

GLOBAL FINANCIAL INTEGRITY

Illicit Financial Flows from Developing Countries: 2002-2011



Dev Kar and Brian LeBlanc

December 2013



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*Global Financial Integrity Wishes to Thank the Ford Foundation and
the Financial Transparency Coalition for Supporting this Project*



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¹ Dev Kar, a former Senior Economist at the International Monetary Fund, is Chief Economist at Global Financial Integrity and Brian LeBlanc is a Junior Economist at GFI. Raymond Baker and other GFI staff provided helpful comments which are gratefully acknowledged. Any remaining errors are the authors' responsibility.



Global Financial Integrity (GFI) is pleased to present here its analysis of **Illicit Financial Flows from Developing Countries: 2002-2011**.

We estimate that illicit financial outflows from the developing world totaled a staggering US\$946.7 billion in 2011, with cumulative illicit financial outflows over the decade between 2002 and 2011 of US\$5.9 trillion. This gives further evidence to the notion that illicit financial flows are the most devastating economic issue impacting the global South.

Large as these numbers are, perhaps the most distressing take-away from the study is just how fast illicit financial flows are growing. Adjusted for inflation, illicit financial flows out of developing countries increased by an average of more than 10 percent per year over the decade. Left unabated, one can only expect these numbers to continue an upward trend. We hope that this report will serve as a wake-up call to world leaders on the urgency with which illicit financial flows must be addressed.

Each year we strive to present the most accurate estimates of the amount of money passing illicitly out of poor countries due to crime, corruption, and tax evasion. In last year's study, we introduced the Hot Money Narrow model—in place of the World Bank Residual model which we had utilized in previous studies—as a more precise method for measuring strictly illicit flows.

Our team of economists led by Dr. Dev Kar continues to make advances in honing our estimates. This year we add improvements to our research methodology centered around trade misinvoicing. Previously, by utilizing aggregated bilateral trade data rather than disaggregated bilateral trade data, our methodology had a tendency to significantly understate the trade component of illicit financial outflows by inadvertently netting illicit inflows from illicit outflows between many countries. As such, this is the first GFI study to utilize disaggregated bilateral trade data for 17 of 151 countries in the study which report in the necessary detail.

Moreover, our earlier estimates had the potential to overstate illicit financial flows when trade was misinvoiced between two developing countries. To adjust appropriately, this study is the first of GFI's to look at misinvoicing between developing countries and advanced economies, and then scale those findings up to account for the percent of trade conducted between developing economies.

Finally, by previously omitting data from Hong Kong as a trade intermediary, our estimates had the potential to overstate illicit outflows from many Asian nations. For the first time we are able

to incorporate trade data from the Hong Kong Customs and Excise Department into our trade misinvoicing estimates, providing a more accurate estimate of this major component of illicit flows.

GFI's data, however constructed, remain extremely conservative, as we still do not capture the misinvoicing of trade in services (rather than the trade in goods), same-invoice trade mispricing (such as transfer mispricing), hawala transactions, and dealings conducted in bulk cash. This means that much of the proceeds of drug trafficking, human smuggling, and other criminal activities which are often settled in cash are not included in these estimates. It also means that much of abusive transfer pricing conducted between arms of the same multinational corporation are not captured in our figures.

While progress has been made by world leaders over the past year in agreeing to some improvements in measures to achieve greater global financial transparency, much of the conversation has been focused on curtailing abuses within the developed world. As this report highlights, it is urgent that developing nations be brought fully into the discussion.

We thank Dev Kar and Brian LeBlanc for their excellent work in producing this analysis. The support of the Ford Foundation and the Financial Transparency Coalition is gratefully acknowledged and appreciated.

Raymond W. Baker

President

Global Financial Integrity

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Abstract

This update on illicit financial flows from developing countries, the fourth in an annual series, finds that US\$946.7 billion in illicit outflows left the developing world in 2011, up from US\$832.4 billion in 2010. Compared to our 2012 report, this report utilizes significant enhancements to the methodology for estimating trade misinvoicing and analyzes for the first time possible drivers of illicit flows using panel data from 55 developing countries for a ten-year period (2002-2011). The revision to the methodology of estimating trade misinvoicing (which comprises about 80 percent of illicit outflows) reduces China's outsized role in driving illicit financial flows, due mainly to our previous studies not specifically incorporating the use of Hong Kong as a trade entrepôt, without significantly impacting our total illicit financial flows figure. In that respect, this is probably the first study that has explicitly incorporated data from the Hong Kong Census and Statistics Department to correct for trade distortions that arise from Hong Kong's role as a trade entrepôt. While regression analysis using panel data finds scant evidence that macroeconomic conditions drive illicit flows, certain regulatory measures (such as export proceeds surrender requirements) and governance-related factors (such as corruption) seem to do so. There is scope to extend this research on the drivers of illicit flows by incorporating more countries and data series and by extending the time period analyzed to twenty years or longer.

Executive Summary

This annual update on illicit financial flows from developing countries incorporates a number of methodological enhancements and analyzes possible drivers of trade misinvoicing, by far the largest component of illicit flows. While there are no changes to the basic model used (e.g., coverage of countries, focus on gross outflows only) since the first update was published in January 2011, the current version adjusts previous estimates of trade misinvoicing by explicitly recognizing the role of Hong Kong as a trade entrepôt. Furthermore, we now estimate trade misinvoicing for major developing countries that report bilateral trade data based on their trade with each advanced country (i.e., on a country-by-country basis). The previous method involved estimating misinvoicing by comparing each developing country's trade with the world in the aggregate. While the "Hong Kong effect" reduces our estimate of overall trade misinvoicing, the country-by-country approach increases the total amount of outflows identified; on net, these effects combine to produce a much more accurate and representative depiction of the global problem that illicit flows pose to the developing world.

Nominal illicit outflows from developing countries amounted to US\$946.7 billion in 2011, up 13.7 percent from US\$832.4 in 2010. Controlled for inflation, illicit outflows from developing countries increased in real terms by about 10.2 percent per annum.

We find that the pattern of illicit outflows, trend rate of growth, and impact in terms of GDP all vary significantly among the five regions. **Asia accounts for 39.6 percent of total illicit outflows from developing countries compared to 61.2 percent of such outflows in the 2012 IFF Update.** Asia's much larger share of total illicit outflows in the 2012 IFF Update resulted from an overestimation of China's trade misinvoicing due to the "Hong Kong effect." Correcting for the Hong Kong effect sharply reduces the share of outflows from Asia. Nevertheless, Asia still has the largest share of illicit flows among the regions, and six of the top 15 exporters of illicit capital are Asian countries (China, Malaysia, India, Indonesia, Thailand, and the Philippines).

Developing Europe (21.5 percent) and the Western Hemisphere (19.6 percent) contribute almost equally to total illicit outflows. While outflows from Europe are mainly driven by Russia, those from the Western Hemisphere are driven by Mexico and Brazil.

The Middle East and North Africa (MENA) region accounts for 11.2 percent of total outflows on average. MENA's share increased significantly from just 3 percent of total outflows in 2002, reaching a peak of 18.5 percent in 2009, before falling to 12 percent in 2011. **In comparison, Africa's share increased from just 3.9 percent in 2002, reaching a peak of 11.1 percent just before the Great Recession set in (2007), before declining to 7 percent in 2011, roughly on par with its average of 7.7 percent over the decade.**

The volume of total outflows as a share of developing countries' GDP increased from 4.0 percent in 2002 to 4.6 percent in 2005. Since then, barring a few upticks, illicit outflows have generally been on a declining trend relative to GDP, and were 3.7 percent in 2011.

The ranking of various regions based on their respective IFFs to GDP ratios looks quite different from the ranking based on the volume of outflows. **For instance, while Africa has the smallest nominal share of regional illicit outflows (7.7 percent) over the period studied, it has the highest average illicit outflows to GDP ratio (5.7 percent), suggesting that the loss of capital has an outsized impact on the continent.** Illicit outflows at an average of 4.5 percent of regional GDP also significantly impact developing Europe. Outflows per annum from Asia amount to an average of 4.1 percent of regional GDP, and leakages of illicit capital from MENA and the Western Hemisphere equal about 3.5 percent of regional GDP. However, in the case of MENA, outflows as percent of GDP increased significantly from 1 percent in 2002 to 6.8 percent in 2009, before declining to 3.9 percent in 2011. In contrast, barring a few upticks, outflows from the Western Hemisphere as a share of regional GDP have declined steadily from 4.1 percent in 2002 to 2.6 percent in 2011.

The MENA region registered the fastest trend rate of growth in illicit outflows over the period studied (31.5 percent per annum) followed by Africa (20.2 percent), developing Europe (13.6 percent), Asia (7.5 percent), and Latin America (3.1 percent). The sharply faster rate of growth in illicit outflows from the MENA region is probably related to the rise in oil prices.

The 2012 IFF Update showed that certain MENA countries like Saudi Arabia, UAE, and Qatar can have large errors and omissions due to the incorrect or incomplete accounting of sovereign wealth fund transactions in the balance of payments. Therefore, including these countries along with other countries that do not have this issue may distort the ranking of exporters of illicit capital. If we exclude these countries, then cumulative outflows from the top fifteen exporters of illicit capital amount to US\$4.2 trillion over the decade ending 2011 comprising slightly over 70 percent of total outflows. The top three exporters of illicit capital were China (US\$1,076 billion), Russia (US\$881 billion), and Mexico (US\$462 billion). **Six of the top 15 exporters of illicit capital are in Asia (China, Malaysia, India, Indonesia, Thailand, and the Philippines), two are in Africa (Nigeria and South Africa), four are in Europe (Russia, Belarus, Poland, and Serbia), two are in the Western Hemisphere (Mexico and Brazil), and one is in the MENA region (Iraq).**

Trade misinvoicing comprises the major portion of illicit flows (roughly 80 percent on average). Balance of payments leakages (Hot Money Narrow measure) fluctuate considerably and have generally trended upwards from just 14.2 percent of total outflows in 2002 to 19.4 percent in 2011. However, there is little reason to believe that purely statistical errors in compiling balance of payments data have trended upwards for developing countries as a whole.

The study finally focuses on possible drivers of illicit flows using a cross section of 55 developing countries for which data are available for the ten year period 2002-2011. Regression analyses using the panel data find scant evidence that macroeconomic drivers impact trade misinvoicing. Rather, we find trade misinvoicing to be driven largely by a set of four factors—three of a regulatory nature and one governance-related. The regulatory drivers are the export proceeds surrender requirement (EPSR) and the extent of capital account openness, while the governance related driver is the state of overall governance in the country, which we represent with the World Bank Control of Corruption indicator.

Although there are some serious limitations in formulating the EPSR as a dummy variable, we find that exporters seem to view it as a confiscatory measure. Hence, they seek to circumvent it by retaining funds abroad through export under-invoicing.

The panel data regressions also show that an increase in corruption increases trade misinvoicing while capital account openness leads to greater export misinvoicing in both directions if openness is not accompanied by stronger governance. In fact, as the experience of developed countries show, greater openness and liberalization in an environment of weak regulatory oversight can actually generate more illicit flows.

I. Introduction

1. The problem of illicit financial flows (IFFs) has attracted increasing attention in recent years from policymakers and international organizations. At the 10th Plenary Meeting of the Leading Group on Innovative Financing for Development in Madrid on February 27, 2012, the Secretary General of the United Nations, Ban Ki-moon, noted that curbing illicit financial flows shows great promise as an additional and innovative revenue source to supplement official development assistance (ODA). He clearly recognized that such additional sources of revenue are among the most important necessities for future development and recommended that countries move quickly to implement policies to curtail illicit flows. At the 25th Meeting of the International Monetary and Financial Committee of the IMF in Washington, DC on April 21, 2012, Helen Clark, the Administrator of the United Nations Development Programme, recognized that curbing illicit flows can help bridge the gap between official development assistance and the level of resources needed to achieve the Millennium Development Goals (MDGs), particularly at a time when fiscal pressures are hindering donor countries from expanding ODA.
2. Illicit flows constitute a major source of domestic resource leakage, which drains foreign exchange, reduces tax collections, restricts foreign investments, and worsens poverty in the poorest developing countries. Illicit flows are all unrecorded private financial outflows involving capital that is illegally earned, transferred, or utilized, generally used by residents to accumulate foreign assets in contravention of applicable capital controls and regulatory frameworks. Thus, even if the funds earned are legitimate, such as the profits of a legitimate business, their transfer abroad in violation of exchange control regulations or corporate tax laws would render the capital illicit.
3. IFFs are difficult to estimate statistically due to the fact that many illicit transactions tend to be settled in cash, as parties involved in such transactions take great pains to ensure that there is no incriminating paper trail. Hence, economic methods and data sources tend to significantly understate IFFs. In order to avoid understating the problem of illicit flows, we shall always use the robust (non-normalized) estimate of IFFs rather than the conservative (or normalized) estimates (see paragraph 6).
4. The present study makes important improvements to the methodology of estimating IFFs used in previous studies, including the one published by Global Financial Integrity (GFI) in December 2012 (*Illicit Financial Flows from Developing Countries: 2001-2010*, henceforth the “2012 IFF Update”). For this reason, estimates of illicit flows provided here cannot be strictly compared to those in previous IFF updates.
5. The report is organized as follows: Section II discusses the methodology used in this report to calculate IFFs and points out the changes implemented relative to the 2012 IFF Update.

Section III describes trends in illicit financial flows over the period studied, 2002-2011. Section IV analyzes the drivers of trade misinvoicing, a key conduit for IFFs, using various panel regressions. The final section summarizes the main conclusions of this study.

II. Methodology

6. There are two broad channels through which capital can flow illicitly out of a country in a measurable manner – leakages from the balance of payments and the deliberate misinvoicing of external trade. Note that we do not net out illicit inflows from illicit outflows when estimating how much capital is leaving the developing world each year. This methodology differs from academic literature on capital flight, in which inflows and outflows of capital are netted out. Our focus on gross outflows is based on the premise that illicit inflows do not provide a benefit that offsets the initial loss of capital through outflows, as they cannot be taxed or used to boost productive capacity. Instead, illicit inflows are much more likely to drive the underground economy than be invested in the official economy. Therefore, our estimates of both balance of payments leakages and trade misinvoicing are based on gross outflows only.
7. There are two methods of capturing leakages of capital from the balance of payments – the World Bank Residual (WBR) method and the Hot Money Narrow (HMN) method. The reasons for excluding the WBR method based on the change in external debt (CED) were discussed at length in Section II of the 2012 IFF Update. Nevertheless, they are worth recapitulating briefly. In essence, the WBR/CED approach may not exclude legitimate financial flows that are incorrectly recorded in the balance of payments. Claessens and Naude (1992) show that the balance of payments identity (essentially, “source of funds equals use of funds”) and nomenclature necessarily imply that some of the gap between a country’s source of funds and use of funds may also include legitimate capital flows. As we are only concerned with the illicit portion of capital flight, the narrower HMN estimate based on the Net Errors and Omissions (NEOs) term in the balance of payments is a more suitable measure of such flows.
8. The main drawback of the HMN approach is that NEOs not only reflect unrecorded illicit flows but also errors in recording balance of payments transactions. It is impossible to disaggregate the portion of statistical errors inherent in the NEOs from illicit flows. Nevertheless, economists have used the HMN measure because its results have been consistently negative and increasing for many developing countries, representing large illicit outflows, and there is no reason to believe that errors in statistical recording have increased. In fact, the statistical capacities of developing countries have strengthened through technical assistance provided by international organizations and through better data mining and processing, suggesting that the influence of statistical errors on the HMN measure should have decreased over time.
9. Consistent with other studies on capital flight, we supplement the HMN estimates with estimates of the deliberate misinvoicing of a country’s exports and imports. Bhagwati (1964) and others have shown that trade misinvoicing is one of the key conduits through which economic agents illegally move money out of (and into) developing countries. Traders can

move money out of a country through *under*-invoicing exports or *over*-invoicing imports. Likewise, traders can move money into a country through *over*-invoicing exports or *under*-invoicing imports. Since the act of deliberately falsifying invoices is illegal in most countries, we consider our trade misinvoicing estimates to reflect completely illicit outflows.

10. Because estimates of illicit outflows are inherently imprecise, we present a lower and upper bound of such outflows. We apply a normalization process to filter out estimates that are less than or equal to 10 percent of a country's exports. This process yields the lower bound of illicit outflows from a country or region. The 10 percent threshold was not chosen arbitrarily but was based on the findings in the IMF Committee on Balance of Payments Statistics Annual Reports. For instance, the 2012 Annual Report shows that the global good balance (exports minus imports), which should be zero as the exports of all countries must equal imports by others for the world as a whole, averages around 1.5 percent of world exports. If this discrepancy is due solely to statistical errors, then such errors are unlikely to exceed 1.5 percent of exports on average. In contrast, the filter used for normalization accepts trade misinvoicing estimates that are equal to or more than 10 percent of a country's exports as likely due to illicit flows, providing a much more conservative estimate. Non-normalized illicit outflows that do not pass through such a filter comprise the upper bound of transfers from the country through trade misinvoicing.
11. There are two important methodological changes between this report and the 2012 IFF Update. The first involves a revision of which countries, or country groups, are used as trading partners for the basis of our Gross Excluding reversals (GER) method. The need for this change resulted from acknowledging potential complications arising through comparing trade between two developing countries, and also from problems arising through using disaggregated, versus aggregated, trade data (see paragraphs 12-14 for a detailed explanation). The second adjustment became necessary because the use of Hong Kong as a trade entrepôt *overstated* illicit outflows through trade misinvoicing (see paragraphs 15–17 on the “Hong Kong effect”).
12. Previous IFF updates estimated trade misinvoicing for each country in relation to its exports and imports with that of the world as a *group* using the IMF's Direction of Trade Statistics (DOTS). Using the world as a group *understates* the amount of gross outflows through trade misinvoicing because traders within a country may bring in capital illicitly from some trading partners and move capital out illicitly into others. To illustrate, consider a Country A with only two trading partners, Country B and Country C. Now, assume that a comparison of bilateral trade between Country A and Country B shows a \$100 *outflow* from Country A while comparison of the bilateral trade between Country A and Country C shows a \$100 *inflow* from Country C. If we were to estimate Country A's trade misinvoicing figures based on its trade with the whole world (Country B's trade plus Country C's trade), it would appear as if Country

A has no trade misinvoicing. For this reason, we will now estimate trade misinvoicing by using data for countries' individual trading partners instead of the world totals whenever such data is available. This has had a large impact on our IFF figures for many countries. Russia's figures, for example, are more than double under the new methodology than in previous updates.

13. The underlying assumption behind all trade misinvoicing models is that many residents in weakly governed countries prefer to acquire foreign assets in an advanced economy rather than domestic assets. In contrast, if the countries on both sides of a trade transaction have serious governance issues (such as two developing countries), then a comparison of their bilateral trade data cannot reveal from which country capital is being transferred in an illicit manner (Bhagwati, 1964). Since the existence of import over-invoicing in one country is mathematically equivalent to export under-invoicing in the other (both indicative of an illicit outflow), one is never sure which side of the equation is to be believed. It is not that both parties cannot misinvoice trade at the same time—they can and sometimes do, in a phenomenon known as “same-invoice faking”—but bilateral trade discrepancies cannot be the basis for estimating illicit flows if there is such a “double coincidence of wants” for foreign assets. Thus, we choose to calculate trade misinvoicing estimates only between developing countries and advanced economies and then proportionately scale the estimates to the developing countries' total trade. This approach has also been adopted by Ndikumana and Boyce (2002) and others.
14. Furthermore, the “country-by-country” approach can only be applied for developing countries that consistently report their merchandise trade on a bilateral basis. However, a majority of developing countries do not do this or only report data intermittently. Of the 150 developing countries for which we estimate IFF figures, only 17 report bilateral trade data that covers the time period of this study (2002-2011). For the majority of developing countries, we are compelled to apply the previous methodology of comparing total trade against world totals. The mix of methodologies employed in this study is not problematic, however, as any inaccuracy it contributes would lead to underestimated trade misinvoicing figures. Additionally, this potential understatement is unlikely to be significant due to the fact that eight of the top eleven exporters of illicit capital report bilateral trade data.
15. The second adjustment to the methodology is necessary due to the “Hong Kong effect.” The revision takes into account the bilateral trade discrepancies that arise due to the re-exports of goods through Hong Kong. Interested readers should refer to Appendix 2 for a detailed discussion. In short, the use of Hong Kong as a trade entrepôt creates the appearance of trade misinvoicing due to the fact that goods merely passing through Hong Kong as re-exports to their ultimate destination (say, the United States) are recorded differently by the country of origin (say, China) and the country of consignment (the United States). This

discrepancy between how China and the United States record the re-exported goods creates artificial, rather than actual, trade misinvoicing, thereby overstating illicit outflows from China.

16. The Hong Kong effect is most pronounced in the case of China, but not limited to Chinese goods. Over the period of 2001 to 2012, approximately \$3.61 trillion worth of merchandise was re-exported through Hong Kong in this manner, 62 percent of which originated in China. A few researchers have attempted to correct for the re-exports of Chinese goods through Hong Kong when calculating trade misinvoicing estimates, but none of the existing methods account for the re-exports of any other country that uses Hong Kong as an entrepôt. To our knowledge, this is the first paper that uses actual data from the Hong Kong Census and Statistics Department to correct for any artificial trade misinvoicing created by the use of Hong Kong as an entrepôt for all developing countries. For instance, India, the Philippines, and Thailand re-exported a total of \$286 billion worth of goods through Hong Kong over the same period.
17. It is important to note, however, that our estimates only correct for re-exports through Hong Kong and not for re-exports from other trade entrepôts such as Singapore and Dubai. However, Hong Kong is by far the largest re-exporter by volume of the three aforementioned trade entrepôts. It is also the only entrepôt that records re-export data by country of origin and country of destination, which allows researchers to estimate trade misinvoicing using bilateral trade data (this data is available, for a fee, from the Hong Kong Census and Statistics Department). While Singapore's re-exports average 43 percent of its total trade, Hong Kong's re-exports are close to 97 percent of its total trade. Furthermore, only a fraction of Singapore's re-exports involve developing countries. For this reason, we do not believe that other entrepôts significantly affect our global estimates of illicit flows, although we plan to continue to incorporate new re-export data from other entrepôts as it becomes available.
18. These two methodological changes tend to impact illicit outflows from developing countries in opposite directions, with the net effect varying significantly by country. On the one hand, the "Hong Kong effect" greatly reduces China's contribution to global illicit flows, driving down global totals and Asia's share in illicit outflows. On the other, analyzing trade misinvoicing by developing countries with each advanced country (the "country-by-country" approach) increases illicit outflows from many large, weakly governed countries such as Russia and India.

III. Illicit Financial Flows from Developing Countries

19. In this section, we begin by pointing out the differences between the 2012 IFF Update and the present study in our estimates of illicit flows. We then discuss the pattern of illicit outflows from developing countries and regions, highlighting the main trends. The section concludes with a ranking of countries based on our revised methodology for estimating trade misinvoicing, pointing out any major changes from the ranking in the 2012 IFF Update.
20. As noted in paragraph 2, estimates of illicit outflows are likely to be understated for a number of reasons. The trends and patterns of illicit flows discussed in this section are therefore based on the non-normalized (or robust) Hot Money Narrow (HMN) plus Gross Excluding Reversals (GER) estimates, although the normalized (or conservative) measure is also included for reference. Moreover, while our yearly estimates are presented in nominal terms, any discussion regarding trends will be based on real figures, adjusted for inflation to constant 2005 dollars.

A. Trends and Patterns

21. The overall differences between our estimates of total illicit flows from all developing countries under the methodologies in this report and in the 2012 IFF Update are minor (Table 1). We estimate that the average illicit outflows per year are approximately 12 percent lower using the current methodology compared to the methodology used in 2012. This difference has narrowed in recent years, however, to between 0.7 to 3.1 percent mostly through China's decreased use of Hong Kong as a trade entrepôt. The share of Hong Kong re-exports of Chinese goods has declined from about 61 percent in 1995 to less than 12 percent in 2008 (Ferrentino et al, 2008).

Table 1. Illicit Financial Flows from Developing Countries: Current (2013) and Previous (2012) Estimates
(in billions of US dollars or percent)

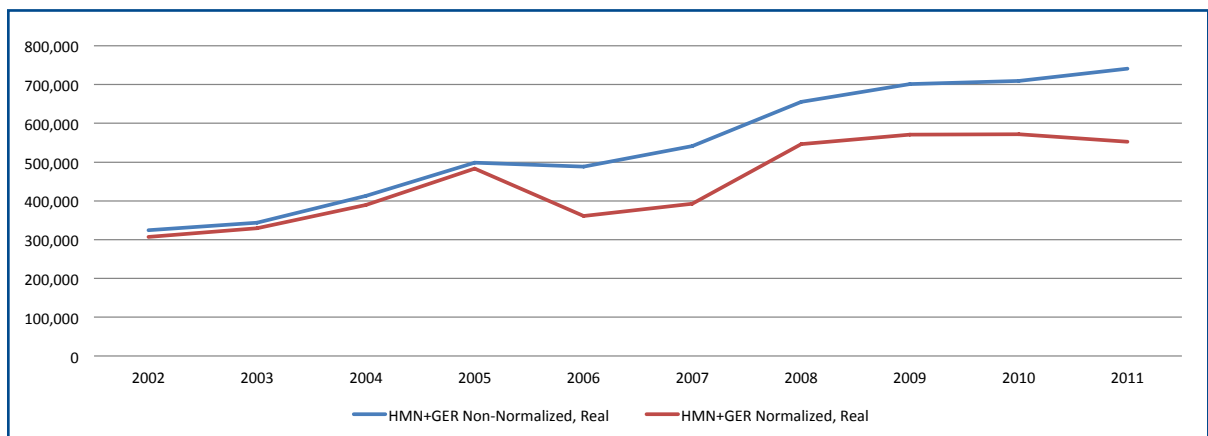
Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
2013 HMN+GER Non-Normalized	270.3	301.5	384.5	498.9	511.4	594.0	789.5	770.3	832.4	946.7	5899.5	550.3
2012 HMN+GER Non-Normalized	299.8	359.0	490.0	615.1	588.7	669.9	871.3	776.0	858.8	.	5528.6	614.3
Nominal Difference	-29.5	-57.5	-105.5	-116.2	-77.3	-75.9	-81.8	-5.7	-26.4	.	.	-64.0
Percent Difference	-9.9%	-16.0%	-21.5%	-18.9%	-13.1%	-11.3%	-9.4%	-0.7%	-3.1%	.	.	-12%

22. The most notable changes between the 2012 IFF Update and the current one are differences in individual country figures. Correcting for the problem of re-exports from Hong Kong significantly dampened China's dominance of IFFs in the developing world, causing China's share of the total IFFs to decrease from 47 percent as presented in the 2012 IFF Update to only 19 percent in this report. The drastic reduction in China's IFF number was almost entirely

offset by the increases in a number of other country's GER figures as a result of the new GER methodology, which uses individual advanced economies as the trading partner (see Section II) instead of the world as a group. The most notable change occurred in our numbers for Russia, which moved from the fifth largest cumulative exporter of illicit capital to the second, even displacing China as having the largest IFF figure in 2011.

23. The new regional breakdowns, presented below in Section III.B, are more in line with each region's respective share of developing and emerging market GDP, suggesting that the new figures are more realistic than previous years. The reduction of China's outsized role in driving total IFFs highlights that illicit flows are a *global* problem rather than merely a problem affecting mostly Asia.
24. Controlled for inflation, illicit flows from developing countries increased by 10.2 percent per annum between 2002 and 2011. The volume of total outflows as a share of developing country GDP increased from 4.0 percent in 2002 to 4.6 percent in 2005. Since then, illicit outflows have generally been on a declining trend relative to GDP, and were 3.7 percent in 2011.
25. The global economic slowdown that started at the end of 2008 had a dampening impact on illicit outflows. In real terms, illicit outflows grew at a faster rate before the recession than after, most likely due to the sputtering global recovery. The decrease in growth rates that occurred between 2008 and 2011 reversed its path in 2011, however, marking the first year illicit outflows exhibited an increasing growth pattern since the recession began.

Chart 1. Non-Normalized vs. Normalized Illicit Financial Flows, 2002-2011
(in millions of constant US dollars, base year 2005)



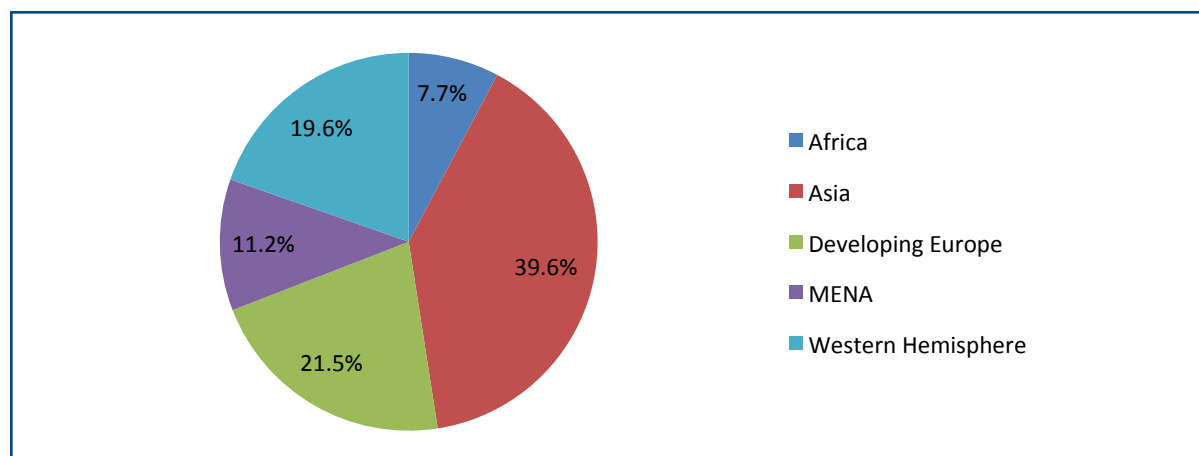
26. Regression analysis using panel data on 55 developing countries also supports the finding that growth in the official economy drives more illicit outflows (see Section IV). However, econometric models used in case studies by GFI on India, Mexico, and Russia have found mixed empirical evidence linking real GDP growth and capital flight or illicit flows.
27. In the case of India, we found that while the link between growth and broad capital flight—as measured by the WBR model adjusted for trade misinvoicing—was statistically insignificant for the period as a whole (1948-2008), there was strong evidence that the much faster rates of economic growth following India's economic liberalization in 1991 stimulated more capital flight. In the case of Mexico, on the other hand, we found real economic growth to be negatively related to broad capital flight, as estimated by the WBR method adjusted for trade misinvoicing. This is the traditionally expected result, wherein economic growth builds more confidence among economic agents to invest domestically so that the licit component of capital flight abates. In the case of Russia, we studied illicit outflows estimated by the HMN+GER method rather than broad capital flight as in the cases of India and Mexico, and found that real GDP growth was positively and significantly related to illicit outflows. In this case, economic expansion provided more opportunities to generate and transmit more illicit capital given the lack of improvements in governance.
28. Hence, our case studies show that the empirical link between economic growth and capital flight or illicit flows is mixed, suggesting that the relationship between growth and capital flight is complex. An expanding economy can stimulate growth in the underground economy by offering more opportunities to make money (through, for example, a larger number of government contracts, which can be subject to bribes and kickbacks). Alternatively, faster economic growth can foster more investor confidence, leading to a reduction in capital flight.

Table 2. Non-Normalized Illicit Financial Flows by Region, 2002-2011
(in billions of constant US dollars, base year 2005, or percent)

Region/Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average	Trend Rate of Growth	Percent of Total
Africa	12.5	12.7	19.8	36.4	46.6	59.9	61.2	68.1	49.8	52.0	419.1	41.9	20.2%	7.7%
Asia	152.8	156.1	187.3	193.2	198.6	213.5	216.2	235.5	307.0	284.8	2,144.8	214.5	7.5%	39.6%
Developing Europe	57.3	77.0	79.4	86.0	93.4	121.5	137.8	163.9	147.2	199.8	1,163.2	116.3	13.6%	21.5%
MENA	9.7	8.2	24.1	63.8	53.7	37.7	115.6	129.9	76.1	87.4	606.4	60.6	31.5%	11.2%
Western Hemisphere	90.7	88.4	99.7	117.2	92.1	105.6	121.0	102.1	126.9	116.2	1,059.9	106.0	3.1%	19.6%
All Developing Countries	325.0	344.4	412.4	498.5	486.5	540.2	653.8	701.4	709.0	742.1	5,413.4	541.3	10.2%	100.0%

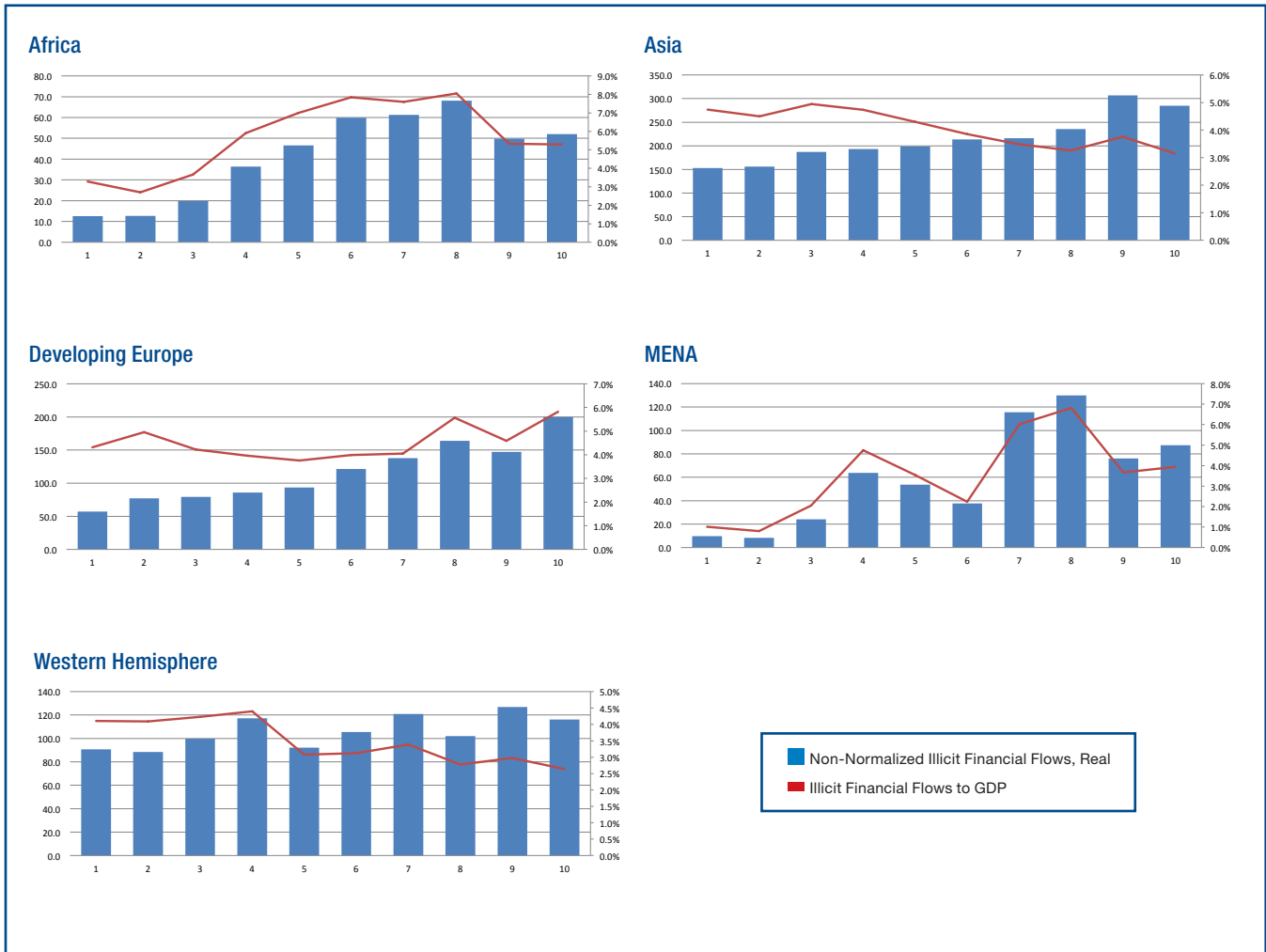
29. Over the period studied, the Middle East and North Africa (MENA) region registered by far the fastest trend rate of growth in illicit outflows (31.5 percent per annum), followed by Africa (20.2 percent), developing Europe (13.6 percent), Asia (7.5 percent), and Latin America (3.1 percent). Normalized (conservative) estimates reflect the same basic pattern of illicit outflows.
30. The substantially faster rate of growth in illicit outflows from the MENA region is probably related to the rise in oil prices. We will test the link between oil prices and illicit flows from the oil-exporting countries in Section IV.
31. Asia accounts for 39.6 percent of total illicit outflows from developing countries over the period studied, compared to 61.2 percent of such outflows as reported in the 2012 IFF Update. Asia's much larger share of total illicit outflows resulted from an overestimation of trade misinvoicing by China due to the "Hong Kong effect". Adjustment for re-exports through Hong Kong as discussed in Section II significantly reduces illicit outflows from China, thus driving down Asia's share. Nevertheless, Asia still retains the largest share of IFFs, as indicated in Chart 2, and six of the top 15 exporters of illicit capital are Asian countries (China, Malaysia, India, Indonesia, Thailand, and the Philippines).

Chart 2. Cumulative Non-Normalized Illicit Financial Flows by Region
(in percent)



32. Developing Europe (21.5 percent) and the Western Hemisphere (19.6 percent) contribute almost equally to total illicit outflows from the developing world. Europe's second largest share in total outflows is almost entirely driven by Russia, while the Western Hemisphere's share is driven by Mexico and Brazil.
33. Illicit outflows from the MENA region account for 11.2 percent of total outflows on average. MENA's share has increased significantly from just 3 percent of total outflows in 2002 but decreased from its peak of 18.5 percent in 2009. Similarly, Africa's share of 7.7 percent has increased from just 3.8 percent in 2002, but has decreased from its peak of over 11 percent in 2007.

Chart 3. Illicit Financial Flows vs. Illicit Financial Flows to GDP by Region, 2002-2011
(billions of constant US dollars, base year 2005, or in percent)



34. There are various ways of assessing the adverse impact of illicit flows on an economy, but its ratio to GDP is a widely used indicator. The ranking of various regions based on IFFs to GDP looks quite different from the ranking based on the volume of outflows. For instance, while illicit outflows from Africa comprised just 7.7 percent of developing country outflows in 2011, at an average of 5.7 percent of GDP over the period studied, the loss of capital has an outsized impact on the continent. The ratio peaked at 8.1 percent of GDP in 2009 and declined to 5.3 percent of GDP in 2011, as a result of a fall in trading volumes due to the global recession rather than GDP growth. Chart 4 presents a heat map of average illicit flows to GDP for all developing countries that indicates how significantly the intensity with which illicit flows impact African countries varies. Elsewhere, Russia is noticeably more impacted by illicit flows than China and India.

35. Illicit outflows also significantly impact developing Europe, averaging 4.5 percent of regional GDP and having risen from 4.3 percent of GDP in 2002 to 5.8 percent of GDP in 2011. Outflows from Asia amount to an average of 4.1 percent of regional GDP, which reflects a similarly significant impact. Leakages of illicit capital from MENA and the Western Hemisphere average about 3.5 percent of regional GDP. In the case of MENA, outflows as a percentage of GDP increased significantly from 1 percent in 2002 to 6.8 percent in 2009, before declining to 3.9 percent in 2011. In contrast, outflows from the Western Hemisphere as a share of regional GDP declined from 4.1 percent in 2002 to 2.6 percent in 2011.

Table 3. Illicit Financial Flows to GDP, Non-Normalized 1/
(in percent)

Region/Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average
Africa	3.3%	2.7%	3.7%	5.9%	7.0%	7.8%	7.6%	8.1%	5.3%	5.3%	5.7%
Asia	4.7%	4.5%	4.9%	4.7%	4.3%	3.9%	3.5%	3.3%	3.8%	3.2%	4.1%
Developing Europe	4.3%	5.0%	4.2%	4.0%	3.8%	4.0%	4.1%	5.6%	4.6%	5.8%	4.5%
MENA	1.0%	0.8%	2.0%	4.7%	3.5%	2.2%	6.0%	6.8%	3.7%	3.9%	3.5%
Western Hemisphere	4.1%	4.1%	4.2%	4.4%	3.1%	3.1%	3.4%	2.8%	3.0%	2.6%	3.5%
All Developing Countries 2/	4.0%	3.9%	4.2%	4.6%	4.0%	3.7%	4.1%	4.2%	3.8%	3.7%	4.0%

1/ Calculated as total IFFs from regional group over total regional GDP

2/ Calculated as IFF world total over emerging and developing economy GDP

36. Table 15 of the 2012 IFF Update showed that the net errors and omissions as a percentage of the financial account balance for ten countries with large sovereign wealth funds—China, the United Arab Emirates, Norway, Saudi Arabia, Singapore, Kuwait, China (Hong Kong), Russia, Qatar, and the United States—were significant. We showed that the net errors were very large relative to the financial account balance for Saudi Arabia, Qatar, and the United Arab Emirates, possibly as a result of incomplete or incorrect recording in the balance of payments of transactions related to their sovereign wealth funds. Including these countries along with other countries that do not have this issue may distort the ranking of exporters of illicit capital. We therefore exclude Saudi Arabia, United Arab Emirates, and Qatar from the top 15 countries with the largest illicit outflows presented in Table 4, but a full ranking can be found in the Appendix. Additionally, although Costa Rica is technically the 14th largest exporter of capital according to our data, we exclude it from the ranking because its IFF to GDP ratio of 28 percent is significantly higher than the other countries on the list and could be due to statistical discrepancies. A full ranking can be found in the Appendix.
37. Cumulative illicit outflows from the top fifteen exporters of illicit capital (excluding Saudi Arabia, United Arab Emirates, Qatar, and Costa Rica) amount to US\$4.2 trillion over the decade ending 2011, which is slightly over 70 percent of total outflows from all developing countries (Table 4). China (US\$1,076 billion), Russia (US\$881 billion), and Mexico (US\$462 billion) lead the group. In fact, six of the top 15 exporters of illicit capital are in Asia (China, Malaysia, India, Indonesia, Thailand, and the Philippines) while two are in Africa (Nigeria and South Africa), four are in Europe (Russia, Belarus, Poland, and Serbia), two are in the Western Hemisphere (Mexico and Brazil), and one is in the MENA region (Iraq).

Chart 4. Heat Map of Average Illicit Financial Flows to GDP Ratio for Developing Countries, 2002-2011
(in percent)

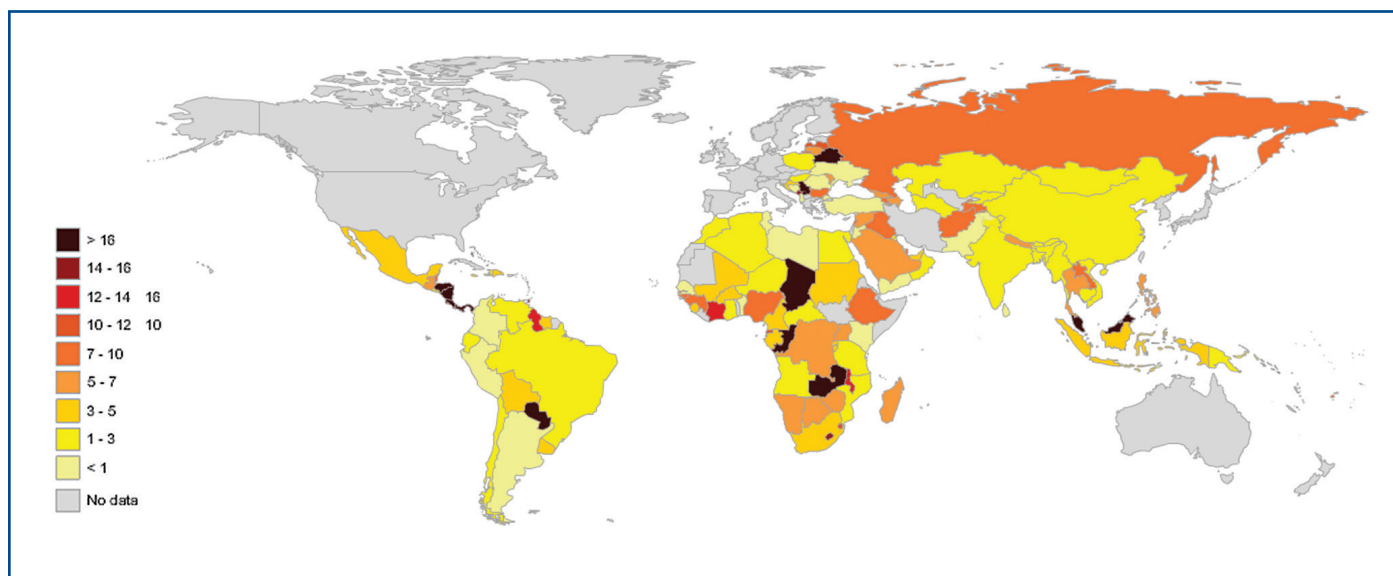


Chart design by E.J. Fagan.

38. Eight of the top ten exporters of illicit capital as identified in the 2012 IFF Update are also among the top ten countries by IFFs in this study. These are China, Russia, Mexico, Malaysia, India, Saudi Arabia, Indonesia, and Nigeria. The two countries that are not among the top ten here, the Philippines and the United Arab Emirates, are ranked numbers 11 and 13

Table 4. Cumulative Illicit Financial Flows from the Top Fifteen Developing Economies, 2002-2011
(in millions of US dollars or percent)

Rank	Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
1	China, Mainland	67,498	69,284	87,757	90,315	94,555	112,056	102,972	133,921	165,860	151,348	1,075,566	107,557
2	Russian Federation	26,517	41,304	47,136	57,502	66,825	82,069	103,972	129,459	135,033	191,145	880,960	88,096
3	Mexico	35,621	38,085	40,738	47,746	47,749	58,592	65,151	38,128	51,954	38,094	461,859	46,186
4	Malaysia	19,737	20,763	26,733	35,294	36,720	36,809	41,123	34,507	64,511	54,184	370,381	37,038
5	India	7,893	10,068	18,697	20,021	27,569	33,108	44,645	28,615	68,383	84,933	343,932	34,393
6	Brazil	8,899	12,069	15,897	16,827	10,681	17,364	22,174	22,399	32,289	34,095	192,692	19,269
7	Indonesia	14,795	16,549	18,436	13,259	16,036	18,432	27,319	20,556	16,842	19,604	181,827	18,183
8	Iraq	.	.	.	.	.	3,660	19,668	18,139	22,282	15,029	78,778	15,756
9	Nigeria	0	0	1,681	17,867	19,164	19,321	24,188	26,377	20,787	12,889	142,274	14,227
10	Thailand	4,954	6,080	7,246	11,987	11,513	10,427	20,550	14,769	24,238	29,114	140,877	14,088
11	South Africa	1,290	0	2,542	3,387	9,893	18,730	19,787	17,515	3,858	23,732	100,732	10,073
12	Philippines	4,897	8,256	9,215	13,412	9,978	10,063	8,021	5,636	7,200	12,192	88,870	8,887
13	Belarus	2,546	3,154	3,917	4,144	5,608	9,080	14,976	9,207	8,365	14,088	75,085	7,508
14	Poland	1,110	1,961	421	787	0	3,302	12,161	10,045	10,462	9,144	49,393	4,939
15	Serbia, Republic of	5,469	7,409	9,776	6,433	5,278	4,070	212	5,603	2,655	2,462	49,367	4,937
Total of top 10 as percent of total		201,226	234,981	290,190	338,981	361,568	437,083	526,919	514,875	634,717	692,053	4,232,593	28,217
		74%	78%	75%	68%	71%	74%	67%	67%	76%	73%	72%	
Developing World Total		270,252	301,512	384,528	498,921	511,355	594,036	789,530	770,298	832,438	946,677	5,899,548	589,955

respectively, while the new entrants to the top ten, Brazil and Thailand, are ranked numbers 6 and 9 respectively. Hence, the methodological revisions implemented in this study do not appear to have substantially disturbed the rankings.

b. Share of HMN and GER in Totals IFFs

39. Both the HMN and GER components of illicit outflows include statistical errors – in the former, such errors arise in the recording of balance of payments credit and debit transactions, while in the latter, errors arise in the recording of trade statistics by reporting countries and their advanced-country trading partners. In fact, statistical errors are inherent in the compilation of *almost all* economic data. The question of errors is therefore a question of degree and not incidence.
40. While both HMN and GER include statistical errors, it is impossible to separate the statistical errors from the illicit outflows captured by these indicators. However, there are two reasons why one can presume that statistical errors inherent in HMN are greater than those in GER (errors in both are on a net basis, in that positive and negative errors offset one another). First, HMN-related errors cover current account, capital account, and financial account transactions, while GER-related errors only cover trade-related errors, a significantly narrower scope. Second, HMN-related errors arise out of the recording of both visible and invisible transactions whereas trade-related transactions involve only visible merchandise, most of which is subject to taxes (such as most imports and some exports), making it both easier and far more likely to be tracked and properly recorded.
41. *The Balance of Payments Manual, Sixth Edition* (BPM6) notes that while the IMF cannot issue guidelines to compilers on what would constitute an acceptable or reasonable size of net errors and omissions, they can assess it in relation to items such as GDP, positions data, and gross flows (paragraph 2.26, BPM6). Accordingly, Table 5 presents the variance, a statistical indicator of how much a variable fluctuates over time, in the HMN to GDP ratio and the average share of HMN in total IFFs for each region for the sample period (2002-2011). A highly variable HMN to GDP ratio could mean that more of a country's HMN figure is due to statistical discrepancies than to capital flight. We find that the variance of the HMN to GDP ratio is highest for Africa, followed by the MENA region, Asia, the Western Hemisphere, and developing Europe.

Table 5. Variance in HMN to GDP Ratio
(in percent)

Region	Average Variance in HMN to GDP Ratio	Average Percent of HMN in Total IFF
Africa	0.324	38.1%
Asia	0.219	13.1%
Developing Europe	0.048	15.7%
MENA	0.252	73.0%
Western Hemisphere	0.062	12.7%
Total	0.188	22.1%

42. The result is consistent with what we would expect; it is well-known that balance of payments statistics are less reliable for African countries. Moreover, the MENA region’s relatively high variance in the HMN to GDP ratio may be due to incomplete or incorrect recording of balance of payments transactions related to sovereign wealth funds.
43. At the same time, both MENA and Africa’s shares of HMN in total IFFs are much higher—73 percent and 38.1 percent respectively—than other regions, which are in the 12.7 to 15.7 percent range. This implies that illicit flows from MENA and Africa may be somewhat overstated to the extent that HMN is overstated due to statistical errors.
44. We now analyze the breakdown between balance of payments leakages (HMN) and trade misinvoicing (GER) in total illicit outflows from developing countries. On average, GER comprises nearly 80 percent of total outflows, with HMN amounting to just 20.3 percent of total outflows (Table 6). While the share of HMN fluctuates considerably, it has generally trended upwards from just 14.2 percent of total outflows in 2002 to 19.4 percent in 2011. There is little reason to believe that purely statistical errors in compiling balance of payments data have increased over time for developing countries as a whole. If anything, technical assistance by multilateral institutions and on a bilateral basis, together with better training of statisticians, should have reduced errors for the group. Hence, the upward trend in HMN for developing countries would indicate that leakages of illicit capital from the balance of payments are increasing over time.

Table 6. Share of Real HMN in Real HMN+GER Non-Normalized, 2002-2011
(in millions of constant US dollars, base year 2005, or in percent)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average	Trend Rate of Growth
HMN	46,110	46,918	36,248	125,355	92,532	92,078	170,591	214,823	207,024	143,451	1,175,130	117,513	20.2%
GER	278,316	296,670	376,421	373,566	396,010	449,461	484,881	486,386	502,246	597,693	4,241,649	424,165	8.0%
HMN+GER	324,426	343,587	412,669	498,921	488,542	541,539	655,472	701,209	709,270	741,144	5,416,779	541,678	10.2%
Share of HMN in total	14.2%	13.7%	8.8%	25.1%	18.9%	17.0%	26.0%	30.6%	29.2%	19.4%	–	20.3%	9.1%

IV. Drivers of Illicit Financial Flows: Evidence from Pooled Data

A. General Considerations

45. One of the advantages of using panel data, which pools cross-sectional and time series data, is that we can effectively assess dynamics with a relatively short time series. Panel data also allow the researcher to control for variables that are impossible to observe or measure such as cultural factors or differences in business practices across countries. In our case, the dependent variables, import and export misinvoicing, are measured over a time series of only ten years (2002-2011). This allows us to analyze different variables that drive trade misinvoicing both between countries and over time.
46. We use trade misinvoicing rather than the broader measure of illicit flows (HMN+GER) because of the HMN component's known issues with including errors in compiling balance of payments (see paragraph 8). While trade misinvoicing estimates are also subject to errors in compiling trade statistics, the extent of such errors is much smaller than in the HMN measure, suggesting that we can reasonably make assumptions from the regression analysis of trade misinvoicing using panel data.
47. Panel data can be modeled with what are known as "fixed" or "random" effects. Fixed-effects is used whenever the researcher is only interested in analyzing the impact of variables that vary over time, while random-effects is used when there is reason to believe that differences across entities have some influence on the dependent variable. Running the Hausman test on each regression found that random-effects was preferred over fixed-effects for the purpose of this study (regressions for export-misinvoicing failed the F-test using the random-effects model, so regression results are presented using regular OLS in Table 7). The regression results reported in Table 7 assess the drivers of trade misinvoicing over a short, ten-year period for a wide group of 44-55 developing countries. The developing countries included in each regression were chosen on the basis of data availability only.

B. Interpreting the Results

48. The panel data on export and import misinvoicing and potential drivers involve two groups of countries, which are listed in the Appendix. Data availability on exports and imports on a bilateral basis as well as data on the independent variables (the potential drivers) determined the coverage of countries. Panel regressions seeking to explain export misinvoicing are based on a group of 55 developing countries, while those testing the drivers of import misinvoicing cover 44 countries. Moreover, both export and import misinvoicing are estimated in two ways – the extent of export and import misinvoicing as a share of exports and imports

(columns “a” and “b”) and the absolute value (i.e., without regard to sign) of export and import misinvoicing as a share of total exports and imports of a country. In the first method, export under-invoicing has a positive sign (representing a capital outflow) while export over-invoicing has a negative sign (representing a capital inflow). The signs are taken as they are in the panel regressions. The second method estimates the amount of export and import misinvoicing regardless of the direction of illicit flows they generate. Random effects panel regressions are carried out for import misinvoicing while regular ordinary least squares (OLS) regressions analysis is used to study the drivers of export misinvoicing.

49. Our analysis shows that a set of three common variables basically drove export misinvoicing in the 55 developing countries over the period 2002-2011 (see Table 7). Two are regulatory in nature—export proceeds surrender requirements (EPSR) and capital account openness—and the third is the state of overall governance in the country. These drivers were found to be statistically significant in explaining the direction of export under- and over-invoicing. The variables, as they are listed in Table 7, are defined as follows: EPSR is the presence of export proceeds surrender requirements; Corruption is the percentile rank of the World Bank’s Control of Corruption index; KAOPEN is the Chinn-Ito Capital Account Openness Index; Fiscaldef_gdp is the fiscal deficit to GDP ratio; Δ ExtDebt is the percentage change in a country’s external debt position; FDI_gdp is the net foreign direct investment to GDP ratio; and Tariff is the average effective tariff rate.

Table 7: Results of Panel and OLS Regressions

Independent Variables	Dependent Variables			
	a	b	c	d
Constant	0.450***	-0.088*	0.566***	0.186***
EPSR	0.304**	0.028	0.240*	-0.016
Corruption	-0.008***	0.001*	-0.008***	-0.003***
KAOPEN	0.312***	-0.005	0.263***	0.010
Fiscaldef_gdp	0.002	0.001	0.001	-0.001
Δ ExtDebt	-0.034	-0.005	-0.067	0.057*
FDI_gdp	-0.766	-0.198**	-0.900*	0.145
Tariff		-0.0003**		0.005***
Ygrow	0.002	-0.004***	0.005	0.004***
Rho 1/		0.790	–	0.620
R ²	0.112	–	0.092	–
Number of Countries	55	44	55	44
Number of Observations	545	396	545	396

a = export misinvoicing over total exports

b = import misinvoicing over total imports

c = absolute value of export misinvoicing over total exports

d = absolute value of import misinvoicing over total imports

1/ Random-effects panel model conducted for b and d and regular OLS regression for a and b

50. The EPSR is a requirement levied on exporters in many developing countries that requires them to repatriate any foreign currency obtained through international trade in return for local currency, sometimes at a specified exchange rate (IMF’s Annual Report on Exchange Arrangements and Exchange Restrictions, 2006). This measure is typically implemented to

supply the government with a source of valuable foreign reserves that it can use to provide macroeconomic stability. EPSR leads to export under-invoicing when exporters see the repatriation requirement as a confiscatory measure. Since foreign currency, particularly US dollars or Euros, is often more stable than local currency, companies involved in exporting goods may resort to under-valuing their exports in order to avoid having to surrender their foreign currency. In the presence of a high inflation or volatile local exchange rates, as is often a problem in the developing world, companies that conduct international trade often rely on foreign reserves of capital in the same manner that governments do. Although this paper makes no recommendation as to whether EPSRs are good for developing countries or not, regression results suggest that their presence can influence exporters to under-value their exports in order to hold foreign exchange in offshore bank accounts instead of onshore in foreign currency accounts.

51. Data on the EPSR were obtained from the IMF's Annual Report on Exchange Controls and Exchange Regulations and are represented by a dummy variable (1 for countries with EPSR in force and 0 for those with no EPSR). There are some serious limitations of capturing the EPSR in this fashion. For instance, the dummy variable approach does not allow us to capture the extent of the control—some countries may have a 50 percent surrender requirement, while others may have a 100 percent surrender requirement. The time period over which exporters may retain the foreign exchange proceeds can also vary and thus also cannot be captured by a simple dummy variable approach. Clearly, the complexities of capital account regulations and their impact on trade misinvoicing are a thorny problem for researchers, but the fact that panel regressions using even a simple indicator of the EPSR find it to be a significant driver of export misinvoicing is quite interesting.
52. We also find that *de facto* capital account openness (represented here by the Chinn-Ito Capital Account Openness Index). leads to greater export misinvoicing in both directions. This is possibly in contention with many studies on trade misinvoicing, however, and the results should be taken with caution. Bhagwati's seminal article on the determinants of capital flight from developing countries in 1974 suggests that the high level of *de facto* capital controls present in developing countries incentivizes traders to circumvent these restrictions through trade misinvoicing. Using this logic, the easing of *de facto* restrictions on capital movements should result in *less* trade misinvoicing over time since legal channels are now available for shifting capital abroad. The surprising fact, however, is that much of the developing world has gone through substantial capital account liberalization since the 1970s and the problem of trade misinvoicing has only worsened. One explanation for this may be that openness and liberalization alone cannot curtail misinvoicing if such liberalization is not accompanied by greater regulatory oversight. Rather, openness in the presence of weak governance can be a prescription for more illicit flows.

53. The World Bank Governance Indicators capture the extent of corruption in specific countries by measuring the world percentile rank of the country's corruption indicator – an increase in the percentile rank denotes a reduction in corruption, as there are relatively fewer countries with less corruption, while a decline in the percentile rank reflects more corruption relative to other countries in the world. The panel data regressions find that if there is a decline in the percentile rank (i.e., corruption increases), export misinvoicing increases so that the coefficient is negative.
54. Regarding import misinvoicing, the most interesting finding is that the average effective tariff rate on imports (obtained from the World Trade Organization) is significantly related to import misinvoicing – an increase in rates will increase import under-invoicing. At the same time, we found that higher tariff rates leads to a reduction in import over-invoicing by raising the cost of moving capital out of the country. But the relationship is complex. If importers are able to offset the higher cost through reductions in taxable profits or gains in black markets (for example by selling the imports at a higher cost without declaring the profits), then they will still over-invoice even at the higher tariff rate.
55. The EPSR, as expected, is not statistically relevant in explaining import misinvoicing. Once again, the percentile rank of the country in controlling corruption is negatively related to import misinvoicing. The statistical significance of this relationship is stronger when we measure import misinvoicing without regard to direction (99 percent confidence interval) than taking account of the direction of flows. We did not find capital account openness to be significant in explaining import misinvoicing
56. By and large, we do not find any macroeconomic factors—such as the fiscal deficit, change in external debt, net FDI flows, etc.—to be consistently significant in explaining export or import misinvoicing across all four regressions. However, we find that real GDP growth is positively and significantly related to import misinvoicing, in that growth by itself will drive rather than curtail misinvoicing if overall governance does not improve. We found a similar result in our case study on India.

V. Conclusion

57. Illicit financial flows involve capital that is illegally earned, transferred, or utilized and are unrecorded, unlike broad capital flight which consists of a mix of licit and illicit capital. Our estimates show that the developing world lost US\$946.7 billion due to illicit financial flows, up 13.7 percent from US\$832.4 billion in 2010.
58. We present a revised methodology for estimating trade misinvoicing given China's use of Hong Kong as a trade entrepôt. While there are other trade entrepôts like Singapore and Dubai, Hong Kong is by far the largest such entrepôt in the world. Estimates of illicit outflows in the 2012 IFF Update are on average about 12 percent higher than those shown in this study, due mainly to the overestimation of trade misinvoicing arising from the "Hong Kong effect".
59. Illicit flows from developing countries increased at a trend rate of 10.2 percent per annum in real terms over the period 2002 and 2011, with faster growth rates before the global economic slowdown than after. The volume of total illicit flows averaged approximately 4.0 percent of GDP over the period studied.
60. The study also highlights the pattern of illicit outflows from developing countries on a regional basis. We find that:
 - The Middle East and North Africa (MENA) region registered the fastest trend rate of growth in illicit outflows (31.5 percent per annum) followed by Africa (19.8 percent), developing Europe (13.6 percent), Asia (7.5 percent), and the Western Hemisphere (3.1 percent);
 - Asia accounts for 39.6 percent of total illicit outflows from developing countries, driven by outflows from China, Malaysia, India, Indonesia, Thailand, and the Philippines, which rank among the top fifteen exporters of illicit capital from the developing world;
 - Developing Europe (21.5 percent) and the Western Hemisphere (19.6 percent) contribute almost equally to total illicit outflows from the developing world, while outflows from the MENA region account for 11.2 percent of total outflows. Developing Europe's second-largest share of total outflows is almost entirely driven by Russia, while the Western Hemisphere's share is driven by Mexico and Brazil. Oil-exporting countries dominate illicit outflows from the MENA region; and
 - Africa leads other regions in terms of the illicit outflows to GDP measure. Analyzing illicit flows as a share of GDP allows for a better measure of the impact such outflows can have on a country. For instance, while illicit outflows from Africa comprise just 7.7 percent of developing country outflows, this loss at an average of 5.7 percent of GDP per annum has an outsized impact on the continent.

61. Cumulative outflows from the top fifteen exporters of illicit capital (excluding Saudi Arabia, the United Arab Emirates, Qatar and Costa Rica) amount to US\$4.2 trillion over the decade ending 2011, slightly over 70 percent of total outflows from developing countries (Table 4). China (US\$1,076 billion), Russia (US\$881.0 billion), and Mexico (US\$461.9 billion) lead the top 15 group. Six of the top 15 exporters of illicit capital are in Asia (China, Malaysia, India, Indonesia, Thailand, and the Philippines), two are in Africa (Nigeria and South Africa), four are in Europe (Russia, Belarus, Poland, and Serbia), two are in the Western Hemisphere (Mexico and Brazil), and one is in the MENA region (Iraq).

62. We find no evidence that various macroeconomic drivers significantly impact trade misinvoicing. Regression results suggest that export misinvoicing is driven by capital account restrictions—namely export proceeds surrender requirement (EPSR) and capital account openness—and by corruption, as measured by the World Bank’s Control of Corruption index. Import misinvoicing is shown to be driven by growth in real income, the corruption, and the average effective tariff rate on imports.

Appendix 1. Tables

Table 1. Geographical Regions

Africa (48)	Asia (27)	Developing Europe (26)	MENA (17)	Western Hemisphere (33)	Advanced Economies (36)
Angola	Afghanistan	Albania	Algeria	Antigua and Barbuda	Australia
Benin	Bangladesh	Armenia, Republic of*	Bahrain, Kingdom of	Argentina	Austria
Botswana	Bhutan	Azerbaijan, Republic of	Egypt	Aruba	Belgium
Burkina Faso	Brunei Darussalam	Belarus*	Iran, Islamic Republic of	Bahamas, The	Canada
Burundi	Cambodia	Bosnia and Herzegovina	Iraq	Barbados	Cyprus
Cameroon	China, Mainland*	Bulgaria*	Jordan	Belize	Czech Republic
Cape Verde	Fiji	Croatia	Kuwait	Bolivia	Denmark
Central African Republic	India*	Georgia	Lebanon	Brazil*	Finland
Chad	Indonesia*	Hungary	Libya	Chile*	France
Comoros	Kiribati	Kazakhstan	Morocco	Colombia	Germany
Congo, Democratic Republic of	Lao PDR	Kosovo, Republic of	Oman	Costa Rica	Greece
Congo, Republic of	Malaysia*	Kyrgyz Republic	Qatar	Dominica	Hong Kong
Cote d'Ivoire*	Maldives	Latvia*	Saudi Arabia	Dominican Republic	Iceland
Djibouti	Mongolia	Lithuania*	Syrian Arab Republic	Ecuador	Ireland
Equatorial Guinea	Myanmar	Macedonia, FYR	Tunisia	El Salvador	Israel
Eritrea	Nepal	Moldova	United Arab Emirates	Grenada	Italy
Ethiopia	Pakistan	Montenegro	Yemen, Republic of	Guatemala	Japan
Gabon	Papua New Guinea	Poland		Guyana	Korea
Gambia, The	Philippines*	Romania		Haiti	Luxembourg
Ghana	Samoa	Russian Federation*		Honduras	Malta
Guinea	Solomon Islands	Serbia, Republic of		Jamaica	Netherlands
Guinea-Bissau	Sri Lanka	Tajikistan		Mexico	New Zealand
Kenya	Thailand*	Turkey		Nicaragua	Norway
Lesotho	Timor-Leste, Dem. Rep. of	Turkmenistan		Panama	Portugal
Liberia	Tonga	Ukraine		Paraguay*	Singapore
Madagascar	Vanuatu	Uzbekistan		Peru	Slovak Republic
Malawi	Vietnam			St. Kitts and Nevis	Slovenia
Mali				St. Lucia	Spain
Mauritania				St. Vincent and the Grenadines	Sweden
Mauritius				Suriname	Switzerland
Mozambique				Trinidad and Tobago	Taiwan, Province of China
Namibia				Uruguay	United Kingdom
Niger				Venezuela, Rep. Bolivariana de	United States
Nigeria					
Rwanda					
Sao Tome and Principe					
Senegal					
Seychelles					
Sierra Leone					
Somalia					
South Africa					
Sudan					
Swaziland					
Tanzania					
Togo*					
Uganda					
Zambia*					
Zimbabwe					

* denotes developing countries who report bilaterally to all advanced economies

Note: Advanced economies only used for conducting trade misinvoicing estimates

Source: IMF Direction of Trade Statistics

Table 2. Country Rankings by Largest Average Non-Normalized IFF Estimates, 2002-2011
(in millions of US dollars)

Rank	Country	Average IFF (where data is available)
1	China, Mainland	107,557
2	Russian Federation	88,096
3	Mexico	46,186
4	Malaysia	37,038
5	India	34,393
6	Saudi Arabia	26,643
7	Brazil	19,269
8	Indonesia	18,183
9	Iraq	15,756
10	Nigeria	14,227
11	Thailand	14,088
12	United Arab Emirates	11,464
13	South Africa	10,073
14	Philippines	8,887
15	Costa Rica	8,065
16	Belarus	7,508
17	Qatar	6,282
18	Poland	4,939
19	Serbia, Republic of	4,937
20	Chile	4,520
21	Paraguay	4,012
22	Venezuela, Rep. Bolivariana de	3,897
23	Brunei Darussalam	3,837
24	Panama	3,809
25	Turkey	3,728
26	Egypt	3,588
27	Honduras	3,155
28	Trinidad and Tobago	2,646
29	Kazakhstan	2,640
30	Sudan	2,610
31	Aruba	2,590
32	Bulgaria	2,559
33	Kuwait	2,512
34	Syrian Arab Republic	2,405
35	Lebanon	2,327
36	Latvia	2,317
37	Cote d'Ivoire	2,314

Rank	Country	Average IFF (where data is available)
38	Vietnam	2,216
39	Ethiopia	2,024
40	Dominican Republic	1,937
41	Zambia	1,934
42	Togo	1,847
43	Guatemala	1,754
44	Azerbaijan, Republic of	1,706
45	Hungary	1,690
46	Lithuania	1,664
47	Bangladesh	1,608
48	Croatia	1,574
49	Bahamas, The	1,563
50	Algeria	1,522
51	Argentina	1,491
52	Congo, Republic of	1,468
53	Nicaragua	1,324
54	Equatorial Guinea	1,280
55	Colombia	1,202
56	Morocco	1,192
57	Ecuador	1,151
58	Romania	1,123
59	Liberia	1,026
60	Bahrain, Kingdom of	983
61	Peru	909
62	El Salvador	897
63	Chad	895
64	Botswana	845
65	Uruguay	816
66	Nepal	805
67	Oman	776
68	Uganda	739
69	Myanmar	684
70	Cameroon	661
71	Armenia, Republic of	623
72	Ukraine	622
73	Angola	605

Rank	Country	Average IFF (where data is available)
74	Macedonia, FYR	559
75	Libya	544
76	Malawi	532
77	Namibia	504
78	Georgia	453
79	Tanzania	453
80	Turkmenistan	430
81	Montenegro	430
82	Madagascar	419
83	Lao PDR	414
84	Congo, Democratic Republic of	402
85	Jamaica	401
86	Afghanistan	376
87	Mali	375
88	Bolivia	350
89	Zimbabwe	335
90	Swaziland	331
91	Djibouti	319
92	Ghana	316
93	Guinea	313
94	Burkina Faso	296
95	Fiji	275
96	Tajikistan	275
97	Gabon	268
98	Moldova	247
99	Yemen, Republic of	239
100	Lesotho	233
101	Papua New Guinea	232
102	Sri Lanka	223
103	Guyana	221
104	Rwanda	211
105	Barbados	196
106	St. Vincent and the Grenadines	192
107	Vanuatu	182
108	Samoa	135
109	Cambodia	133

Rank	Country	Average IFF (where data is available)
110	Mongolia	129
111	Niger	113
112	Belize	109
113	Mauritius	107
114	Solomon Islands	106
115	Suriname	106
116	Albania	103
117	Pakistan	102
118	Mozambique	87
119	Kenya	86
120	Kyrgyz Republic	83
121	Dominica	81
122	Burundi	74
123	Maldives	72
124	Sierra Leone	71
125	Jordan	68
126	Haiti	68
127	Gambia, The	59
128	Guinea-Bissau	56
129	Seychelles	54
130	Grenada	49
131	St. Lucia	47
132	St. Kitts and Nevis	47
133	Benin	41
134	Cape Verde	39
135	Tunisia	31
136	Comoros	27
137	Tonga	26
138	Bhutan	25
139	Central African Republic	20
140	Sao Tome and Principe	15
141	Bosnia and Herzegovina	14
142	Antigua and Barbuda	12
143	Timor-Leste, Dem. Rep. of	11
144	Senegal	1

Table 3. Illicit Financial Flows (HMN+GER Normalized)
(in millions of US dollars)

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
Afghanistan	1,512	892	668	527	161	0	0	0	0	0	3,760	376
Albania	0	0	0	86	107	270	161	0	0	277	901	90
Algeria	0	0	0	189	1,962	500	3,358	2,673	1,265	2,184	12,131	1,213
Angola	68	822	0	574	0	1,641	1,236	0	0	17	4,358	436
Antigua and Barbuda	40	5	19	11	11	8	4	7	0	11	116	12
Argentina	1,890	1,428	0	0	0	0	0	0	606	3,603	7,527	753
Armenia, Republic of	86	217	219	352	386	806	1,124	832	1,045	1,163	6,229	623
Aruba	805	1,226	2,189	3,537	3,708	3,935	4,919	1,842	125	3,611	25,897	2,590
Azerbaijan, Republic of	87	112	50	126	2,462	8,539	845	3,854	990	0	17,063	1,706
Bahamas, The	772	1,001	1,062	1,842	1,330	1,622	2,086	1,670	2,219	2,030	15,634	1,563
Bahrain, Kingdom of	651	700	1,509	2,249	2,304	1,694	30	66	0	0	9,202	920
Bangladesh	349	830	840	644	2,648	2,583	179	1,034	2,191	1,168	12,465	1,246
Barbados	301	329	574	534	69	54	7	0	65	0	1,934	193
Belarus	2,546	3,154	3,917	4,144	5,608	9,080	14,976	9,207	8,365	14,088	75,085	7,508
Belize	73	119	90	99	84	173	152	104	72	120	1,086	109
Benin	0	61	117	0	0	0	0	6	195	0	379	38
Bhutan	.	.	.	.	0	137	0	0	0	11	148	25
Bolivia	854	174	625	374	105	112	0	454	802	0	3,500	350
Bosnia and Herzegovina	0	0	0	0	0	68	74	0	0	0	142	14
Botswana	0	161	293	0	0	0	0	1,801	352	0	2,607	261
Brazil	8,899	12,069	15,897	16,827	0	3,152	22,174	22,399	32,289	34,095	167,800	16,780
Brunei Darussalam	2,766	2,471	1,592	4,653	5,786	6,864	8,440	5,796	0	0	38,369	3,837
Bulgaria	1,828	2,591	2,306	3,019	986	3,052	4,229	0	0	0	18,011	1,801
Burkina Faso	128	107	287	194	198	328	396	409	381	535	2,963	296
Burundi	6	14	19	112	131	63	26	154	51	161	737	74
Cambodia	280	366	448	12	72	45	45	8	29	26	1,332	133
Cameroon	177	264	861	465	941	1,261	1,540	0	0	483	5,992	599
Cape Verde	19	33	5	8	27	11	123	40	89	30	387	39
Central African Republic	67	13	0	0	0	0	0	35	33	30	179	18
Chad	1,076	399	499	429	734	988	874	1,161	1,188	1,598	8,946	895
Chile	2,846	724	270	1,329	1,526	450	8,046	0	498	352	16,040	1,604
China, Mainland	67,498	69,284	87,757	90,315	0	0	0	41,383	52,936	13,766	422,938	42,294
Colombia	0	0	1,750	0	0	0	123	0	0	0	1,873	187
Comoros	9	6	15	16	24	20	21	28	27	106	272	27
Congo, Democratic Republic of	576	412	597	924	567	170	0	0	0	0	3,246	325
Congo, Republic of	220	1,039	3,054	665	2,151	1,722	2,630	616	1,758	0	13,855	1,386
Costa Rica	2,358	3,440	4,653	5,291	5,377	5,536	6,815	8,727	17,340	21,111	80,648	8,065
Cote d'Ivoire	1,251	3,032	2,587	3,819	2,645	3,309	2,423	1,215	1,809	0	22,090	2,209
Croatia	638	1,355	1,305	1,288	1,722	1,659	2,266	1,680	921	1,532	14,366	1,437
Djibouti	164	206	229	277	356	278	399	298	478	501	3,186	319
Dominica	13	18	26	41	46	76	150	128	124	182	806	81
Dominican Republic	635	1,887	981	456	889	347	1,093	4,040	5,201	3,842	19,370	1,937
Ecuador	317	0	861	1,318	0	0	4,805	131	0	0	7,433	743

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
Egypt	1,507	1,248	3,156	5,098	4,483	4,730	6,070	0	2,145	6,414	34,851	3,485
El Salvador	1,085	642	657	1,070	932	1,027	882	955	928	793	8,971	897
Equatorial Guinea	0	0	0	0	0	0	1,970	2,875	2,906	3,223	10,974	1,097
Eritrea	.	.	.	.	.	.	.	.	.	.	.	.
Ethiopia	1,231	495	354	785	1,152	1,510	1,865	3,045	5,643	4,107	20,185	2,019
Fiji	199	254	239	159	408	240	391	276	252	330	2,747	275
Gabon	503	260	357	415	0	0	0	0	0	0	1,535	153
Gambia, The	18	10	30	54	30	72	64	40	134	135	587	59
Georgia	243	382	444	403	706	427	884	515	312	219	4,534	453
Ghana	0	0	0	0	0	37	374	1,342	721	691	3,164	316
Grenada	33	42	24	51	44	58	58	48	60	69	485	49
Guatemala	1,433	1,385	1,400	1,562	920	1,019	969	3,356	2,402	3,095	17,542	1,754
Guinea	116	316	421	292	290	633	251	0	373	436	3,128	313
Guinea-Bissau	44	0	37	23	13	193	5	42	74	119	549	55
Guyana	60	80	127	209	143	291	298	314	388	298	2,206	221
Haiti	0	0	40	0	87	95	120	46	61	64	513	51
Honduras	2,679	2,722	2,920	3,175	3,355	3,388	3,294	2,980	3,479	3,560	31,552	3,155
Hungary	0	0	2,100	2,580	2,744	349	3,373	771	2,194	2,789	16,901	1,690
India	7,893	10,068	18,697	20,021	27,569	33,108	44,645	28,615	68,383	84,933	343,932	34,393
Indonesia	14,795	16,549	18,436	13,259	16,036	18,432	27,319	20,556	3,501	3,395	152,278	15,228
Iran, Islamic Republic of	0	0	0	0	0	0	0	0	0	0	0	0
Iraq	.	.	.	.	.	3,660	19,668	18,139	22,282	15,029	78,778	15,756
Jamaica	360	430	435	686	322	0	894	470	162	222	3,981	398
Jordan	130	0	0	0	206	0	0	0	0	0	336	34
Kazakhstan	0	932	1,016	1,800	3,128	2,966	5,746	783	0	5,619	21,990	2,199
Kenya	0	277	67	245	0	258	0	0	0	0	847	85
Kiribati	.	.	.	.	.	.	.	.	.	.	.	.
Kosovo, Republic of	.	.	.	0	0	0	0	0	0	0	0	0
Kuwait	1,869	574	0	0	0	4,732	10,049	0	0	1,698	18,922	1,892
Kyrgyz Republic	22	0	19	0	0	356	0	82	46	304	830	83
Lao PDR	130	82	0	0	516	849	588	702	402	793	4,062	406
Latvia	1,061	1,210	1,943	2,263	2,474	3,160	3,286	2,093	1,614	4,063	23,167	2,317
Lebanon	528	0	734	1,678	3,191	7,006	3,049	4,021	529	2,038	22,774	2,277
Lesotho	309	71	128	0	206	0	217	383	0	0	1,314	131
Liberia	886	814	898	981	1,576	1,905	648	1,328	807	414	10,256	1,026
Libya	0	0	0	1,497	0	0	1,753	0	2,137	0	5,387	539
Lithuania	1,309	1,851	1,101	1,458	289	54	0	0	0	4,267	10,329	1,033
Macedonia, FYR	177	281	381	494	305	807	1,074	564	573	934	5,590	559
Madagascar	122	0	756	412	1,596	0	636	165	108	265	4,059	406
Malawi	112	212	160	494	458	456	1,010	752	687	977	5,319	532
Malaysia	19,737	20,763	26,733	35,294	36,720	36,809	41,123	34,507	64,511	54,184	370,381	37,038
Maldives	156	111	68	35	72	49	56	39	62	70	717	72

Table 3. Illicit Financial Flows (HMN+GER Normalized) (cont)
(in millions of US dollars)

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
Mali	6	275	128	173	224	184	966	323	899	530	3,709	371
Mauritania	.	.	.	.	.	.	.	.	.	.	.	.
Mauritius	0	0	0	0	0	0	0	306	443	0	749	75
Mexico	35,621	38,085	40,738	47,746	47,749	58,592	65,151	38,128	51,954	10,732	434,497	43,450
Moldova	132	228	343	244	188	440	493	226	0	0	2,294	229
Mongolia	.	6	0	75	14	212	775	0	0	76	1,158	129
Montenegro	0	0	980	925	436	743	456	278	259	222	4,299	430
Morocco	182	297	282	3,487	521	0	412	2,232	160	243	7,816	782
Mozambique	266	0	0	0	365	0	0	0	0	0	631	63
Myanmar	19	78	633	604	626	336	1,362	1,010	2,132	0	6,800	680
Namibia	0	89	0	0	0	0	0	0	317	0	406	41
Nepal	540	364	414	503	678	574	884	1,552	1,885	651	8,045	805
Nicaragua	770	625	1,055	1,019	1,511	1,222	1,594	1,241	1,889	2,315	13,242	1,324
Niger	9	15	86	123	0	100	57	0	534	166	1,090	109
Nigeria	0	0	0	17,344	17,151	14,399	20,783	26,377	16,500	7,150	119,704	11,970
Oman	842	565	396	851	2,397	0	0	1,031	0	1,006	7,089	709
Pakistan	0	44	0	200	0	0	51	0	729	0	1,024	102
Panama	2,235	2,414	2,709	3,929	4,632	5,566	5,800	5,189	5,191	430	38,095	3,809
Papua New Guinea	0	0	0	0	15	0	73	479	91	896	1,554	155
Paraguay	1,072	1,830	2,183	2,756	3,268	3,851	5,461	4,769	6,941	7,993	40,125	4,012
Peru	0	0	0	0	407	138	123	596	0	1,020	2,284	228
Philippines	4,897	8,256	9,215	13,412	9,978	10,063	8,021	5,636	7,200	12,192	88,870	8,887
Poland	981	1,961	0	787	0	3,302	12,161	10,045	10,462	9,144	48,843	4,884
Qatar	1,031	1,260	0	5,568	4,703	0	2,310	21,173	11,384	3,738	51,167	5,117
Romania	856	289	0	0	0	1,320	2,065	1,729	145	0	6,404	640
Russian Federation	26,517	41,304	47,136	57,502	66,825	82,069	103,972	129,459	135,033	191,145	880,960	88,096
Rwanda	40	29	217	73	130	159	112	383	447	518	2,106	211
Samoa	59	84	82	331	116	144	176	103	115	142	1,352	135
Sao Tome and Principe	4	5	4	11	6	13	38	15	17	32	146	15
Saudi Arabia	0	0	0	34,459	20,560	15,629	30,026	60,754	34,380	48,178	243,986	24,399
Senegal	0	0	0	3	0	0	0	0	0	0	3	0
Serbia, Republic of	5,469	7,409	9,776	6,433	5,278	4,070	212	5,603	2,655	2,462	49,367	4,937
Seychelles	222	154	82	75	0	0	0	0	0	0	533	53
Sierra Leone	69	95	94	90	28	63	32	7	4	213	695	70

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
Solomon Islands	22	34	75	88	93	135	171	90	170	186	1,063	106
Somalia	.	.	.	.	.	.	.	.	.	.	.	.
South Africa	485	0	0	0	9,893	18,730	19,787	17,515	0	23,732	90,141	9,014
Sri Lanka	0	114	189	73	106	165	0	0	881	707	2,234	223
St. Kitts and Nevis	48	15	34	41	39	54	30	65	95	45	466	47
St. Lucia	21	57	60	91	193	28	10	5	0	0	463	46
St. Vincent and the Grenadines	170	153	298	374	195	140	232	184	117	52	1,915	192
Sudan	288	14	0	0	1,833	4,005	2,724	4,701	4,421	6,826	24,812	2,481
Suriname	105	75	121	117	0	0	285	19	168	77	966	97
Swaziland	688	694	0	41	238	701	0	55	0	0	2,417	242
Syrian Arab Republic	160	0	13,337	137	1,488	746	1,226	747	0	5,660	23,501	2,350
Tajikistan	225	148	187	76	265	337	18	1,439	0	0	2,695	269
Tanzania	551	340	96	704	0	0	390	248	1,296	817	4,441	444
Thailand	0	0	710	11,987	0	0	20,550	0	24,238	29,114	86,599	8,660
Timor-Leste, Dem. Rep. of	.	.	.	.	3	9	7	0	5	42	67	11
Togo	228	214	251	952	1,692	2,884	4,471	4,250	2,385	1,140	18,467	1,847
Tonga	15	27	51	21	25	49	30	33	5	3	259	26
Trinidad and Tobago	1,422	1,576	2,117	2,215	344	2,447	0	2,923	4,263	7,643	24,951	2,495
Tunisia	34	47	128	28	37	37	0	0	0	0	312	31
Turkey	759	0	0	0	228	0	0	0	0	0	987	99
Turkmenistan	688	602	.	.	.	.	.	.	.	0	1,290	430
Uganda	124	324	525	823	484	726	1,182	1,599	1,280	307	7,373	737
Ukraine	889	834	0	0	0	458	0	0	0	0	2,182	218
United Arab Emirates	0	800	1,000	5,500	11,800	0	51,700	23,500	7,600	11,700	113,600	11,360
Uruguay	2,669	351	347	173	152	790	0	0	1,677	302	6,461	646
Uzbekistan	0	0	0	0	0	0	0	0	0	0	0	0
Vanuatu	56	66	178	168	170	286	442	131	161	157	1,816	182
Venezuela, Rep. Bolivariana de	2,781	795	2,503	13,588	2,211	809	932	3,223	2,955	3,644	33,442	3,344
Vietnam	1,038	0	915	397	0	578	1,045	9,022	3,690	5,477	22,161	2,216
Yemen, Republic of	0	0	0	0	0	0	1,900	0	0	0	1,900	190
Zambia	520	1,005	1,837	2,074	2,474	3,110	2,535	1,875	2,611	1,302	19,344	1,934
Zimbabwe	662	0	306	357	1,790	0	0	0	0	0	3,115	312
All Developing Countries	257,037	287,065	363,867	481,988	378,652	429,640	651,629	631,869	671,099	712,310	4,865,157	486,516

Table 4. Illicit Financial Flows (HMN+GER Non-Normalized)
(in millions of US dollars)

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
Afghanistan	1,512	892	668	527	161	0	0	0	0	0	3,760	376
Albania	1	16	13	86	107	270	161	54	42	277	1,028	103
Algeria	482	490	751	189	2,259	500	3,358	3,737	1,265	2,184	15,215	1,522
Angola	68	822	0	574	0	1,641	1,236	0	1,692	17	6,050	605
Antigua and Barbuda	40	5	19	11	11	8	4	7	0	11	116	12
Argentina	2,472	1,428	954	598	0	906	4,345	0	606	3,603	14,912	1,491
Armenia, Republic of	86	217	219	352	386	806	1,124	832	1,045	1,163	6,229	623
Aruba	805	1,226	2,189	3,537	3,708	3,935	4,919	1,842	125	3,611	25,897	2,590
Azerbaijan, Republic of	87	112	50	126	2,462	8,539	845	3,854	990	0	17,063	1,706
Bahamas, The	772	1,001	1,062	1,842	1,330	1,622	2,086	1,670	2,219	2,030	15,634	1,563
Bahrain, Kingdom of	651	1,326	1,509	2,249	2,304	1,694	30	66	0	0	9,829	983
Bangladesh	636	830	840	1,055	2,648	2,583	1,086	1,406	2,191	2,805	16,077	1,608
Barbados	301	329	574	534	69	54	7	0	90	0	1,960	196
Belarus	2,546	3,154	3,917	4,144	5,608	9,080	14,976	9,207	8,365	14,088	75,085	7,508
Belize	73	119	90	99	84	173	152	104	72	120	1,086	109
Benin	0	61	117	34	0	0	0	6	195	0	413	41
Bhutan	.	.	.	.	0	137	0	0	0	11	148	25
Bolivia	854	174	625	374	105	112	0	454	802	0	3,500	350
Bosnia and Herzegovina	0	0	0	0	0	68	74	0	0	0	142	14
Botswana	66	161	465	228	553	1,093	1,079	2,799	579	1,428	8,451	845
Brazil	8,899	12,069	15,897	16,827	10,681	17,364	22,174	22,399	32,289	34,095	192,692	19,269
Brunei Darussalam	2,766	2,471	1,592	4,653	5,786	6,864	8,440	5,796	0	0	38,369	3,837
Bulgaria	1,828	2,591	2,306	3,019	2,441	4,617	5,367	888	731	1,797	25,585	2,559
Burkina Faso	128	107	287	194	198	328	396	409	381	535	2,963	296
Burundi	6	16	19	112	131	63	26	154	51	161	739	74
Cambodia	280	366	448	12	72	45	45	8	29	26	1,332	133
Cameroon	276	264	861	465	941	1,261	1,540	197	321	483	6,608	661
Cape Verde	19	33	5	8	27	11	123	40	89	30	387	39
Central African Republic	67	13	6	12	0	3	0	35	33	30	200	20
Chad	1,076	399	499	429	734	988	874	1,161	1,188	1,598	8,946	895
Chile	2,846	2,542	2,821	4,715	5,046	4,442	8,046	3,488	5,599	5,655	45,199	4,520
China, Mainland	67,498	69,284	87,757	90,315	94,555	112,056	102,972	133,921	165,860	151,348	1,075,566	107,557
Colombia	1,016	1,254	1,750	1,323	533	592	2,727	1,283	0	1,540	12,017	1,202
Comoros	9	6	15	16	24	20	21	28	27	106	272	27
Congo, Democratic Republic of	576	412	597	924	567	379	0	281	285	0	4,020	402
Congo, Republic of	220	1,039	3,054	665	2,151	1,722	2,630	616	1,758	826	14,682	1,468
Costa Rica	2,358	3,440	4,653	5,291	5,377	5,536	6,815	8,727	17,340	21,111	80,648	8,065
Cote d'Ivoire	1,251	3,032	2,587	3,819	2,645	3,309	2,423	1,215	1,809	1,048	23,138	2,314
Croatia	995	1,948	1,608	1,412	1,722	1,659	2,266	1,680	921	1,532	15,742	1,574
Djibouti	164	206	229	277	356	278	399	298	478	501	3,186	319
Dominica	13	18	26	41	46	76	150	128	124	182	806	81
Dominican Republic	635	1,887	981	456	889	347	1,093	4,040	5,201	3,842	19,370	1,937
Ecuador	618	24	861	1,318	648	671	4,805	510	703	1,348	11,507	1,151

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
Egypt	1,507	1,248	3,156	5,098	4,483	4,730	6,070	0	3,173	6,414	35,878	3,588
El Salvador	1,085	642	657	1,070	932	1,027	882	955	928	793	8,971	897
Equatorial Guinea	59	0	320	172	355	918	1,970	2,875	2,906	3,223	12,798	1,280
Eritrea	.	.	.	.	.	.	.	.	.	.	.	.
Ethiopia	1,231	495	405	785	1,152	1,510	1,865	3,045	5,643	4,107	20,237	2,024
Fiji	199	254	239	159	408	240	391	276	252	330	2,747	275
Gabon	503	497	615	415	0	0	0	177	327	146	2,681	268
Gambia, The	18	10	30	54	30	72	64	40	134	135	587	59
Georgia	243	382	444	403	706	427	884	515	312	219	4,534	453
Ghana	0	0	0	0	0	37	374	1,342	721	691	3,164	316
Grenada	33	42	24	51	44	58	58	48	60	69	485	49
Guatemala	1,433	1,385	1,400	1,562	920	1,019	969	3,356	2,402	3,095	17,542	1,754
Guinea	116	316	421	292	290	633	251	0	373	436	3,128	313
Guinea-Bissau	44	6	37	23	13	193	7	42	74	119	557	56
Guyana	60	80	127	209	143	291	298	314	388	298	2,206	221
Haiti	10	31	40	41	87	95	120	79	61	119	683	68
Honduras	2,679	2,722	2,920	3,175	3,355	3,388	3,294	2,980	3,479	3,560	31,552	3,155
Hungary	0	0	2,100	2,580	2,744	349	3,373	771	2,194	2,789	16,901	1,690
India	7,893	10,068	18,697	20,021	27,569	33,108	44,645	28,615	68,383	84,933	343,932	34,393
Indonesia	14,795	16,549	18,436	13,259	16,036	18,432	27,319	20,556	16,842	19,604	181,827	18,183
Iran, Islamic Republic of	0	0	0	0	0	0	0	0	0	0	0	0
Iraq	.	.	.	.	.	3,660	19,668	18,139	22,282	15,029	78,778	15,756
Jamaica	360	430	435	686	322	28	894	470	162	222	4,009	401
Jordan	130	0	128	0	206	0	94	127	0	0	684	68
Kazakhstan	968	1,031	1,016	1,800	3,128	2,966	5,746	783	747	8,216	26,400	2,640
Kenya	0	277	80	245	0	258	0	0	0	0	860	86
Kiribati	.	.	.	.	.	.	.	.	.	.	.	.
Kosovo, Republic of	.	.	.	0	0	0	0	0	0	0	0	0
Kuwait	2,245	574	65	791	960	5,208	10,049	1,465	0	3,765	25,123	2,512
Kyrgyz Republic	22	0	19	0	0	356	0	82	46	304	830	83
Lao PDR	130	82	6	0	516	849	588	702	478	793	4,143	414
Latvia	1,061	1,210	1,943	2,263	2,474	3,160	3,286	2,093	1,614	4,063	23,167	2,317
Lebanon	528	0	952	1,678	3,191	7,006	3,049	4,021	529	2,311	23,266	2,327
Lesotho	195	71	55	61	159	297	434	587	66	410	2,335	233
Liberia	886	814	898	981	1,576	1,905	648	1,328	807	414	10,256	1,026
Libya	58	0	0	1,497	0	0	1,753	0	2,137	0	5,445	544
Lithuania	1,309	1,851	1,101	1,458	1,142	1,094	1,935	977	1,503	4,267	16,637	1,664
Macedonia, FYR	177	281	381	494	305	807	1,074	564	573	934	5,590	559
Madagascar	122	59	756	412	1,596	74	636	165	108	265	4,193	419
Malawi	112	212	160	494	458	456	1,010	752	687	977	5,319	532
Malaysia	19,737	20,763	26,733	35,294	36,720	36,809	41,123	34,507	64,511	54,184	370,381	37,038
Maldives	156	111	68	35	72	49	56	39	62	70	717	72

Table 4. Illicit Financial Flows (HMN+GER Non-Normalized) (cont)
(in millions of US dollars)

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
Mali	51	275	128	173	224	184	966	323	899	530	3,754	375
Mauritania	.	.	.	.	.	.	.	.	.	.	.	.
Mauritius	0	107	32	0	2	0	180	306	443	0	1,070	107
Mexico	35,621	38,085	40,738	47,746	47,749	58,592	65,151	38,128	51,954	38,094	461,859	46,186
Moldova	132	228	343	244	188	440	493	226	0	172	2,466	247
Mongolia	.	6	0	75	14	212	775	0	0	76	1,158	129
Montenegro	0	0	980	925	436	743	456	278	259	222	4,299	430
Morocco	242	554	906	3,487	683	600	1,857	2,232	777	577	11,916	1,192
Mozambique	266	83	0	0	365	127	0	0	31	0	873	87
Myanmar	19	114	633	604	626	336	1,362	1,010	2,132	0	6,836	684
Namibia	35	89	107	138	402	762	792	1,018	524	1,169	5,037	504
Nepal	540	364	414	503	678	574	884	1,552	1,885	651	8,045	805
Nicaragua	770	625	1,055	1,019	1,511	1,222	1,594	1,241	1,889	2,315	13,242	1,324
Niger	9	15	86	123	0	100	96	0	534	166	1,129	113
Nigeria	0	0	1,681	17,867	19,164	19,321	24,188	26,377	20,787	12,889	142,274	14,227
Oman	1,034	929	512	851	2,397	0	0	1,031	0	1,006	7,761	776
Pakistan	0	44	0	200	0	0	51	0	729	0	1,024	102
Panama	2,235	2,414	2,709	3,929	4,632	5,566	5,800	5,189	5,191	430	38,095	3,809
Papua New Guinea	52	119	93	0	15	33	184	479	448	896	2,319	232
Paraguay	1,072	1,830	2,183	2,756	3,268	3,851	5,461	4,769	6,941	7,993	40,125	4,012
Peru	733	750	660	930	997	585	1,355	2,064	0	1,020	9,095	909
Philippines	4,897	8,256	9,215	13,412	9,978	10,063	8,021	5,636	7,200	12,192	88,870	8,887
Poland	1,110	1,961	421	787	0	3,302	12,161	10,045	10,462	9,144	49,393	4,939
Qatar	1,031	1,260	0	5,568	4,909	261	6,766	21,173	12,537	9,315	62,819	6,282
Romania	856	289	0	0	0	4,173	4,038	1,729	145	0	11,230	1,123
Russian Federation	26,517	41,304	47,136	57,502	66,825	82,069	103,972	129,459	135,033	191,145	880,960	88,096
Rwanda	40	29	217	73	130	159	112	383	447	518	2,106	211
Samoa	59	84	82	331	116	144	176	103	115	142	1,352	135
Sao Tome and Principe	4	5	4	11	6	13	38	15	17	32	146	15
Saudi Arabia	0	0	0	36,393	21,535	16,863	33,671	65,419	38,910	53,638	266,429	26,643
Senegal	0	0	0	11	0	0	0	0	0	0	11	1
Serbia, Republic of	5,469	7,409	9,776	6,433	5,278	4,070	212	5,603	2,655	2,462	49,367	4,937
Seychelles	222	154	82	75	4	0	0	0	0	0	537	54
Sierra Leone	69	95	94	90	28	63	50	7	4	213	714	71

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
Solomon Islands	22	34	75	88	93	135	171	90	170	186	1,063	106
Somalia	.	.	.	.	.	.	.	.	.	.	.	.
South Africa	1,290	0	2,542	3,387	9,893	18,730	19,787	17,515	3,858	23,732	100,732	10,073
Sri Lanka	0	114	189	73	106	165	0	0	881	707	2,234	223
St. Kitts and Nevis	48	15	34	41	39	54	30	65	95	45	466	47
St. Lucia	21	57	60	91	193	28	10	13	0	0	471	47
St. Vincent and the Grenadines	170	153	298	374	195	140	232	184	117	52	1,915	192
Sudan	288	14	0	96	1,889	4,005	3,127	4,701	5,154	6,826	26,099	2,610
Suriname	105	75	121	117	33	7	285	72	168	77	1,058	106
Swaziland	27	92	99	150	510	1,142	366	433	71	419	3,309	331
Syrian Arab Republic	160	0	13,337	444	1,488	838	1,226	747	154	5,660	24,054	2,405
Tajikistan	225	148	187	127	265	337	18	1,439	0	0	2,746	275
Tanzania	551	340	96	704	0	0	390	315	1,313	817	4,526	453
Thailand	4,954	6,080	7,246	11,987	11,513	10,427	20,550	14,769	24,238	29,114	140,877	14,088
Timor-Leste, Dem. Rep. of	.	.	.	.	3	9	7	0	5	42	67	11
Togo	228	214	251	952	1,692	2,884	4,471	4,250	2,385	1,140	18,467	1,847
Tonga	15	27	51	21	25	49	30	33	5	3	259	26
Trinidad and Tobago	1,422	1,576	2,117	2,215	966	2,447	889	2,923	4,263	7,643	26,462	2,646
Tunisia	34	47	128	28	37	37	0	0	0	0	312	31
Turkey	2,507	1,998	0	1,851	1,586	3,502	3,343	8,180	4,108	10,203	37,277	3,728
Turkmenistan	688	602	.	.	.	.	.	.	.	0	1,290	430
Uganda	143	324	525	823	484	726	1,182	1,599	1,280	307	7,393	739
Ukraine	889	834	0	0	0	458	137	741	1,008	2,149	6,216	622
United Arab Emirates	0	800	1,000	5,500	11,800	0	51,700	24,544	7,600	11,700	114,644	11,464
Uruguay	2,669	351	347	456	284	790	171	489	1,677	929	8,162	816
Uzbekistan	0	0	0	0	0	0	0	0	0	0	0	0
Vanuatu	56	66	178	168	170	286	442	131	161	157	1,816	182
Venezuela, Rep. Bolivariana de	3,336	795	4,518	13,724	2,211	809	932	4,141	4,000	4,503	38,969	3,897
Vietnam	1,038	0	915	397	0	578	1,045	9,022	3,690	5,477	22,161	2,216
Yemen, Republic of	0	0	0	0	0	459	1,900	0	0	30	2,388	239
Zambia	520	1,005	1,837	2,074	2,474	3,110	2,535	1,875	2,611	1,302	19,344	1,934
Zimbabwe	662	0	306	357	1,790	97	4	106	25	0	3,347	335
All Developing Countries	270,252	301,512	384,528	498,921	511,355	594,036	789,530	770,298	832,438	946,677	5,899,548	589,955

Table 5. HMN (Balance of Payments)
(in millions of US Dollars)

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
Afghanistan	.	.	.	.	.	.	0	0	0	.	0	0
Albania	0	0	0	0	0	0	0	0	0	0	0	0
Algeria	.	.	.	189	1,962	500	3,358	2,673	1,265	2,184	12,131	1,733
Angola	68	822	0	574	0	1,641	1,236	0	0	17	4,358	436
Antigua and Barbuda	40	5	19	11	11	8	4	7	0	11	116	12
Argentina	1,890	1,428	0	0	0	0	0	0	606	3,603	7,527	753
Armenia, Republic of	4	2	6	0	16	2	0	0	0	0	29	3
Aruba	0	0	0	0	0	0	7	9	0	3	20	2
Azerbaijan, Republic of	87	112	50	126	256	361	845	1,461	990	0	4,287	429
Bahamas, The	0	0	0	149	0	0	0	53	283	0	485	48
Bahrain, Kingdom of	0	700	0	0	0	0	30	66	0	0	796	80
Bangladesh	349	0	25	644	623	905	179	1,034	54	1,168	4,981	498
Barbados	0	0	0	0	0	0	7	0	65	.	71	8
Belarus	289	13	0	0	286	0	194	0	0	0	783	78
Belize	9	35	4	8	8	39	12	5	0	7	126	13
Benin	0	0	10	0	0	0	0	6	0	.	16	2
Bhutan	.	.	.	.	0	137	0	0	0	11	148	25
Bolivia	640	174	625	374	105	112	0	454	802	0	3,286	329
Bosnia and Herzegovina	0	0	0	0	0	68	74	0	0	0	142	14
Botswana	0	161	293	0	0	0	0	1,801	352	0	2,607	261
Brazil	154	933	2,145	225	0	3,152	0	347	3,538	1,272	11,765	1,177
Brunei Darussalam	2,329	1,838	1,190	4,006	5,786	5,860	8,232	5,420	.	.	34,661	4,333
Bulgaria	716	889	0	1,219	986	3,052	4,229	0	0	0	11,091	1,109
Burkina Faso	4	4	0	5	9	0	0	0	0	.	23	3
Burundi	0	14	19	84	0	37	0	109	0	0	264	26
Cambodia	0	40	46	12	72	45	45	8	29	26	324	32
Cameroon	177	0	0	29	0	0	0	0	0	.	207	23
Cape Verde	8	12	0	0	9	0	108	36	85	30	289	29
Central African Republic	.	.	.	.	.	.	.	.	.	.	0	.
Chad	.	.	.	.	.	.	.	.	.	.	0	.
Chile	952	724	270	1,329	1,526	450	0	0	498	352	6,100	610
China, Mainland	0	0	0	0	0	0	0	41,383	52,936	13,766	108,085	10,808
Colombia	0	0	0	0	0	0	123	0	0	0	123	12
Comoros	.	.	.	.	.	.	.	.	.	.	0	.
Congo, Democratic Republic of	236	0	0	0	17	170	0	0	0	0	423	42
Congo, Republic of	220	116	93	0	0	199	.	.	.	.	627	105
Costa Rica	51	0	0	0	0	0	48	0	144	221	464	46
Cote d'Ivoire	26	888	0	57	38	0	44	37	25	.	1,115	124
Croatia	638	1,355	1,305	1,288	1,722	1,659	2,266	1,680	921	1,532	14,366	1,437
Djibouti	0	0	16	45	54	0	55	0	117	63	350	35
Dominica	0	0	0	0	0	0	0	0	6	14	20	2
Dominican Republic	139	1,568	981	456	164	0	32	216	1,140	0	4,697	470
Ecuador	317	0	0	0	0	0	1	131	0	0	449	45

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
Egypt	0	0	45	2,427	0	0	2,896	0	2,145	2,857	10,370	1,037
El Salvador	615	143	0	449	485	0	0	0	0	238	1,930	193
Equatorial Guinea	.	.	.	.	.	.	.	.	.	.	0	.
Eritrea	.	.	.	.	.	.	.	.	.	.	0	.
Ethiopia	915	390	354	0	0	158	0	501	3,075	1,803	7,197	720
Fiji	135	47	0	0	153	0	0	72	0	.	407	45
Gabon	125	260	357	415	.	.	.	.	.	.	1,157	289
Gambia, The	.	0	3	34	7	42	31	0	87	98	302	34
Georgia	0	6	0	0	62	33	44	0	23	0	169	17
Ghana	0	0	0	0	0	37	374	1,342	721	691	3,164	316
Grenada	.	.	.	.	.	.	.	.	.	.	0	.
Guatemala	65	61	0	0	0	0	0	0	359	225	709	71
Guinea	0	157	0	0	2	0	0	0	0	28	187	19
Guinea-Bissau	3	0	4	5	1	0	5	9	4	.	31	3
Guyana	1	20	43	68	53	82	95	131	172	36	702	70
Haiti	0	0	0	0	0	0	0	46	0	64	110	11
Honduras	0	0	0	190	324	347	0	111	22	0	994	99
Hungary	0	0	2,100	2,580	2,744	349	3,373	771	2,194	2,789	16,901	1,690
India	190	0	0	446	0	0	0	279	1,613	1,712	4,241	424
Indonesia	1,763	3,510	3,094	136	0	1,368	238	2,975	3,501	3,395	19,980	1,998
Iran, Islamic Republic of	.	.	.	.	.	.	.	.	.	.	0	.
Iraq	.	.	.	0	0	3,660	9,245	6,116	7,951	3,269	30,240	4,320
Jamaica	61	0	22	0	0	0	350	0	0	0	433	43
Jordan	130	0	0	0	206	0	0	0	0	0	336	34
Kazakhstan	0	932	1,016	1,800	3,128	2,966	5,746	783	0	5,619	21,990	2,199
Kenya	0	277	67	245	0	258	0	0	0	0	847	85
Kiribati	.	.	.	.	.	.	.	.	.	.	0	.
Kosovo, Republic of	.	.	0	0	0	0	0	0	0	0	0	0
Kuwait	1,869	574	0	0	0	4,732	10,049	0	0	1,698	18,922	1,892
Kyrgyz Republic	22	0	19	0	0	356	0	82	46	304	830	83
Lao PDR	130	82	0	0	403	735	409	523	402	322	3,005	301
Latvia	71	13	0	296	0	212	577	0	0	103	1,271	127
Lebanon	0	0	734	608	2,818	5,997	1,746	3,042	0	2,038	16,982	1,698
Lesotho	179	71	0	0	0	0	123	256	0	0	630	63
Liberia	.	.	47	35	98	76	43	288	106	27	720	90
Libya	0	0	0	1,497	0	0	1,753	0	2,137	0	5,387	539
Lithuania	0	0	0	49	289	54	0	0	0	0	392	39
Macedonia, FYR	10	33	0	6	0	52	31	0	0	6	137	14
Madagascar	0	0	35	0	.	.	.	.	.	.	35	9
Malawi	0	27	0	23	40	0	153	55	0	71	369	37
Malaysia	391	4	0	6,555	7,460	5,201	8,592	5,242	21,345	9,965	64,754	6,475
Maldives	0	0	0	0	0	0	0	0	0	0	0	0

Table 5. HMN (Balance of Payments) (cont)
(in millions of US Dollars)

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
Mali	6	0	26	29	37	0	0	74	0	.	173	19
Mauritania	.	.	.	.	.	.	.	.	.	.	0	.
Mauritius	0	0	0	0	0	0	0	0	0	0	0	0
Mexico	1,903	4,411	4,816	4,077	86	0	5,126	4,395	19,774	10,732	55,322	5,532
Moldova	24	0	0	0	0	0	0	0	0	0	24	2
Mongolia	0	6	0	75	14	212	775	0	0	76	1,158	116
Montenegro	.	.	.	.	.	231	0	0	0	0	231	46
Morocco	182	297	282	407	521	0	412	521	160	243	3,025	302
Mozambique	60	0	0	0	0	0	0	0	0	0	60	6
Myanmar	19	78	141	604	626	336	1,362	1,010	2,132	0	6,308	631
Namibia	0	89	0	0	0	0	0	0	317	0	406	41
Nepal	67	0	0	0	0	0	107	0	181	0	355	36
Nicaragua	327	100	405	63	391	50	331	44	168	283	2,162	216
Niger	9	15	0	0	0	18	57	0	0	.	99	11
Nigeria	0	0	0	17,344	17,151	14,399	20,783	26,377	16,500	7,150	119,704	11,970
Oman	842	565	396	851	9	0	0	1,031	0	1,006	4,700	470
Pakistan	0	44	0	200	0	0	51	0	729	0	1,024	102
Panama	0	0	0	358	0	474	0	0	0	430	1,263	126
Papua New Guinea	0	0	0	0	15	0	73	0	91	.	179	20
Paraguay	263	41	0	211	0	505	46	0	0	0	1,066	107
Peru	0	0	0	0	407	138	123	596	0	1,020	2,284	228
Philippines	0	898	274	1,798	1,592	2,082	1,119	0	1,988	1,310	11,061	1,106
Poland	981	1,961	0	787	0	3,302	12,161	10,045	10,462	9,144	48,843	4,884
Qatar	1,031	1,260	0	5,568	4,703	0	2,310	2,206	11,384	3,738	32,200	3,220
Romania	856	289	0	0	0	1,320	2,065	1,729	145	0	6,404	640
Russian Federation	6,078	9,179	5,870	7,895	0	9,732	3,051	6,394	9,136	12,106	69,441	6,944
Rwanda	0	0	9	0	0	1	20	0	14	0	42	4
Samoa	.	.	3	7	0	2	39	0	0	27	78	10
Sao Tome and Principe	0	0	0	0	6	10	32	6	10	7	70	7
Saudi Arabia	0	0	0	34,459	20,560	15,629	30,026	60,754	34,380	48,178	243,986	24,399
Senegal	0	0	0	3	0	0	0	0	0	.	3	0
Serbia, Republic of	.	.	.	.	.	0	212	76	0	0	288	58
Seychelles	10	5	0	1	0	0	0	0	0	0	15	2
Sierra Leone	16	50	54	58	28	15	32	7	4	7	271	27

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
Solomon Islands	0	0	6	0	0	0	2	0	19	35	62	6
Somalia	.	.	.	.	.	.	.	.	.	.	0	.
South Africa	485	0	0	0	0	0	0	804	0	0	1,289	129
Sri Lanka	0	114	189	73	106	165	0	0	881	707	2,234	223
St. Kitts and Nevis	0	0	8	0	1	10	3	19	31	0	72	7
St. Lucia	2	0	0	15	0	1	10	5	0	0	33	3
St. Vincent and the Grenadines	0	0	17	23	16	0	0	0	0	0	56	6
Sudan	0	14	0	0	1,833	2,851	2,724	3,077	4,421	2,768	17,688	1,769
Suriname	0	0	0	0	0	0	100	19	168	77	364	36
Swaziland	0	92	0	41	238	701	0	55	0	.	1,127	125
Syrian Arab Republic	160	0	256	137	1,488	746	1,226	747	0	.	4,761	529
Tajikistan	56	30	32	76	265	337	18	0	0	0	814	81
Tanzania	551	340	96	704	0	0	390	248	1,296	317	3,942	394
Thailand	0	0	710	0	0	0	0	0	3,837	0	4,547	455
Timor-Leste, Dem. Rep. of	.	.	.	.	3	9	7	0	5	42	67	11
Togo	0	10	0	0	0	0	0	0	0	.	10	1
Tonga	0	14	38	11	12	39	9	27	.	.	151	19
Trinidad and Tobago	425	0	269	553	344	345	0	0	0	1,069	3,005	301
Tunisia	34	47	128	28	37	37	0	0	0	0	312	31
Turkey	759	0	0	0	228	0	0	0	0	0	987	99
Turkmenistan	.	.	.	.	.	.	.	.	.	.	0	.
Uganda	124	164	270	450	9	7	0	273	0	0	1,297	130
Ukraine	889	834	0	0	0	458	0	0	0	0	2,182	218
United Arab Emirates	0	800	1,000	5,500	11,800	0	51,700	23,500	7,600	11,700	113,600	11,360
Uruguay	2,394	0	0	173	152	279	0	0	693	302	3,994	399
Uzbekistan	.	.	.	.	.	.	.	.	.	.	0	.
Vanuatu	21	22	25	17	4	5	0	37	0	0	130	13
Venezuela, Rep. Bolivariana de	2,781	795	2,503	13,588	2,211	809	932	3,223	2,955	3,644	33,442	3,344
Vietnam	1,038	0	915	397	0	578	1,045	9,022	3,690	5,477	22,161	2,216
Yemen, Republic of	0	0	0	0	0	0	0	0	0	0	0	0
Zambia	0	169	0	75	40	58	0	108	46	0	496	50
Zimbabwe	.	.	.	.	.	.	.	.	.	.	0	.
All Developing Countries	38,410	41,172	33,776	125,355	96,853	101,004	205,481	235,990	242,975	183,233	1,304,248	130,425

Table 6. GER Non-Normalized
(in millions of US Dollars)

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
Afghanistan	1,512	892	668	527	161	0	0	0	0	0	3,760	376
Albania	1	16	13	86	107	270	161	54	42	277	1,028	103
Algeria	482	490	751	0	297	0	0	1,064	0	0	3,084	308
Angola	.	.	.	.	.	.	.	.	1,692	0	1,692	846
Antigua and Barbuda	.	.	.	.	.	.	.	.	.	0	0	0
Argentina	582	0	954	598	0	906	4,345	0	0	0	7,385	739
Armenia, Republic of	81	216	214	352	370	805	1,124	832	1,045	1,163	6,200	620
Aruba	805	1,226	2,189	3,537	3,708	3,935	4,911	1,832	125	3,607	25,876	2,588
Azerbaijan, Republic of	.	.	.	.	2,206	8,178	0	2,392	0	0	12,776	2,129
Bahamas, The	772	1,001	1,062	1,693	1,330	1,622	2,086	1,618	1,936	2,030	15,150	1,515
Bahrain, Kingdom of	651	627	1,509	2,249	2,304	1,694	0	0	0	0	9,033	903
Bangladesh	286	830	815	411	2,024	1,678	907	372	2,137	1,637	11,095	1,110
Barbados	301	329	574	534	69	54	0	0	26	0	1,888	189
Belarus	2,258	3,141	3,917	4,144	5,321	9,080	14,782	9,207	8,365	14,088	74,302	7,430
Belize	64	84	87	91	76	134	140	99	72	113	960	96
Benin	0	61	107	34	0	0	0	0	195	0	397	40
Bhutan	.	.	.	.	.	.	.	.	.	.	.	.
Bolivia	214	0	0	0	0	0	0	0	0	0	214	21
Bosnia and Herzegovina	0	0	0	0	0	0	0	0	0	0	0	0
Botswana	66	0	172	228	553	1,093	1,079	998	227	1,428	5,844	584
Brazil	8,745	11,136	13,752	16,602	10,681	14,212	22,174	22,052	28,750	32,824	180,927	18,093
Brunei Darussalam	437	633	402	647	0	1,004	208	376	0	0	3,707	371
Bulgaria	1,112	1,702	2,306	1,800	1,455	1,565	1,139	888	731	1,797	14,494	1,449
Burkina Faso	124	103	287	189	189	328	396	409	381	535	2,940	294
Burundi	6	2	0	28	131	25	26	46	51	161	475	48
Cambodia	280	326	403	0	0	0	0	0	0	0	1,008	101
Cameroon	98	264	861	436	941	1,261	1,540	197	321	483	6,402	640
Cape Verde	12	21	5	8	18	11	15	4	5	0	99	10
Central African Republic	67	13	6	12	0	3	0	35	33	30	200	20
Chad	1,076	399	499	429	734	988	874	1,161	1,188	1,598	8,946	895
Chile	1,894	1,818	2,550	3,386	3,520	3,992	8,046	3,488	5,101	5,304	39,099	3,910
China, Mainland	67,498	69,284	87,757	90,315	94,555	112,056	102,972	92,538	112,924	137,582	967,481	96,748
Colombia	1,016	1,254	1,750	1,323	533	592	2,603	1,283	0	1,540	11,894	1,189
Comoros	9	6	15	16	24	20	21	28	27	106	272	27
Congo, Democratic Republic of	340	412	597	924	549	209	0	281	285	0	3,598	360
Congo, Republic of	0	923	2,962	665	2,151	1,523	2,630	616	1,758	826	14,054	1,405
Costa Rica	2,307	3,440	4,653	5,291	5,377	5,536	6,768	8,727	17,196	20,890	80,184	8,018
Cote d'Ivoire	1,224	2,144	2,587	3,761	2,607	3,309	2,379	1,178	1,784	1,048	22,023	2,202
Croatia	356	592	303	124	0	0	0	0	0	0	1,376	138
Djibouti	164	206	213	232	302	278	344	298	361	438	2,836	284
Dominica	13	18	26	41	46	76	150	128	118	169	786	79
Dominican Republic	496	318	0	0	725	347	1,060	3,824	4,061	3,842	14,673	1,467
Ecuador	300	24	861	1,318	648	671	4,804	380	703	1,348	11,058	1,106

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
Egypt	1,507	1,248	3,110	2,671	4,483	4,730	3,174	0	1,028	3,558	25,508	2,551
El Salvador	470	499	657	621	448	1,027	882	955	928	555	7,041	704
Equatorial Guinea	59	0	320	172	355	918	1,970	2,875	2,906	3,223	12,798	1,280
Eritrea	.	.	.	.	.	.	.	.	.	.	.	.
Ethiopia	316	104	51	785	1,152	1,352	1,865	2,544	2,568	2,303	13,040	1,304
Fiji	64	207	239	159	255	240	391	204	252	330	2,340	234
Gabon	377	238	258	0	0	0	0	177	327	146	1,524	152
Gambia, The	18	10	27	20	23	30	33	40	47	36	285	28
Georgia	243	376	444	403	644	394	839	515	288	219	4,366	437
Ghana	0	0	0	0	0	0	0	0	0	0	0	0
Grenada	33	42	24	51	44	58	58	48	60	69	485	49
Guatemala	1,368	1,325	1,400	1,562	920	1,019	969	3,356	2,043	2,870	16,832	1,683
Guinea	116	159	421	292	289	633	251	0	373	408	2,942	294
Guinea-Bissau	41	6	33	18	12	193	2	32	69	119	526	53
Guyana	59	60	84	140	90	209	202	183	216	262	1,505	150
Haiti	10	31	40	41	87	95	120	33	61	55	573	57
Honduras	2,679	2,722	2,920	2,984	3,031	3,041	3,294	2,869	3,457	3,560	30,558	3,056
Hungary	0	0	0	0	0	0	0	0	0	0	0	0
India	7,703	10,068	18,697	19,575	27,569	33,108	44,645	28,336	66,770	83,221	339,691	33,969
Indonesia	13,033	13,039	15,342	13,123	16,036	17,063	27,080	17,581	13,341	16,208	161,847	16,185
Iran, Islamic Republic of	0	0	0	0	0	0	0	0	0	0	0	0
Iraq	.	.	.	.	.	.	10,423	12,023	14,331	11,760	48,538	12,134
Jamaica	299	430	413	686	322	28	544	470	162	222	3,577	358
Jordan	0	0	128	0	0	0	94	127	0	0	348	35
Kazakhstan	968	99	0	0	0	0	0	0	747	2,597	4,411	441
Kenya	0	0	13	0	0	0	0	0	0	0	13	1
Kiribati	.	.	.	.	.	.	.	.	.	.	.	.
Kosovo, Republic of	.	.	.	.	.	.	.	.	.	.	.	.
Kuwait	376	0	65	791	960	476	0	1,465	0	2,067	6,200	620
Kyrgyz Republic	0	0	0	0	0	0	0	0	0	0	0	0
Lao PDR	0	0	6	0	113	114	178	179	76	472	1,138	114
Latvia	990	1,197	1,943	1,968	2,474	2,948	2,710	2,093	1,614	3,960	21,896	2,190
Lebanon	528	0	218	1,070	374	1,009	1,303	979	529	273	6,284	628
Lesotho	16	0	0	0	159	297	311	331	0	410	1,523	152
Liberia	886	814	851	946	1,478	1,829	605	1,040	701	387	9,536	954
Libya	58	0	0	0	0	0	0	0	0	0	58	6
Lithuania	1,309	1,851	1,101	1,409	853	1,040	1,935	977	1,503	4,267	16,245	1,624
Macedonia, FYR	168	248	381	488	305	755	1,044	564	572	928	5,452	545
Madagascar	122	59	721	412	1,596	74	636	165	108	265	4,158	416
Malawi	112	184	160	471	418	456	857	698	687	907	4,950	495
Malaysia	19,346	20,758	26,733	28,740	29,260	31,608	32,531	29,266	43,166	44,218	305,626	30,563
Maldives	156	111	68	35	72	49	56	39	62	70	717	72

Table 6. GER Non-Normalized (cont)
(in millions of US Dollars)

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
Mali	45	275	102	144	187	184	966	249	899	530	3,581	358
Mauritania	.	.	.	.	.	.	.	.	.	.	.	.
Mauritius	0	107	32	0	2	0	180	306	443	0	1,070	107
Mexico	33,718	33,674	35,921	43,669	47,663	58,592	60,025	33,733	32,180	27,362	406,537	40,654
Moldova	108	228	343	244	188	440	493	226	0	172	2,442	244
Mongolia	0	0	0	0	0	0	0	0	0	0	0	0
Montenegro	.	.	980	925	436	512	456	278	259	222	4,068	508
Morocco	61	256	624	3,080	162	600	1,445	1,711	618	334	8,891	889
Mozambique	206	83	0	0	365	127	0	0	31	0	813	81
Myanmar	0	36	492	0	0	0	0	0	0	0	529	53
Namibia	35	0	107	138	402	762	792	1,018	207	1,169	4,630	463
Nepal	473	364	414	503	678	574	777	1,552	1,704	651	7,690	769
Nicaragua	443	525	649	957	1,120	1,172	1,264	1,197	1,721	2,032	11,080	1,108
Niger	0	0	86	123	0	82	39	0	534	166	1,031	103
Nigeria	0	0	1,681	522	2,013	4,922	3,406	0	4,287	5,739	22,570	2,257
Oman	192	364	116	0	2,389	0	0	0	0	0	3,061	306
Pakistan	0	0	0	0	0	0	0	0	0	0	0	0
Panama	2,235	2,414	2,709	3,571	4,632	5,092	5,800	5,189	5,191	0	36,832	3,683
Papua New Guinea	52	119	93	0	0	33	111	479	357	896	2,141	214
Paraguay	810	1,789	2,183	2,545	3,268	3,346	5,415	4,769	6,941	7,993	39,059	3,906
Peru	733	750	660	930	590	447	1,232	1,467	0	0	6,810	681
Philippines	4,897	7,358	8,942	11,614	8,386	7,981	6,902	5,636	5,212	10,882	77,809	7,781
Poland	130	0	421	0	0	0	0	0	0	0	551	55
Qatar	0	0	0	0	206	261	4,456	18,967	1,153	5,577	30,620	3,062
Romania	0	0	0	0	0	2,853	1,973	0	0	0	4,826	483
Russian Federation	20,439	32,125	41,266	49,606	66,825	72,337	100,921	123,065	125,897	179,039	811,519	81,152
Rwanda	40	29	208	73	130	158	92	383	433	518	2,063	206
Samoa	59	84	79	324	116	142	137	103	115	116	1,275	127
Sao Tome and Principe	4	5	4	11	1	2	6	9	7	25	75	8
Saudi Arabia	0	0	0	1,935	974	1,234	3,645	4,664	4,530	5,460	22,443	2,244
Senegal	0	0	0	8	0	0	0	0	0	0	8	1
Serbia, Republic of	5,469	7,409	9,776	6,433	5,278	4,070	0	5,527	2,655	2,462	49,079	4,908
Seychelles	212	149	82	75	4	0	0	0	0	0	521	52
Sierra Leone	53	45	41	32	0	48	18	0	0	206	443	44

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
Solomon Islands	22	34	69	88	93	135	169	90	151	151	1,001	100
Somalia	.	.	.	.	.	.	.	.	.	.	.	.
South Africa	805	0	2,542	3,387	9,893	18,730	19,787	16,710	3,858	23,732	99,443	9,944
Sri Lanka	0	0	0	0	0	0	0	0	0	0	0	0
St. Kitts and Nevis	48	15	26	41	39	43	27	46	64	45	393	39
St. Lucia	19	57	60	75	193	26	0	8	0	0	438	44
St. Vincent and the Grenadines	170	153	281	351	179	139	232	184	117	52	1,859	186
Sudan	288	0	0	96	56	1,154	402	1,624	733	4,058	8,411	841
Suriname	105	75	121	117	33	7	185	53	0	0	694	69
Swaziland	27	92	99	150	510	1,142	366	433	71	419	3,309	331
Syrian Arab Republic	0	0	13,080	307	0	92	0	0	154	5,660	19,294	1,929
Tajikistan	169	118	154	51	0	0	0	1,439	0	0	1,931	193
Tanzania	0	0	0	0	0	0	0	67	18	500	584	58
Thailand	4,954	6,080	6,535	11,987	11,513	10,427	20,550	14,769	20,402	29,114	136,330	13,633
Timor-Leste, Dem. Rep. of	.	.	.	.	.	.	.	.	.	.	.	.
Togo	228	204	251	952	1,692	2,884	4,471	4,250	2,385	1,140	18,457	1,846
Tonga	15	13	12	9	12	9	22	6	5	3	107	11
Trinidad and Tobago	997	1,576	1,848	1,662	622	2,102	889	2,923	4,263	6,574	23,457	2,346
Tunisia	0	0	0	0	0	0	0	0	0	0	0	0
Turkey	1,748	1,998	0	1,851	1,358	3,502	3,343	8,180	4,108	10,203	36,290	3,629
Turkmenistan	688	602	0	0	0	0	0	0	0	0	1,290	129
Uganda	19	160	255	374	475	719	1,182	1,325	1,280	307	6,096	610
Ukraine	0	0	0	0	0	0	137	741	1,008	2,149	4,034	403
United Arab Emirates	0	0	0	0	0	0	0	1,044	0	0	1,044	104
Uruguay	274	351	347	282	133	511	171	489	984	626	4,167	417
Uzbekistan	.	.	.	.	.	.	.	.	.	.	.	.
Vanuatu	35	45	153	152	166	281	442	93	161	157	1,686	169
Venezuela, Rep. Bolivariana de	555	0	2,015	135	0	0	0	918	1,045	859	5,527	553
Vietnam	0	0	0	0	0	0	0	0	0	0	0	0
Yemen, Republic of	0	0	0	0	0	459	1,900	0	0	30	2,388	239
Zambia	520	835	1,837	1,999	2,435	3,052	2,535	1,767	2,565	1,302	18,847	1,885
Zimbabwe	662	0	306	357	1,790	97	4	106	25	0	3,347	335
All Developing Countries	231,842	260,432	350,698	373,546	414,740	493,733	584,049	534,363	589,397	763,444	4,596,244	459,624

Table 7. GER Normalized
(in millions of US Dollars)

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
Afghanistan	1,512	892	668	527	161	0	0	0	0	0	3,760	376
Albania	0	0	0	86	107	270	161	0	0	277	901	90
Algeria	0	0	0	0	0	0	0	0	0	0	0	0
Angola	.	.	.	.	.	.	.	.	0	0	0	0
Antigua and Barbuda	.	.	.	.	.	.	.	.	.	0	0	0
Argentina	0	0	0	0	0	0	0	0	0	0	0	0
Armenia, Republic of	81	216	214	352	370	805	1,124	832	1,045	1,163	6,200	620
Aruba	805	1,226	2,189	3,537	3,708	3,935	4,911	1,832	125	3,607	25,876	2,588
Azerbaijan, Republic of	.	.	.	.	2,206	8,178	0	2,392	0	0	12,776	2,129
Bahamas, The	772	1,001	1,062	1,693	1,330	1,622	2,086	1,618	1,936	2,030	15,150	1,515
Bahrain, Kingdom of	651	0	1,509	2,249	2,304	1,694	0	0	0	0	8,407	841
Bangladesh	0	830	815	0	2,024	1,678	0	0	2,137	0	7,483	748
Barbados	301	329	574	534	69	54	0	0	0	0	1,863	186
Belarus	2,258	3,141	3,917	4,144	5,321	9,080	14,782	9,207	8,365	14,088	74,302	7,430
Belize	64	84	87	91	76	134	140	99	72	113	960	96
Benin	0	61	107	0	0	0	0	0	195	0	363	36
Bhutan	.	.	.	.	.	.	.	.	.	.	.	.
Bolivia	214	0	0	0	0	0	0	0	0	0	214	21
Bosnia and Herzegovina	0	0	0	0	0	0	0	0	0	0	0	0
Botswana	0	0	0	0	553	1,093	1,079	998	0	1,428	5,152	515
Brazil	8,745	11,136	13,752	16,602	0	0	22,174	22,052	28,750	32,824	156,035	15,603
Brunei Darussalam	437	633	402	647	0	1,004	208	376	0	0	3,707	371
Bulgaria	1,112	1,702	2,306	1,800	0	0	0	0	0	0	6,920	692
Burkina Faso	124	103	287	189	189	328	396	409	381	535	2,940	294
Burundi	6	0	0	28	131	25	26	46	51	161	473	47
Cambodia	280	326	403	0	0	0	0	0	0	0	1,008	101
Cameroon	0	264	861	436	941	1,261	1,540	0	0	483	5,785	579
Cape Verde	12	21	5	8	18	11	15	4	5	0	99	10
Central African Republic	67	13	0	0	0	0	0	35	33	30	179	18
Chad	1,076	399	499	429	734	988	874	1,161	1,188	1,598	8,946	895
Chile	1,894	0	0	0	0	0	8,046	0	0	0	9,940	994
China, Mainland	67,498	69,284	87,757	90,315	0	0	0	0	0	0	314,853	31,485
Colombia	0	0	1,750	0	0	0	0	0	0	0	1,750	175
Comoros	9	6	15	16	24	20	21	28	27	106	272	27
Congo, Democratic Republic of	340	412	597	924	549	0	0	0	0	0	2,823	282
Congo, Republic of	0	923	2,962	665	2,151	1,523	2,630	616	1,758	0	13,228	1,323
Costa Rica	2,307	3,440	4,653	5,291	5,377	5,536	6,768	8,727	17,196	20,890	80,184	8,018
Cote d'Ivoire	1,224	2,144	2,587	3,761	2,607	3,309	2,379	1,178	1,784	0	20,975	2,098
Croatia	0	0	0	0	0	0	0	0	0	0	0	0
Djibouti	164	206	213	232	302	278	344	298	361	438	2,836	284
Dominica	13	18	26	41	46	76	150	128	118	169	786	79
Dominican Republic	496	318	0	0	725	347	1,060	3,824	4,061	3,842	14,673	1,467
Ecuador	0	0	861	1,318	0	0	4,804	0	0	0	6,984	698

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
Egypt	1,507	1,248	3,110	2,671	4,483	4,730	3,174	0	0	3,558	24,480	2,448
El Salvador	470	499	657	621	448	1,027	882	955	928	555	7,041	704
Equatorial Guinea	0	0	0	0	0	0	1,970	2,875	2,906	3,223	10,974	1,097
Eritrea	.	.	.	.	.	.	.	.	.	.	.	.
Ethiopia	316	104	0	785	1,152	1,352	1,865	2,544	2,568	2,303	12,988	1,299
Fiji	64	207	239	159	255	240	391	204	252	330	2,340	234
Gabon	377	0	0	0	0	0	0	0	0	0	377	38
Gambia, The	18	10	27	20	23	30	33	40	47	36	285	28
Georgia	243	376	444	403	644	394	839	515	288	219	4,366	437
Ghana	0	0	0	0	0	0	0	0	0	0	0	0
Grenada	33	42	24	51	44	58	58	48	60	69	485	49
Guatemala	1,368	1,325	1,400	1,562	920	1,019	969	3,356	2,043	2,870	16,832	1,683
Guinea	116	159	421	292	289	633	251	0	373	408	2,942	294
Guinea-Bissau	41	0	33	18	12	193	0	32	69	119	518	52
Guyana	59	60	84	140	90	209	202	183	216	262	1,505	150
Haiti	0	0	40	0	87	95	120	0	61	0	403	40
Honduras	2,679	2,722	2,920	2,984	3,031	3,041	3,294	2,869	3,457	3,560	30,558	3,056
Hungary	0	0	0	0	0	0	0	0	0	0	0	0
India	7,703	10,068	18,697	19,575	27,569	33,108	44,645	28,336	66,770	83,221	339,691	33,969
Indonesia	13,033	13,039	15,342	13,123	16,036	17,063	27,080	17,581	0	0	132,298	13,230
Iran, Islamic Republic of	0	0	0	0	0	0	0	0	0	0	0	0
Iraq	.	.	.	.	.	.	10,423	12,023	14,331	11,760	48,538	12,134
Jamaica	299	430	413	686	322	0	544	470	162	222	3,549	355
Jordan	0	0	0	0	0	0	0	0	0	0	0	0
Kazakhstan	0	0	0	0	0	0	0	0	0	0	0	0
Kenya	0	0	0	0	0	0	0	0	0	0	0	0
Kiribati	.	.	.	.	.	.	.	.	.	.	.	.
Kosovo, Republic of	.	.	.	.	.	.	.	.	.	.	.	.
Kuwait	0	0	0	0	0	0	0	0	0	0	0	0
Kyrgyz Republic	0	0	0	0	0	0	0	0	0	0	0	0
Lao PDR	0	0	0	0	113	114	178	179	0	472	1,057	106
Latvia	990	1,197	1,943	1,968	2,474	2,948	2,710	2,093	1,614	3,960	21,896	2,190
Lebanon	528	0	0	1,070	374	1,009	1,303	979	529	0	5,792	579
Lesotho	0	0	0	0	159	297	311	331	0	410	1,507	151
Liberia	886	814	851	946	1,478	1,829	605	1,040	701	387	9,536	954
Libya	0	0	0	0	0	0	0	0	0	0	0	0
Lithuania	1,309	1,851	1,101	1,409	0	0	0	0	0	4,267	9,937	994
Macedonia, FYR	168	248	381	488	305	755	1,044	564	572	928	5,452	545
Madagascar	122	0	721	412	1,596	0	636	165	108	265	4,024	402
Malawi	112	184	160	471	418	456	857	698	687	907	4,950	495
Malaysia	19,346	20,758	26,733	28,740	29,260	31,608	32,531	29,266	43,166	44,218	305,626	30,563
Maldives	156	111	68	35	72	49	56	39	62	70	717	72

Table 7. GER Normalized (cont)
(in millions of US Dollars)

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
Mali	0	275	102	144	187	184	966	249	899	530	3,536	354
Mauritania	.	.	.	.	.	.	.	.	.	.	.	.
Mauritius	0	0	0	0	0	0	0	306	443	0	749	75
Mexico	33,718	33,674	35,921	43,669	47,663	58,592	60,025	33,733	32,180	0	379,175	37,918
Moldova	108	228	343	244	188	440	493	226	0	0	2,270	227
Mongolia	0	0	0	0	0	0	0	0	0	0	0	0
Montenegro	.	.	980	925	436	512	456	278	259	222	4,068	508
Morocco	0	0	0	3,080	0	0	0	1,711	0	0	4,791	479
Mozambique	206	0	0	0	365	0	0	0	0	0	571	57
Myanmar	0	0	492	0	0	0	0	0	0	0	492	49
Namibia	0	0	0	0	402	762	792	1,018	0	1,169	4,143	414
Nepal	473	364	414	503	678	574	777	1,552	1,704	651	7,690	769
Nicaragua	443	525	649	957	1,120	1,172	1,264	1,197	1,721	2,032	11,080	1,108
Niger	0	0	86	123	0	82	0	0	534	166	992	99
Nigeria	0	0	0	0	0	0	0	0	0	0	0	0
Oman	0	0	0	0	2,389	0	0	0	0	0	2,389	239
Pakistan	0	0	0	0	0	0	0	0	0	0	0	0
Panama	2,235	2,414	2,709	3,571	4,632	5,092	5,800	5,189	5,191	0	36,832	3,683
Papua New Guinea	0	0	0	0	0	0	0	479	0	896	1,375	138
Paraguay	810	1,789	2,183	2,545	3,268	3,346	5,415	4,769	6,941	7,993	39,059	3,906
Peru	0	0	0	0	0	0	0	0	0	0	0	0
Philippines	4,897	7,358	8,942	11,614	8,386	7,981	6,902	5,636	5,212	10,882	77,809	7,781
Poland	0	0	0	0	0	0	0	0	0	0	0	0
Qatar	0	0	0	0	0	0	0	18,967	0	0	18,967	1,897
Romania	0	0	0	0	0	0	0	0	0	0	0	0
Russian Federation	20,439	32,125	41,266	49,606	66,825	72,337	100,921	123,065	125,897	179,039	811,519	81,152
Rwanda	40	29	208	73	130	158	92	383	433	518	2,063	206
Samoa	59	84	79	324	116	142	137	103	115	116	1,275	127
Sao Tome and Principe	4	5	4	11	1	2	6	9	7	25	75	8
Saudi Arabia	0	0	0	0	0	0	0	0	0	0	0	0
Senegal	0	0	0	0	0	0	0	0	0	0	0	0
Serbia, Republic of	5,469	7,409	9,776	6,433	5,278	4,070	0	5,527	2,655	2,462	49,079	4,908
Seychelles	212	149	82	75	0	0	0	0	0	0	517	52
Sierra Leone	53	45	41	32	0	48	0	0	0	206	425	42

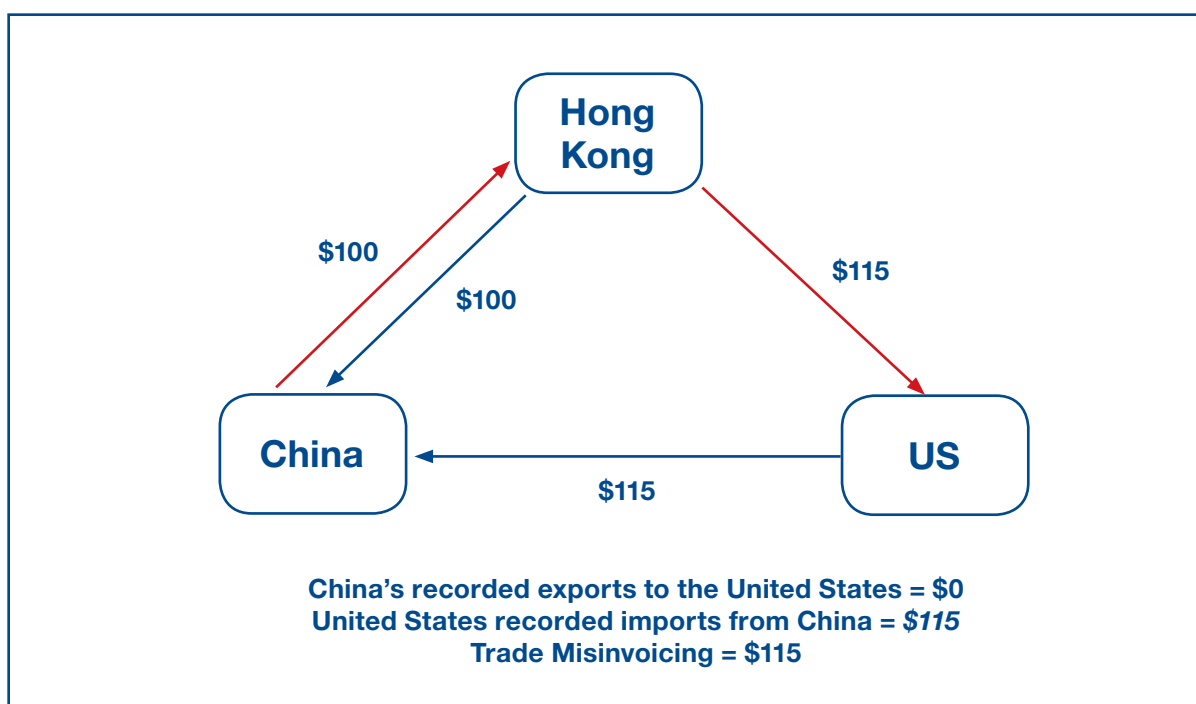
Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Cumulative	Average
Solomon Islands	22	34	69	88	93	135	169	90	151	151	1,001	100
Somalia	.	.	.	.	.	.	.	.	.	.	.	.
South Africa	0	0	0	0	9,893	18,730	19,787	16,710	0	23,732	88,852	8,885
Sri Lanka	0	0	0	0	0	0	0	0	0	0	0	0
St. Kitts and Nevis	48	15	26	41	39	43	27	46	64	45	393	39
St. Lucia	19	57	60	75	193	26	0	0	0	0	430	43
St. Vincent and the Grenadines	170	153	281	351	179	139	232	184	117	52	1,859	186
Sudan	288	0	0	0	0	1,154	0	1,624	0	4,058	7,124	712
Suriname	105	75	121	117	0	0	185	0	0	0	602	60
Swaziland	0	0	0	0	510	1,142	366	433	0	419	2,870	287
Syrian Arab Republic	0	0	13,080	0	0	0	0	0	0	5,660	18,740	1,874
Tajikistan	169	118	154	0	0	0	0	1,439	0	0	1,880	188
Tanzania	0	0	0	0	0	0	0	0	0	500	500	50
Thailand	0	0	0	11,987	0	0	20,550	0	20,402	29,114	82,052	8,205
Timor-Leste, Dem. Rep. of	.	.	.	.	.	.	.	.	.	.	.	.
Togo	228	204	251	952	1,692	2,884	4,471	4,250	2,385	1,140	18,457	1,846
Tonga	15	13	12	9	12	9	22	6	5	3	107	11
Trinidad and Tobago	997	1,576	1,848	1,662	0	2,102	0	2,923	4,263	6,574	21,945	2,195
Tunisia	0	0	0	0	0	0	0	0	0	0	0	0
Turkey	0	0	0	0	0	0	0	0	0	0	0	0
Turkmenistan	688	602	0	0	0	0	0	0	0	0	1,290	129
Uganda	0	160	255	374	475	719	1,182	1,325	1,280	307	6,077	608
Ukraine	0	0	0	0	0	0	0	0	0	0	0	0
United Arab Emirates	0	0	0	0	0	0	0	0	0	0	0	0
Uruguay	274	351	347	0	0	511	0	0	984	0	2,466	247
Uzbekistan	.	.	.	.	.	.	.	.	.	.	.	.
Vanuatu	35	45	153	152	166	281	442	93	161	157	1,686	169
Venezuela, Rep. Bolivariana de	0	0	0	0	0	0	0	0	0	0	0	0
Vietnam	0	0	0	0	0	0	0	0	0	0	0	0
Yemen, Republic of	0	0	0	0	0	0	1,900	0	0	0	1,900	190
Zambia	520	835	1,837	1,999	2,435	3,052	2,535	1,767	2,565	1,302	18,847	1,885
Zimbabwe	662	0	306	357	1,790	0	0	0	0	0	3,115	312
All Developing Countries	217,808	245,291	329,963	356,633	283,217	331,929	448,603	398,533	428,124	532,504	3,572,605	357,260

Appendix 2. A Discussion on the Trade Discrepancies Arising through Re-Exporting via Hong Kong

1. International trade typically involves an exchange of goods or services produced in a country against payment by users in a foreign country who consume those good or services. This bilateral exchange of goods and services against a financial settlement (rather than barter) is the basic transaction underlying all trade misinvoicing models. One way in which global trade has become more complex than the typical “country A to country B” bilateral trade is evident in the rise of trade entrepôts like Hong Kong, Singapore, and Dubai. Increasingly, these entrepôts have been intermediating trade between buyers and sellers in different markets. This intermediation is best illustrated by China’s use of Hong Kong as a trade entrepôt. Failure to explicitly account for the role of trade entrepôts in international trade can distort estimates of trade misinvoicing.
2. Hong Kong’s long track record in international finance and trade relations makes it an excellent trade entrepôt to facilitate mainland China’s trade with the rest of the world. It is often more cost-effective for a Chinese manufacturer of goods to outsource its marketing and distribution operations to Hong Kong rather than retain these functions in-house. Similarly, an interested buyer of Chinese goods who has no business connections in mainland China often finds it easier to conduct its buying operations through a firm in Hong Kong with an existing network of connections in mainland China. In this regard, Hong Kong has a comparative advantage in intermediating trade between China and the rest of the world.
3. Through this relationship, a firm in Hong Kong will import goods from a country of origin (say China) and then *re-export* the same goods, with a marked-up price, to a buyer somewhere else in the world (say the US). A statistical discrepancy arises in this trading relationship when the country of origin (China) reports the exported goods as ultimately destined to Hong Kong, but the country of final destination (the US) reports the goods as originating in China.
4. Since the re-exported goods, by definition, must not undergo a significant change in shape, form, or nature, the destination country records the imported good as originating in a country prior to the re-export (in this case mainland China). This is in accordance with the guidelines for compiling international trade statistics. However, due to the complex nature of entrepôt trade, the country of origin (mainland China) often does not know (or even care) where the good’s ultimate destination will be and likely reports the good as destined for Hong Kong.

5. The example in Figure 1 shows a hypothetical export of \$100 of goods from China to the United States via Hong Kong. The red arrows denote where the exporting country reports its exports as going to and the blue arrows denote where the importing countries reports its imports as coming from. We assume that all traders have reported the actual amount of their imports and exports to their respective customs at each step in the process in order to highlight how re-exports create *artificial* trade misinvoicing. In accordance with Fenestra (2001), we assume that Hong Kong marks-up the price by approximately 15 percent before re-exporting the goods to the United States.

Figure 1. Re-Exports Through Hong Kong: An Example



6. In the above example, China does not report any exports going to the US, but the US reports \$115 (equal to the amount re-exported from Hong Kong) of imports coming from China. Thus, a failure to correct for the re-exported goods through Hong Kong will imply that China under-invoiced its exports by \$115 when the trader did not do so.
7. Over the period of 2001 to 2012, approximately \$3.61 trillion worth of merchandise goods was re-exported through Hong Kong, 62 percent of which originated in China. A few researchers attempted to correct for the re-exports of Chinese goods through Hong Kong in estimating trade misinvoicing but none of the existing methods can replicate the methodology for other countries that use Hong Kong as an entrepôt. To this extent, this is the first paper that uses actual data from the Hong Kong Census and Statistics Department to correct for any artificial trade misinvoicing resulting from the use of Hong Kong as an entrepôt by all developing

countries. India, the Philippines, and Thailand alone re-exported a total of \$286 billion worth of goods through Hong Kong over the same period.

8. It is important to note, however, that our estimates only correct for re-exports through Hong Kong and not for re-exports through other entrepôts such as Singapore and Dubai. Hong Kong is currently the only entrepôt that publically disseminates a dataset detailed enough to correct for the bilateral trade discrepancies that re-exports create. Additionally, although re-exports are a growing global phenomenon in international trade, Hong Kong is by far the world's largest re-exporter. While Singapore re-exports an average of 43 percent of its total trade, Hong Kong's re-exports account for close to 97 percent of its total exports. Furthermore, only a fraction of the 43 percent of Singapore's exports that are re-exports involve developing countries. For this reason, the estimates of trade misinvoicing presented in this study are not likely to be significantly affected by re-exports through other trade entrepôts. However, we plan to incorporate re-export data from other entrepôts as they become available.

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