
St. Lucia	3	3	4	4	5	19	4
St. Vincent & Grens.	-23	-99	-24	-144	-2	0	-59
Sudan	-13	-490	-655	-402	-7945	0	-1901
Suriname	-1	24	0	0	0	24	5
Swaziland	0	0	0	0	0	0	0
Syrian Arab Republic	969	1223	-2608	2	-1	2194	-83
Tajikistan	-53	-77	-90	-35	-582	0	-167
Tanzania	-420	43	49	-22	-145	92	-99
Thailand	377	1527	3902	8578	6857	21242	4248
Timor-Leste	0	0	0	0	0	0	0
Togo	-868	-514	-1015	-1195	-186	0	-755
Tonga	0	0	-3	0	0	0	-1
Trinidad & Tobago	1095	-57	-74	-83	-99	1095	157
Tunisia	-800	-774	-973	-1755	-1618	0	-1184
Turkey	-1063	-997	-1454	-3286	-5572	0	-2474
Turkmenistan	365	308	-76	-152	-182	674	53
Uganda	-99	66	-35	-37	-42	66	-29
Ukraine	-3979	-5469	-5976	-7616	-439	0	-4696
United Arab Emirates	-21657	-25700	-10394	-13974	-17434	0	-17832
Uruguay	-1	-406	-498	-476	-50	0	-286
Uzbekistan	0	0	-11	0	-1	0	-2
Vanuatu	1	-2	-8	-34	3	4	-8
Venezuela, Rep. Bol.	-1667	-2469	1485	986	-3312	2472	-995
Vietnam	-1572	-407	-1825	-2101	-2887	0	-1758
Yemen, Republic Of	-1802	24	-1376	-20	-1314	24	-898
Zambia	-283	326	537	1289	139	2291	402
Zimbabwe	197	-2412	269	244	1726	2436	5

*Source: IMF Balance Payment, International Finance Statistics, Direction of Trade Statistics,
World Economic Outlook databases, as well as World Bank Global Development Finance database.

Table 17: Normalized Estimates of Trade Mispricing Model (NET), 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Afghanistan, I.R. Of	0	0	0	0	0	0	0
Albania	0	0	0	0	0	0	0
Algeria	0	0	0	0	0	0	0
Angola	0	0	0	0	0	0	0
Antigua & Barbuda	0	0	0	0	0	0	0
Argentina	0	0	0	0	0	0	0
Armenia	0	0	0	0	0	0	0
Aruba	803	1195	2003	1670	1578	7250	1450
Azerbaijan, Rep. Of	0	0	0	0	0	0	0
Bahamas, The	73	84	127	128	156	567	113
Bahrain, Kingdom Of	0	0	0	0	0	0	0
Bangladesh	0	0	0	0	0	0	0
Barbados	287	321	348	526	17	1499	300
Belarus	0	0	0	0	0	0	0
Belize	0	0	0	0	0	0	0
Benin	0	0	0	0	0	0	0
Bhutan	0	0	0	0	0	0	0
Bolivia	0	0	0	0	0	0	0
Bosnia & Herzegovina	0	0	0	0	0	0	0
Botswana	0	0	0	0	0	0	0
Brazil	0	0	0	0	0	0	0
Brunei Darussalam	0	0	0	0	0	0	0
Bulgaria	0	0	0	0	0	0	0
Burkina Faso	0	0	0	0	0	0	0
Burundi	0	3	-36	50	117	170	27
Cambodia	0	0	0	0	0	0	0
Cameroon	0	0	0	0	0	0	0
Cape Verde	16	13	17	20	25	91	18
Central African Rep.	32	40	54	59	72	256	51
Chad	0	0	0	0	0	0	0
Chile	0	0	0	0	0	0	0
China,P.R.: Mainland	154442	184749	253259	282100	293047	1167598	233520
Colombia	0	0	0	0	0	0	0
Comoros	2	2	2	3	4	12	2
Congo, Dem. Rep. Of	0	0	0	0	0	0	0
Congo, Republic Of	-495	694	2155	23	26	2897	480
Costa Rica	2267	3417	4615	5743	105	16147	3229
Côte D'Ivoire	0	0	0	0	0	0	0
Croatia	0	0	0	0	0	0	0
Cyprus	0	0	0	0	0	0	0
Czech Republic	0	0	0	0	0	0	0
Djibouti	25	31	37	41	48	182	36
Dominica	0	0	0	0	0	0	0
Dominican Republic	0	0	0	0	0	0	0

Table 17: Normalized Estimates of Trade Mispricing Model (NET), 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Ecuador	0	0	0	0	0	0	0
Egypt	0	0	0	0	0	0	0
El Salvador	429	439	485	771	257	2382	476
Equatorial Guinea	0	0	0	0	0	0	0
Eritrea	0	0	0	0	0	0	0
Estonia	0	0	0	0	0	0	0
Ethiopia	308	83	4	776	727	1898	380
Fiji	0	0	0	0	0	0	0
Gabon	0	0	0	0	0	0	0
Gambia, The	2	3	3	4	5	17	3
Georgia	24	-68	66	66	594	750	137
Ghana	0	0	0	0	0	0	0
Grenada	17	19	21	23	25	106	21
Guatemala	1393	1277	1392	1532	134	5728	1146
Guinea	-1	-47	413	322	517	1252	241
Guinea-Bissau	9	12	16	17	21	75	15
Guyana	0	0	0	0	0	0	0
Haiti	0	0	0	0	0	0	0
Honduras	987	901	785	0	0	2673	535
Hungary	0	0	0	0	0	0	0
India	7881	9962	23173	27512	43941	112469	22494
Indonesia	0	0	0	0	0	0	0
Iran, I.R. Of	0	0	0	0	0	0	0
Iraq	0	0	0	0	0	0	0
Israel	0	0	0	0	0	0	0
Jamaica	294	270	403	485	190	1642	328
Jordan	0	0	0	0	0	0	0
Kazakhstan	0	0	0	0	0	0	0
Kenya	0	0	0	0	0	0	0
Kiribati	0	0	0	0	0	0	0
Kuwait	0	0	0	0	0	0	0
Kyrgyz Republic	0	0	0	0	0	0	0
Lao People's Dem.Rep	0	0	0	0	0	0	0
Latvia	0	0	0	0	0	0	0
Lebanon	0	0	0	0	0	0	0
Lesotho	0	0	0	0	0	0	0
Liberia	0	0	0	0	0	0	0
Libya	0	0	0	0	0	0	0
Lithuania	0	0	0	0	0	0	0
Macedonia, Fyr	0	0	0	0	0	0	0
Madagascar	103	115	140	177	225	760	152
Malawi	0	0	0	0	0	0	0
Malaysia	0	0	0	0	0	0	0
Maldives	1072	887	906	21	24	2911	582

Table 17: Normalized Estimates of Trade Mispricing Model (NET), 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
Mali	452	504	560	611	678	2805	561
Malta	0	0	0	0	0	0	0
Marshall Islands	0	0	0	0	0	0	0
Mauritania	0	0	0	0	0	0	0
Mauritius	0	0	0	0	0	0	0
Mexico	26338	25631	28318	26022	26728	133037	26607
Micronesia	0	0	0	0	0	0	0
Moldova	0	0	0	0	0	0	0
Mongolia	0	0	0	0	0	0	0
Montenegro	0	0	0	0	0	0	0
Morocco	0	0	0	0	0	0	0
Mozambique	0	0	0	0	0	0	0
Myanmar	0	0	0	0	0	0	0
Namibia	0	0	0	0	0	0	0
Nepal	391	281	299	296	233	1501	300
Nicaragua	421	464	263	758	830	2736	547
Niger	0	0	0	0	0	0	0
Nigeria	0	0	0	0	0	0	0
Oman	0	0	0	0	0	0	0
Pakistan	0	0	0	0	0	0	0
Palau	0	0	0	0	0	0	0
Panama	0	0	0	0	0	0	0
Papua New Guinea	0	0	0	0	0	0	0
Paraguay	0	0	0	0	0	0	0
Peru	0	0	0	0	0	0	0
Philippines	0	0	0	0	0	0	0
Poland	0	0	0	0	0	0	0
Qatar	0	0	0	0	0	0	0
Romania	0	0	0	0	0	0	0
Russia	0	0	0	0	0	0	0
Rwanda	23	29	37	43	63	195	39
Samoa	0	0	0	0	0	0	0
São Tomé & Príncipe	0	0	0	0	0	0	0
Saudi Arabia	0	0	0	0	0	0	0
Senegal	0	0	0	0	0	0	0
Serbia	0	0	0	0	0	0	0
Seychelles	205	119	55	58	69	506	101
Sierra Leone	10	14	17	21	27	89	18
Slovak Republic	0	0	0	0	0	0	0
Slovenia	0	0	0	0	0	0	0
Solomon Islands	0	0	0	0	0	0	0
Somalia	0	0	0	0	0	0	0
South Africa	0	0	0	0	0	0	0
Sri Lanka	0	0	0	0	0	0	0

Table 17: Normalized Estimates of Trade Mispricing Model (NET), 2002-06*

Countries	2002	2003	2004	2005	2006	Total IFF per country	Avg. IFF in IFF Yrs
St. Kitts	0	0	0	0	0	0	0
St. Lucia	0	0	0	0	0	0	0
St. Vincent & Grens.	0	0	0	0	0	0	0
Sudan	0	0	0	0	0	0	0
Suriname	0	0	0	0	0	0	0
Swaziland	0	0	0	0	0	0	0
Syrian Arab Republic	0	0	0	0	0	0	0
Tajikistan	0	0	0	0	0	0	0
Tanzania	0	0	0	0	0	0	0
Thailand	0	0	0	0	0	0	0
Timor-Leste	0	0	0	0	0	0	0
Togo	0	0	0	0	0	0	0
Tonga	0	0	0	0	0	0	0
Trinidad & Tobago	0	0	0	0	0	0	0
Tunisia	0	0	0	0	0	0	0
Turkey	0	0	0	0	0	0	0
Turkmenistan	0	0	0	0	0	0	0
Uganda	0	0	0	0	0	0	0
Ukraine	0	0	0	0	0	0	0
United Arab Emirates	0	0	0	0	0	0	0
Uruguay	0	0	0	0	0	0	0
Uzbekistan	0	0	0	0	0	0	0
Vanuatu	0	0	0	0	0	0	0
Venezuela, Rep. Bol.	0	0	0	0	0	0	0
Vietnam	0	0	0	0	0	0	0
Yemen, Republic Of	0	0	0	0	0	0	0
Zambia	-283	326	537	1289	139	2291	402
Zimbabwe	197	-2412	269	244	1726	2436	5

*Normalization is a two stage process. At the first stage, only countries with at least three years of capital flight out of five years pass through filtration to the second stage. During second stage, only those countries where capital flight exceeds 10 percent of their exports (f.o.b) are selected and included in the table.

Source: IMF Balance Payment, International Finance Statistics, Direction of Trade Statistics, World Economic Outlook databases, as well as World Bank Global Development Finance database.

Table 18: Non-Normalized Illicit Financial Flows, 2002-2006

No	Country	Average WB CED	Average TM GER	Average GER+CED
1	China,P.R.: Mainland	56,032	233,520	289,552
2	Saudi Arabia	54,258	889	55,147
3	Mexico	4,476	41,680	46,156
4	Russia	32,025	6,663	38,688
5	Malaysia	12,243	19,027	31,271
6	India	4,578	22,726	27,304
7	Kuwait	21,040	168	21,208
8	Venezuela, Rep. Bol.	15,896	906	16,802
9	Indonesia	4,984	10,361	15,345
10	Philippines	2,894	12,154	15,048
11	Poland	13,762	304	14,066
12	Hungary	13,460	0	13,460
13	Argentina	12,099	941	13,040
14	Nigeria	9,112	3,401	12,513
15	Kazakhstan	11,734	364	12,098
16	Turkey	9,546	1,529	11,075
17	Ukraine	8,519	28	8,547
18	Brazil	6,808	1,598	8,407
19	Chile	6,961	1,212	8,173
20	Czech Republic	5,811	2,023	7,834
21	Belarus	469	7,217	7,686
22	Qatar	0	6,863	6,863
23	Egypt	5,064	1,772	6,836
24	South Africa	2,572	3,872	6,445
25	Thailand	1,695	4,607	6,302
26	Croatia	5,149	205	5,354
27	Syrian Arab Republic	1,270	2,956	4,226
28	Panama	1,367	2,703	4,070
29	Colombia	2,559	1,296	3,855
30	Romania	3,836	0	3,836
31	Slovak Republic	2,994	526	3,520
32	Costa Rica	94	3,229	3,323
33	Brunei Darussalam	3,299	5	3,305
34	Libya	3,164	35	3,199
35	Morocco	2,109	985	3,093
36	Pakistan	2,358	709	3,067
37	Israel	2,463	560	3,023
38	Azerbaijan, Rep. Of	640	2,194	2,834
39	Latvia	1,988	834	2,822
40	Angola	2,730	34	2,764
41	Uruguay	2,407	213	2,620
42	Bulgaria	1,974	518	2,492
43	Aruba	224	2,246	2,469
44	Bangladesh	1,689	654	2,344
45	Peru	1,308	919	2,227
46	Lebanon	1,953	158	2,111
47	Congo, Republic Of	1,072	987	2,060
48	Honduras	184	1,674	1,858
49	Oman	1,602	224	1,826
50	Dominican Republic	1,816	5	1,821
51	Tunisia	1,727	0	1,727
52	Bahrain, Kingdom Of	1,512	0	1,512
53	Lithuania	1,457	0	1,457

Table 18: Non-Normalized Illicit Financial Flows, 2002-2006

No	Country	Average WB CED	Average TM GER	Average GER+CED
54	Ecuador	818	550	1,368
55	Ethiopia	910	423	1,333
56	El Salvador	662	630	1,292
57	Guatemala	0	1,187	1,187
58	Gabon	996	35	1,031
59	Malta	543	471	1,014
60	Zambia	308	678	986
61	Cyprus	214	766	980
62	Bolivia	787	111	898
63	Vietnam	876	0	876
64	Paraguay	260	598	857
65	Cameroon	632	210	842
66	Jamaica	477	363	840
67	Sudan	740	90	830
68	Jordan	577	174	751
69	Zimbabwe	0	750	750
70	Yemen, Republic Of	180	560	740
71	Nicaragua	0	723	723
72	Namibia	688	0	688
73	Kenya	524	162	686
74	Tanzania	551	109	660
75	Mali	57	573	629
76	Myanmar	624	5	628
77	Estonia	0	610	610
78	Mozambique	397	207	604
79	Nepal	206	394	600
80	Botswana	597	0	597
81	Maldives	0	593	593
82	Georgia	55	472	527
83	Ghana	429	52	482
84	Macedonia, Fyr	173	284	457
85	Cambodia	75	382	457
86	Guinea	67	363	430
87	Turkmenistan	0	429	429
88	Mauritius	348	67	414
89	Mongolia	224	174	398
90	Armenia	194	204	397
91	Sri Lanka	358	0	358
92	Slovenia	312	44	356
93	Moldova	115	230	345
94	Madagascar	100	226	326
95	Barbados	0	307	307
96	Tajikistan	149	128	277
97	Papua New Guinea	247	23	270
98	Trinidad & Tobago	0	225	225
99	Uganda	178	39	217
100	Samoa	136	80	216
101	Algeria	0	203	203
102	Seychelles	82	110	192
103	St. Vincent & Grens.	10	180	190
104	Togo	49	118	167
105	Rwanda	62	105	167
106	Benin	120	43	163

Table 18: Non-Normalized Illicit Financial Flows, 2002-2006

No	Country	Average WB CED	Average TM GER	Average GER+CED
107	Swaziland	156	0	156
108	Iran, I.R. Of	0	145	145
109	Djibouti	82	38	119
110	Bahamas, The	0	117	117
111	Burundi	65	45	110
112	Lesotho	105	0	105
113	Mauritania	0	102	102
114	Kyrgyz Republic	86	16	101
115	Niger	71	30	101
116	Haiti	98	0	98
117	Fiji	81	13	94
118	Sierra Leone	69	22	92
119	Senegal	78	9	88
120	Albania	38	39	76
121	Bosnia & Herzegovina	0	71	71
122	Cape Verde	52	18	70
123	Somalia	0	63	63
124	Liberia	60	3	63
125	Burkina Faso	0	57	57
126	Gambia, The	52	3	56
127	Central African Rep.	0	51	51
128	Solomon Islands	27	21	49
129	Grenada	22	26	47
130	Dominica	34	2	36
131	Belize	34	1	35
132	Guyana	34	1	35
133	Guinea-Bissau	12	15	27
134	Vanuatu	9	3	12
135	St. Lucia	3	4	7
136	Suriname	0	5	5
137	Malawi	2	2	5
138	Congo, Dem. Rep. Of	0	5	5
139	Equatorial Guinea	0	4	4
140	St. Kitts	0	4	4
141	Afghanistan, I.R. Of	0	3	3
142	Comoros	0	3	3
143	Iraq	0	2	2
144	Tonga	0	1	1

CED-GER country estimates that are zero are not listed in this table.

Source: Direction of Trade Statistics, Balance of Payments, International Finance Statistics databases of the IMF, as well as Global Development Finance database of the World Bank

Table 19: Normalized Illicit Financial Flows, 2002-2006

No	Country	Average WB CED	Average TM GER	Average GER (10%) + CED (10%)
1	China,P.R.: Mainland	0	233,520	233,520
2	Saudi Arabia	54,258	0	54,258
3	Mexico	0	41,680	41,680
4	Russia	32,025	0	32,025
5	India	0	22,726	22,726
6	Kuwait	21,040	0	21,040
7	Malaysia	0	19,027	19,027
8	Venezuela, Rep. Bol.	15,896	0	15,896
9	Poland	13,762	0	13,762
10	Hungary	13,460	0	13,460
11	Philippines	0	12,154	12,154
12	Argentina	12,099	0	12,099
13	Kazakhstan	11,734	0	11,734
14	Indonesia	0	10,361	10,361
15	Turkey	9,546	0	9,546
16	Nigeria	9,112	0	9,112
17	Ukraine	8,519	0	8,519
18	Belarus	0	7,217	7,217
19	Chile	6,961	0	6,961
20	Egypt	5,064	1,772	6,836
21	Croatia	5,149	0	5,149
22	Panama	1,367	2,703	4,070
23	Romania	3,836	0	3,836
24	Brunei Darussalam	3,299	0	3,299
25	Costa Rica	0	3,229	3,229
26	Slovak Republic	2,994	0	2,994
27	Syrian Arab Republic	0	2,956	2,956
28	Latvia	1,988	834	2,822
29	Angola	2,730	0	2,730
30	Colombia	2,559	0	2,559
31	Aruba	224	2,246	2,469
32	Uruguay	2,407	0	2,407
33	Pakistan	2,358	0	2,358
34	Morocco	2,109	0	2,109
35	Congo, Republic Of	1,072	987	2,060
36	Bulgaria	1,974	0	1,974
37	Lebanon	1,953	0	1,953
38	Dominican Republic	1,816	0	1,816
39	Tunisia	1,727	0	1,727
40	Bangladesh	1,689	0	1,689
41	Honduras	0	1,674	1,674
42	Oman	1,602	0	1,602
43	Bahrain, Kingdom Of	1,512	0	1,512
44	Lithuania	1,457	0	1,457
45	El Salvador	662	630	1,292
46	Guatemala	0	1,187	1,187
47	Malta	543	471	1,014
48	Gabon	996	0	996
49	Paraguay	260	598	857
50	Jamaica	477	363	840
51	Bolivia	787	0	787
52	Cyprus	0	766	766

Table 19: Normalized Illicit Financial Flows, 2002-2006

No	Country	Average WB CED	Average TM GER	Average GER (10%) + CED (10%)
53	Zimbabwe	0	750	750
54	Sudan	740	0	740
55	Nicaragua	0	723	723
56	Namibia	688	0	688
57	Zambia	0	678	678
58	Azerbaijan, Rep. Of	640	0	640
59	Myanmar	624	0	624
60	Nepal	206	394	600
61	Botswana	597	0	597
62	Maldives	0	593	593
63	Jordan	577	0	577
64	Mali	0	573	573
65	Georgia	0	472	472
66	Macedonia, Fyr	173	284	457
67	Ethiopia	0	423	423
68	Armenia	194	204	397
69	Cambodia	0	382	382
70	Guinea	0	363	363
71	Moldova	115	230	345
72	Barbados	0	307	307
73	Tajikistan	149	128	277
74	Madagascar	0	226	226
75	Mongolia	224	0	224
76	Samoa	136	80	216
77	Mozambique	0	207	207
78	Seychelles	82	110	192
79	St. Vincent & Grens.	0	180	180
80	Uganda	178	0	178
81	Djibouti	82	38	119
82	Togo	0	118	118
83	Bahamas, The	0	117	117
84	Burundi	65	45	110
85	Rwanda	0	105	105
86	Lesotho	105	0	105
87	Sierra Leone	69	22	92
88	Kyrgyz Republic	86	0	86
89	Burkina Faso	0	57	57
90	Gambia, The	52	3	56
91	Central African Rep.	0	51	51
92	Belize	34	0	34
93	Guinea-Bissau	12	15	27
94	Grenada	0	26	26
95	Solomon Islands	0	21	21
96	Cape Verde	0	18	18
97	Vanuatu	9	3	12
98	St. Kitts	0	4	4
99	Comoros	0	3	3

CED-GER country estimates that are zero are not listed in this table.

Source: Direction of Trade Statistics, Balance of Payments, International Finance Statistics databases of the IMF, as well as Global Development Finance database of the World Bank

Table 20. Illicit Financial Flows From Countries Not Included in Overall Average Normalized Estimates for 2002-2006 (in millions of US dollars)

	Avg. 2002-2006 Non-normalized Illicit Flow		
Countries Normalized Out	**CED**	**GER**	**Total**
Albania	38	39	77
Bosnia & Herzegovina	0	71	71
Brazil	**6,808**	**1,598**	**8,406**
Czech Republic	**5,811**	**2,023**	**7,834**
Dominica	34	2	36
Ecuador	818	550	1,368
Estonia	0	610	610
Fiji	81	13	94
Ghana	429	52	481
Guyana	34	1	35
Haiti	98	0	98
Israel	**2,463**	**560**	**3,023**
Kenya	524	162	686
Libya	**3,164**	**35**	**3,199**
Mauritius	348	67	415
Niger	71	30	101
Peru	1,308	919	2,227
Senegal	78	9	87
Slovenia	312	44	356
South Africa	**2,572**	**3,872**	**6,444**
Sri Lanka	358	0	358
St. Lucia	3	4	7
Suriname	0	5	5
Tanzania	551	109	660
Thailand	**1,695**	**4,607**	**6,302**
Tonga	0	1	1
Vietnam	876	0	876
Yemen, Republic Of	180	560	740
Total	**28,654**	**15,943**	**44,597**

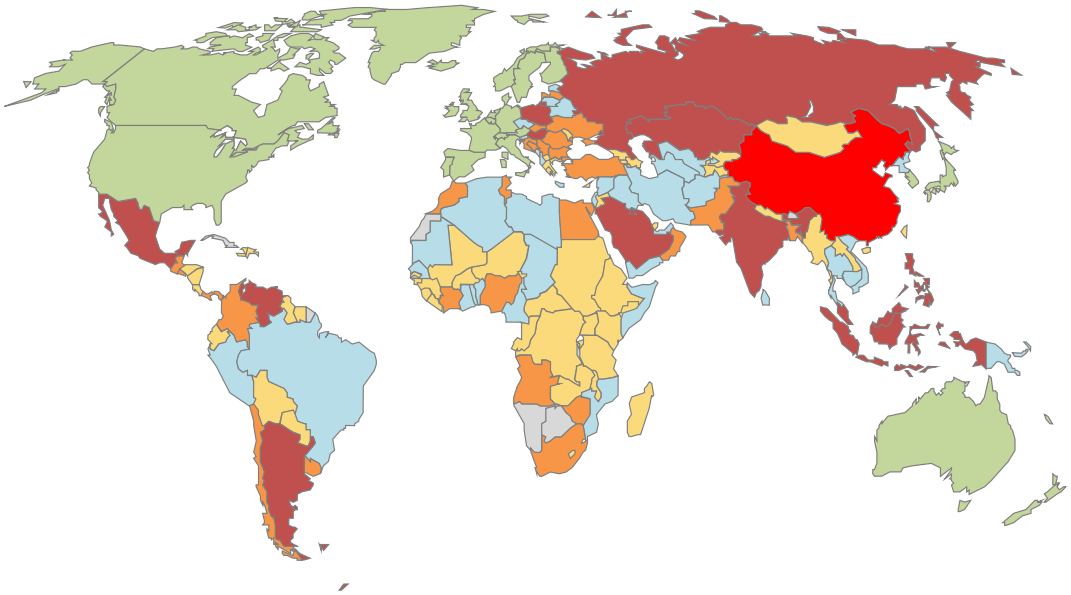
Source: Global Financial Integrity (GFI) Staff Estimates.

Global Financial Integrity Advisory Board

Global Financial Integrity
A Program of the Center for International Policy

1319 18th Street, NW - Suite 200 - Washington, DC 20036 - 202.293.0740
www.gfip.org

Illicit Financial Flows from Developing Countries: 2002—2006



www.gfip.org