



GLOBAL FINANCIAL INTEGRITY

# Flight Capital and Illicit Financial Flows to and from Myanmar: 1960-2013



Dev Kar and Joseph Spanjers

September 2015





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Government of Finland for supporting this project.*



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1. Dev Kar is Global Financial Integrity's Chief Economist, having served previously as a Senior Economist at the International Monetary Fund for more than 30 years. Joseph Spanjers is GFI's Junior Economist. They would like to thank Raymond Baker, Christine Clough, Channing May, and other GFI staff for helpful comments.





Global Financial Integrity is pleased to present its report **Flight Capital and Illicit Financial Flows to and from Myanmar: 1960-2013**.

Myanmar is the most porous economy we have studied in depth. Long isolation, trade restrictions, and attempts to regulate currency exchange rates have combined to drive a substantial part of the economy underground.

**Table 1. Summary: Myanmar's Flight Capital and Illicit Flows, 1960-2013**  
*(in billions of constant (2010) U.S. dollars)*

	Flight Capital	Illicit Flows
Inflows	82.8	77.7
Outflows	35.9	18.7

Totaling the flight capital numbers indicates that Myanmar has experienced largely unregulated financial movements of nearly US\$120 billion over the period (a small portion of flight capital may be licit), while total illicit flows amounted to almost US\$100 billion. In 2013 alone, unregulated financial inflows totaled some US\$10 billion, over 20 percent of GDP. Purely illicit inflows were on a similar scale in that year, at 17 percent of GDP. And these numbers do not include the smuggling of drugs, timber, precious stones, and other goods, transported across various routes and mountain passes to and from India and China, as indicated by a brief selection of satellite images included in the pages following.

Interestingly, the greater part of what we can analyze as illicit flows have been inward, in reaction to import controls and to escape import levies. Undervalued and smuggled imports have sustained the weakened economy through years of insularity, isolation, and instability.

Tax collection to GDP at seven percent is one of the lowest in the world, undermining the ability of the state to provide adequate health and education services. Corruption, according to Transparency International's Perceptions Index, places Myanmar among the bottom 20 in the world.

These are extremely serious challenges for a nation just beginning, haltingly, to emerge from its shadows. Within our focus on financial transparency concerns, we recommend that Myanmar 1) make concerted efforts to adopt and enforce Financial Action Task Force anti-money laundering and combatting terrorist financing regulations, 2) provide its Customs Department with real-time world market trade pricing data, 3) greatly improve its statistical capabilities, and 4) enhance border

security and curtailment of smuggling. For this the nation will need sustained external financial and technical assistance for years to come.

GFI thanks Dev Kar, Chief Economist, assisted by Joe Spanjers for excellent work on this difficult but very timely study. Dev was born in Burma, the son of an advisor to an Indian nationalist in exile, before resettling in his mother country.

GFI also thanks the Government of Finland for generously funding this and other economic analyses we undertake.

**Raymond W. Baker**

President

September 2015

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# Executive Summary

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There have been few studies on capital flight and illicit financial flows to and from Myanmar, due to waning public interest in the wake of insular domestic policies and Western economic sanctions. This study finds that confinement, seclusion, and economic instability along with entrenched governance deficits have characterized the country since independence. We show that insularity and isolation have led to a declining trend in trade openness. Furthermore, we reveal that over the period 1999-2013, Myanmar experienced much larger macroeconomic instability (as measured by the variance in the rate of inflation, the current account to GDP ratio, and rates of economic growth) relative to other developing countries, including those in Asia, five ASEAN countries (Indonesia, Malaysia, the Philippines, Singapore, and Thailand), and other groupings.

Given the strong combination of macroeconomic, structural, and governance-related factors, we estimate both flight capital and illicit trade flows to and from the country. Flight capital includes a small portion of licit capital (that is not recorded due to statistical shortcomings), while illicit trade flows only include capital that is illegal in nature. Over the period 1960-2013, inflows and outflows of flight capital averaged 15.1 percent and 13.1 percent of GDP per annum in constant dollars, respectively. Illicit trade inflows and outflows amounted to an average of 14.4 percent and 6.5 percent of GDP per annum, respectively. This scale of inflows and outflows is much larger in the case of Myanmar than most other developing countries.

Flows of illicit trade capital in both directions are smaller than flight capital counterparts. Illicit trade inflows totaled US\$77.7 billion over 1960-2013, while total inward capital flows amounted to US\$82.8 billion. Similarly, illicit trade outflows totaled US\$18.7 billion while outward flight capital totaled US\$35.9 billion over this period. Average illicit trade inflows were more than four times average illicit trade outflows. Import under-invoicing, which dominated other types of trade misinvoicing, drove most inflows.

A particular feature of capital flight and illicit trade flows to and from Myanmar is that inflows are much larger than outflows. We show that this is in fact the case with other countries (such as Afghanistan, Mexico, Russia, and Thailand) where drug trafficking is a significant issue. Myanmar's place as the world's second largest producer of opium poppy places it easily within this group of countries.

We present an analysis of how economic sanctions, by creating an excess demand for certain items in domestic markets, can encourage technical smuggling as importers seek to meet the excess demand. The few importers with the license to import the goods in question reap illegal profits through import under-invoicing. The estimates of illicit trade flows provided in the paper confirm that technical smuggling through import under-invoicing is by far the largest component of inward capital flows or illicit trade inflows. We also find preliminary evidence of outward smuggling

of timber and other wood products into India and China and the over-invoicing of precious stones to the latter. We cite other researchers who find perverse incentives arising from Myanmar's trade policies to explain deliberate trade misinvoicing.

Myanmar could have lost at least US\$2.9 billion and as much as US\$3.6 billion over the period in potential tax revenues through i) uncollected import tariff revenue due to import under-invoicing and ii) lower corporate profit tax captures due to export under-invoicing. To put it in perspective, this tax loss due to illicit flows ranged from 122-172 percent of total health expenditures and 48-73 percent of total education expenditures incurred during 1960-2013. The figures are just as startling for 2010-2013: 129 percent of health expenditures and 42 percent of education expenditures.

The paper also tests the link between illicit flows and the underground economy using estimates derived from the currency demand approach. The underground economy is a good proxy for the state of overall governance of a country. We find a strong and significant link between illicit flows and the underground economy, confirming that weak governance both drives and is driven by illicit flows. Using a currency demand approach modified to reflect the predominant role of smuggling and black markets in Myanmar's economy, we find that the underground economy averaged around 55 percent of official GDP—one of the highest in the world. The World Bank has also found the underground economy of Myanmar to be around 50 percent of official GDP.

The paper concludes with a series of policy recommendations for the Government of Myanmar. GFI urges the Government to develop a priority list of areas for technical assistance to improve the quality of its statistics. Data is a critical element of analysis and understanding the country's dynamics—for the government and for those outside the government. Anti-money laundering legislation and enforcement should be brought up to Financial Action Task Force (FATF) and IMF-defined standards. Trade misinvoicing should be curtailed with the implementation of a real-time world market pricing risk analysis system for the Customs Department.

# I. Introduction

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There have been few empirical studies on flight capital and illicit trade flows to and from Myanmar. This may be due in part to significant challenges with obtaining reliable data and statistics on the country. The statistical database is weak, with gaps in data availability, and the methodology used to compile the statistics has not been reviewed for quite some time. Hence, there is a risk that compilers may not have adhered to international guidelines for the compilation of economic statistics. These serious data issues present a formidable challenge to carrying out empirical studies. The relatively insular nature of government policies and the resulting closed economy has created obstacles for comprehensive study.

In the years leading up to independence in January 1948, Myanmar (then Burma)<sup>2</sup> was beset with political and social instability. A fledgling democracy survived until a military coup deposed the civilian government in 1962. The military government isolated the country and ran a closed economy model replete with extensive intervention in the economy, including controlled foreign exchange rates and extensive price controls. The result was a heavily regulated economy with a proliferation of black markets for almost all consumer durables and essential food items. In response to military government actions, Western governments began to apply sanctions during the junta's rule; the United States began implementing its sanction regime, subsequently tightened, in May 1997.<sup>3</sup>

Following the by-elections in April 2012 and its entry into the Parliament of the National League for Democracy, the United States, the European Union, and other Western countries agreed to suspend most economic sanctions against Myanmar. The government has since embarked on a series of economic reforms intended to open up the country after decades of economic isolation. The national currency (kyat), which has officially pegged at an artificially low rate of 8.5057 kyats per Special Drawing Rights (SDR) since May 2, 1977, was replaced with a market-based exchange rate of roughly 981.281 kyats per SDR<sup>4</sup> that is much closer to the widely used informal (or black) market rates.<sup>5</sup>

Recent efforts to implement economic and political reforms have led to a renewed interest in Myanmar, although data issues and distortions continue to pose a significant challenge to quantitative economic examinations of the country. This study seeks to fill this gap in existing literature on empirical studies of Myanmar's economy. The paper is organized as follows. Section II presents a brief discussion of the defining characteristics of Myanmar including the state of overall governance. Case studies by GFI show that macroeconomic instability and weaknesses in

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2. The country was known as Burma before 1989.

3. U.S. Department of the Treasury, Office of Foreign Assets Control, *Burma Sanctions Program* (Washington, DC: Office of Foreign Assets Control, 2014), 3, <http://www.treasury.gov/resource-center/sanctions/Documents/burma.pdf>.

4. Period Average Exchange Rate, 2012. See: International Monetary Fund, "International Financial Statistics (IFS)," [Online Database], accessed May 6, 2015, <http://elibrary-data.imf.org/FindDataReports.aspx?d=33061&e=169393>.

5. International Monetary Fund, "Myanmar: Staff Report for the 2014 Article IV Consultation," in *Myanmar: 2014 Article IV Consultation-- Staff Report; Press Release; and Statement by the Executive Director for Myanmar*, IMF Country Report No. 14/307 (Washington, DC: International Monetary Fund, 2014), 3, Informational Annex, <http://www.imf.org/external/pubs/ft/scr/2014/cr14307.pdf>.

governance comprise some of the key drivers of flight capital and illicit trade flows to and from a country.<sup>6</sup> The section concludes with a discussion of the salient developments in these types of capital flows over the period 1960-2012 with some preliminary estimates of misinvoicing involving specific commodities. We also include an analysis of the link between incomplete economic sanctions and import under-invoicing. Section III presents a synopsis on the methodology underlying the estimation of the underground economy in Myanmar, comparing these estimates with those found by the World Bank. We develop a 2-equation simultaneous equations model (SEM), which is confirmed by two vector error correction models (VECMs), to examine the interactions between illicit flows and the underground economy. Section IV presents a brief overview of the policies implemented by other developing countries to curtail illicit flows. We also recommend additional measures that both Myanmar and advanced countries can adopt in order to curtail the generation and cross-border transmission of illicit flows. Section V presents the main conclusions of the study.

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6. See, for example, Dev Kar and Brian LeBlanc, *Illicit Financial Flows to and from the Philippines: A Study in Dynamic Simulation, 1960-2011* (Washington, DC: Global Financial Integrity, 2014).

## II. Governance and Trade

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Economists have long argued that macroeconomic instability and weakness in overall governance comprise some of the most important drivers of flight capital from a country. The impact of macroeconomic instability on illicit flows is not clear, and GFI's case studies show that the effect is often insignificant.<sup>7</sup> This is understandable given that holders of illicit assets are more likely to be driven by the need to shelter their illicit capital rather than worry about risks and returns. It is the licit portion of flight capital that responds to macroeconomic instability. For example, as a result of high and highly variable inflation, foreign assets become more attractive relative to domestic assets, the real value of which declines over time.

### i. Insularity, Isolation, and Instability

Any study of capital flight and illicit flows to and from Myanmar must consider the economic, social, and structural characteristics of the country. Myanmar is characterized by insularity, isolation, and instability against a backdrop of endemic governance deficits.

The military junta took over the government in March 1962 and installed a repressive and secluded regime that left the country with significant economic distortions and structural deficiencies. The press was subject to strict censorship, internet usage has been closely monitored and controlled, and mobile phone access has been subject to such high tariffs that few can afford it.<sup>8</sup> The “Burmese way to socialism” called for a “no English” education policy, which made communication with the outside world difficult and effectively curtailed much-needed investments. The military junta broke up the country's universities and dispersed their faculties to “prevent student concentration and activism.”<sup>9</sup> In a recent speech, IMF Managing Director Christine Lagarde observed that:

“Myanmar is today awakening from fifty years of isolation, and decades of drift and insularity when learning was limited, universities were neutered, and travel was restricted. Until recently, the economy was poorly integrated into the wider world. The central bank was part of the ministry of finance. The budget process was antiquated and a lot of data were maintained by hand.”<sup>10</sup>

Confining policies not only had their social and political dimensions but were buttressed by economic policies that reinforced the other two. Widespread nationalization of private enterprise, strict restrictions on foreign direct investments (except for a brief period in the 1990s), an exchange rate policy resulting in an official rate that was completely out of line with market forces, deliberate

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7. Dev Kar and Sarah Freitas, *Russia: Illicit Financial Flows and the Role of the Underground Economy* (Washington, DC: Global Financial Integrity, 2013), 59; Kar and LeBlanc, *IFFs to and from the Philippines*, 22.

8. Sean Turnell, “Myanmar's Fifty-Year Authoritarian Trap,” *Journal of International Affairs* 65, no. 1 (2011): 80.

9. *Ibid.*

10. Christine Lagarde, “Empowerment - the Amartya Sen Lecture” (Speech, London, June 6, 2014), <http://www.imf.org/external/np/speeches/2014/060614.htm>.

erosion of basic government regulatory agencies (such as the Central Bank), degradation of the rule of law and property rights etc., ensured an isolated country in a globalized world.

As a result of violent repression of democratic dissidents, widespread human rights abuses, and lack of political freedom, Western countries led by the United States imposed economic sanctions on Myanmar starting May 1997. The sanctions imposed by the United States prohibited U.S. persons and companies from investing in Myanmar and U.S. banks from dealing with Burmese financial institutions.<sup>11</sup> In addition, comprehensive bans on imports from and exports to the country were also put in place. The European Union followed suit with similar sanctions on trade and investment involving Myanmar. Increasing political repression led to mass uprisings such as the Saffron Revolution in 2007 when Buddhist monks took to the streets and the junta responded with violence, leading to hundreds of deaths among civilians and monks. In response, sanctions were further tightened and extended.

The insularity and isolation the sanctions created are reflected in the degree of openness of Myanmar's trade and financial accounts. The trade and financial openness of an economy can be estimated on a *de facto* or *de jure* basis. A popular *de facto* measure of trade openness would be the ratio of exports and imports of goods and services to GDP, while a *de facto* estimate of financial openness would be captured by the ratio of capital inflows and outflows recorded in the balance of payments to GDP.

Trade and financial openness tend to go hand in hand because capital flows finance the current account; the balance of payments must always balance. If a country has a large traded sector, then trade-related flows are also large and any deficit in the current account is typically financed through autonomous capital inflows. Here we present *de facto* evidence based on trade openness while noting that foreign direct investment and portfolio investment, the two main determinants of financial openness, have been negligible in the case of Myanmar.

*De jure* measures of trade and financial openness also provide further evidence that Myanmar's economy has been largely shut to the outside world. For instance, the plethora of trade restrictions and high tariffs indicate a traded sector that has been largely closed, while multiple exchange rate practices (MERPs) and exchange restrictions recorded by the IMF's *Annual Report on Exchange Restrictions and Exchange Arrangements* (AREREA) show an economy that is financially isolated as well.<sup>12</sup>

Chart 1 captures the country's openness to trade based on official exchange rates and a blend of the official and black market rates. Because of MERPs, official statistics on trade, balance of payments, and national accounts in U.S. dollars are distorted so that indicators such as trade openness are more difficult to estimate than they otherwise should be.

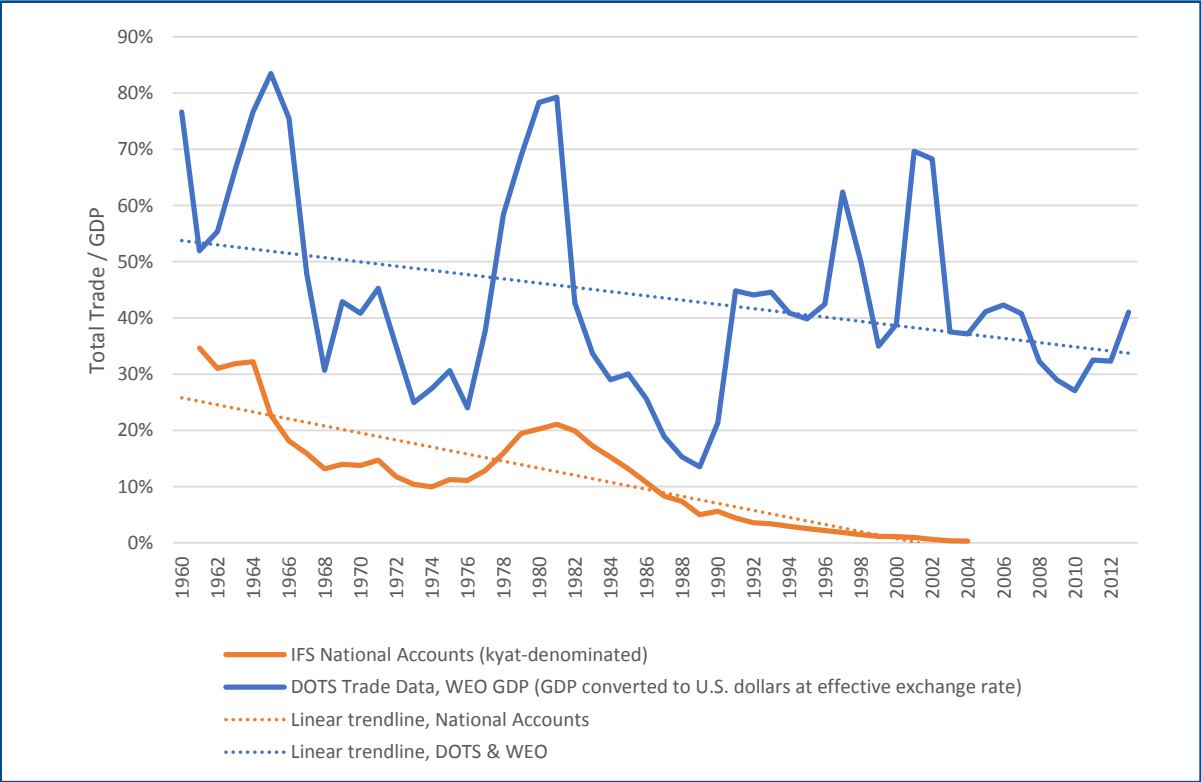
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11. U.S. Department of the Treasury, Office of Foreign Assets Control, *Burma Sanctions Program*, 3–4.

12. International Monetary Fund, *Annual Report on Exchange Arrangements and Exchange Restrictions 2014* (Washington, DC: International Monetary Fund, 2014), 8, 35, 80, <http://www.imf.org/external/pubs/nft/2014/areaers/ar2014.pdf>.

Exports and imports reported by Myanmar to the IMF’s Direction of Trade Statistics (DOTS) were used to estimate trade misinvoicing for the period 1960-1981.<sup>13</sup> For the latter period, 1982-2013 estimates of trade misinvoicing are based on the world’s exports to and imports from Myanmar against what Myanmar reported as having imported from and exported to the world as published in the IMF’s International Financial Statistics (IFS).<sup>14</sup> Hence, the misinvoicing series for the whole period 1960-2013 is a blend of these two methodologies (see Appendix A for methodological details). The GDP (in billions of kyats) is obtained from the IMF’s World Economic Outlook.<sup>15</sup> The blue line represents trade openness based on a ratio of trade to GDP using these sources and methods.

**Chart 1. Myanmar: Trade Openness, 1960-2013**



The resulting trade openness indicator (blue line) shows much more fluctuations than openness estimated using national accounts data (orange line).<sup>16</sup> But there is no doubt that trade openness has been declining as shown by both the blue and orange lines in Chart 1. Whereas the orange line is seriously out of date (due to the long lag in the availability of national accounts), the blue line suggests that the decline in trade openness has been reversed since 2010.

13. International Monetary Fund, “Direction of Trade Statistics (DOTS),” [Online Database], accessed May 6, 2015, <http://elibrary-data.imf.org/FindDataReports.aspx?d=33061&e=170921>.  
 14. International Monetary Fund, “International Financial Statistics (IFS),” [Online Database], accessed May 6, 2015, <http://elibrary-data.imf.org/FindDataReports.aspx?d=33061&e=169393>.  
 15. International Monetary Fund, “World Economic Outlook Database: April 2015 Edition,” [Online Database], (April 14, 2015), <https://www.imf.org/external/pubs/ft/weo/2015/01/weodata/index.aspx>; International Monetary Fund, “World Economic Outlook Database: May 2001 Edition,” [Online Database], (April 26, 2001), <http://www.imf.org/external/pubs/ft/weo/2001/01/>.  
 16. International Monetary Fund, “International Financial Statistics.”

Apart from insularity and isolation, the third defining feature of Myanmar's economy is a long history of macroeconomic instability. We seek to capture macroeconomic instability through the variance of three key macroeconomic indicators—the rate of inflation, the rate of economic growth, and the current account deficit as percent of GDP (Table 2).

**Table 2. Myanmar: Macroeconomic Instability vis-à-vis Other Developing Countries, 1999-2013**

Country Group or Country	Variance		
	Inflation, average consumer prices (percent change)	Gross domestic product, constant prices (percent change)	Current account balance, percent of GDP
Myanmar	268.7	13.4	18.0
ASEAN-5*	5.1	1.8	2.8
Emerging and developing Asia	2.3	2.4	3.2
All developing countries	3.9	3.0	1.9

Source: International Monetary Fund, "WEO Database: April 2015."

\*ASEAN-5 is comprised of Indonesia, Malaysia, the Philippines, Singapore, and Thailand

The variance of the rate of inflation (based on percent change in average consumer prices) in Myanmar for the period 1999-2013 (the longest time period available through the World Economic Outlook) is 268.7, a rate that exceeds the variance of the rate of inflation in the ASEAN-5 countries, emerging and developing Asia, or all developing countries by a large factor of magnitude.<sup>17</sup> The variance in the growth rate of GDP and the current account balance is also several times that of the other three groups of developing countries.

## ii. Governance Deficits

Endemic governance deficits serve as a backdrop to Myanmar's economic slide over the past five decades. These deficits are not only apparent with respect to the G-7 countries but also with regard to developing countries as a whole and to neighboring countries in Southeast Asia<sup>18</sup> (Chart 2). What are the main factors that drive governance deficits? For one, the economy has been subjected to pervasive price controls which resulted in thriving black markets for goods and services. Until 2012 when the exchange rate of the kyat was unified, Myanmar also had a thriving black market in foreign exchange where the kyat was traded at several hundred times the official rate. This divergence peaked in 2006, when the official rate (fixed to the SDR) was at kyat 5.84 to one U.S. dollar,<sup>19</sup> while the black market rate was around kyat 1,200 per dollar.<sup>20</sup>

The military regime tried to stifle speculators in the black market by arbitrarily devaluing various denominations of the kyat.<sup>21</sup> Such arbitrary and erratic policies did little to curb black market activities, and they impoverished large sections of the population including the middle class, leaving

17. International Monetary Fund, "WEO Database: April 2015."

18. Here, Southeast Asia is represented by: Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Timor-Leste, and Vietnam.

19. International Monetary Fund, "International Financial Statistics."

20. Derived from: International Monetary Fund, "WEO Database: April 2015."

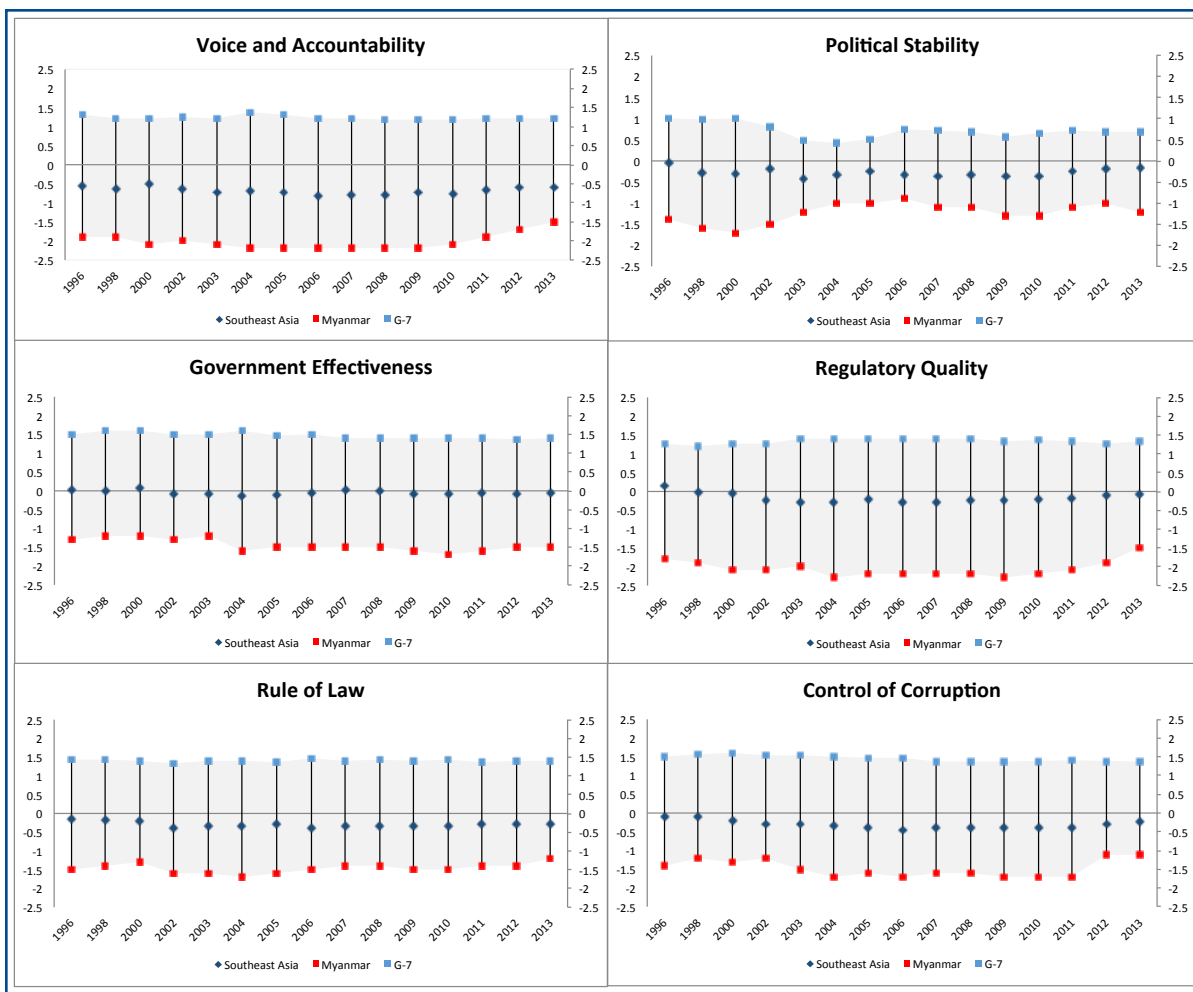
21. Turnell, "Myanmar's Fifty-Year," 83.



them little option but to live off the informal economy. In other words, the very policies aimed at curtailing black market activities actually ended up revitalizing them.

In 2010, Transparency International placed Myanmar as the second most corrupt country in the world after Somalia.<sup>22</sup> Of late, following the regime’s implementation of economic reforms, there has been a definite improvement in voice and accountability, regulatory quality, rule of law, and control of corruption over the last two years 2012 and 2013. Chart 2 shows a small bridging of related governance deficits with other country groups over this period.

**Chart 2. Myanmar, G-7, and Southeast Asia Governance Indicators, 1996-2013**



22. Transparency International, “Corruption Perceptions Index 2010” (Berlin: Transparency International, 2010), 2, <http://www.transparency.org/cpi2010/results>.



### III. Nature and Extent of Capital Flight and Illicit Financial Flows

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The four characteristics discussed above—insularity, isolation, instability, and governance deficits—can impact capital flight and illicit flows quite differently. For instance, insularity and isolation, to the extent that such policies restrict trade and financial openness, could actually repress rather than curtail capital flight. Repression of capital flight occurs when, as a result of insularity and isolation, source of funds such as the contracting of new loans and foreign direct investment shrinks relative to the use of funds such as the current account deficit. Case studies by GFI show that trade misinvoicing could also decline along with openness due to lesser opportunities to misinvoice trade. Such a country can actually experience unrecorded inward capital flows as its use of funds (e.g., financing current account deficits) typically exceeds its source of funds and opportunities to misinvoice trade shrinks. It would be fallacious to call such inward transfers as a “return of capital flight.” Rather, the term “illicit inflows” fits the bill perfectly.

We study both flight capital and illicit trade flows to and from Myanmar for a number of reasons. First, our case studies show that while significant macroeconomic instability triggers capital flight (which includes a licit component),<sup>23</sup> the link between instability and illicit flows is somewhat unclear.<sup>24</sup> Rather, illicit flows tend to be mainly driven by weak governance. Second, given that Myanmar has experienced significant macroeconomic instability as well as serious governance issues, it stands to reason that we examine both flight capital and illicit trade flows in order to observe how the two have behaved over time and estimate the difference.

#### i. Pattern of Capital Flight

There is a striking difference between unrecorded inward capital flows that occur as a result of insularity and isolation and those that occur in the wake of genuine economic reform that economic agents deem to be sustainable. Hence, there is a need to discern the quality as well as the dynamics of unrecorded inward capital flows and not paint negative estimates with the same brush. Table 3 presents estimates of capital flight to and from Myanmar over the period 1960-2013 in constant (2010) dollar terms based on which we can make the following observations:

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23. Ibid.

24. The strength of the link depends on whether illicit inflows and outflows are large and persistent and whether the instability is significant.

**Table 3. Myanmar: Summary of Unrecorded Broad Capital Inflows and Outflows**  
(millions of real 2010 U.S. dollars)

Year	Inflows		Outflows		Total Unrecorded Broad Capital Inflows	Total Unrecorded Broad Capital Outflows	Unrecorded Capital Inflows / GDP	Unrecorded Capital Outflows / GDP
	Trade Misinvoicing	World Bank Residual	Trade Misinvoicing	World Bank Residual				
1960-1964	1,468	.	1,245	.	1,468	1,245	7.67%	6.91%
1965-1969	1,401	.	1,063	.	1,401	1,063	11.02%	8.76%
1970-1974	1,392	320	941	626	1,712	1,568	11.12%	9.89%
1975-1979	1,805	468	1,243	1,358	2,273	2,601	16.28%	17.65%
1980-1984	2,757	747	1,602	1,695	3,504	3,297	27.21%	27.78%
1985-1989	2,773	433	1,626	3,553	3,206	5,179	18.73%	30.33%
1990-1994	3,887	209	750	3,163	4,095	3,913	17.61%	17.19%
1995-1999	4,611	2,418	1,368	2,880	7,028	4,247	18.46%	9.83%
2000-2004	5,197	250	1,278	4,250	5,447	5,528	8.02%	8.19%
2005	2,219	0	0	742	2,219	742	13.67%	4.57%
2006	1,796	0	0	629	1,796	629	9.57%	3.35%
2007	4,240	0	0	359	4,240	359	17.01%	1.44%
2008	3,434	0	0	1,905	3,434	1,905	10.20%	5.66%
2009	3,904	0	0	1,108	3,904	1,108	9.60%	2.72%
2010	7,377	0	0	2,480	7,377	2,480	14.86%	5.00%
2011	5,236	120	0	0	5,356	0	10.38%	0.00%
2012	7,665	6,344	0	0	14,009	0	27.49%	0.00%
2013	8,149	2,175	0	0	10,323	0	20.03%	0.00%
<b>Cumulative</b>	<b>69,311</b>	<b>13,483</b>	<b>11,115</b>	<b>24,750</b>	<b>82,794</b>	<b>35,865</b>	.	.
<b>Average</b>	<b>1,284</b>	<b>321</b>	<b>206</b>	<b>589</b>	<b>1,533</b>	<b>664</b>	<b>15.06%</b>	<b>13.06%</b>

Source: IMF Direction of Trade (DOTS) database on bilateral trade, IMF International Financial Statistics on world trade, and IMF Balance of Payments Statistics and World Bank International Debt Statistics to estimate capital flight. <sup>25</sup>

Note: Here, and elsewhere in this paper, a "." indicates missing data and a "0" indicates that no flows of that type were detected. World Bank Residual calculations begin in 1972 due to data constraints.

- Average unrecorded inward capital flows from all sources into Myanmar amounted to about 15.1 percent of GDP per annum while outward capital flight averaged around 13.1 percent of GDP. It is worth repeating that such unrecorded inward capital flows are not the return of capital due to increasing confidence of investors in economic reform and liberalization. On the contrary, such inward flows are mainly due to import under-invoicing, which is almost four times larger on a cumulative basis than export over-invoicing (see Appendix Table 1). Import under-invoicing leads to a loss of import duties and lower government revenues.
- Unrecorded inward capital flows through the balance of payments (captured by the World Bank Residual method) totaled US\$13.5 billion or about US\$321 million per annum on average. This volume of inflows pales in comparison to inward transfers through deliberate trade misinvoicing to the tune of US\$69.3 billion or US\$1.3 billion per annum on average.

25. International Monetary Fund, "Direction of Trade Statistics"; International Monetary Fund, "Revision of the Balance of Payments Manual, 5th Ed." (Washington, DC: International Monetary Fund, 2007); International Monetary Fund, "Balance of Payments and International Investment Position Manual, 6th Ed" (Washington, DC: International Monetary Fund, 2009), <https://www.imf.org/external/pubs/ft/bop/2007/pdf/bpm6.pdf>; International Monetary Fund, "International Financial Statistics."

Total unrecorded inward capital flows over the period 1960-2013 amounted to US\$82.8 billion or about US\$1.5 billion per annum compared to outflows of US\$35.9 billion or US\$664 million per annum.

- Unrecorded inward capital flows have been increasing throughout the period mainly as a result of import under-invoicing. In contrast, outward capital flight through trade misinvoicing has dropped to zero since 2005 (Table 3). Unrecorded inward capital flows as a share of GDP have been generally increasing throughout the 1960s and 1970s, peaking in the 1980s. They remained around the same in the 1990s and mostly fell through 2009. They tended to increase to over 27 percent of GDP in 2012 and 20 percent of GDP in 2013.
- Outward capital flight also increased throughout the 1960s, '70s, and '80s. It started falling in the 1990s from its peak in the 1980s, tapering off to zero in the most recent years (2011-2013). Again, the decrease in outward capital flight is not due to robust economic policies. The decrease is due to a sharp reduction in the source of funds (net external indebtedness of the public sector and the net flow of foreign direct investment) relative to the use of funds (financing a current account deficit and additions to reserves), as well as lower trading volumes (i.e., decreasing trade openness, see Chart 1) until the tail end of our study.

## ii. Pattern of Illicit Financial Flows

As expected by the balance of payments theory, illicit financial flows tend to be smaller than broad capital flight.<sup>26</sup> The only difference in the calculation of capital flight and illicit flows lies in the way balance of payments leakages are estimated given that flows due to deliberate trade misinvoicing are common to both. Table 4 presents estimates of illicit inflows and outflows to and from Myanmar over the period 1960-2013.

For broad capital flight, balance of payments leakages (inward or outward) are captured by the World Bank Residual method whereas such leakages of illicit capital are captured by the Hot Money Narrow (HMN) method.<sup>27</sup> The HMN is based on net errors and omissions of the balance of payments, which economists have used to proxy leakages of illicit capital from a country's external account.

The following observations can be made with regard to illicit financial flows to and from Myanmar over the period 1960-2013:

- Trade misinvoicing is by far the predominant channel of transferring illicit funds to and from Myanmar. It represents 89.2 percent of total illicit inflows and 59.6 percent of total illicit outflows.

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26. For an explanation of why capital flight tends to be larger than illicit flows, see Stijn Claessens and David Naudé, "Recent Estimates of Capital Flight," Policy Research Working Paper Series No. 1186 (Washington, DC: Debt and International Finance Division, International Economics Department, World Bank, 1993).

27. See Appendix A for a full description of the methodology underlying the estimation of capital flight and illicit flows.

- Illicit inflows into Myanmar totaled US\$77.7 billion (US\$1.4 billion per annum on average) while illicit outflows totaled US\$18.7 billion (or US\$346 million per annum). Inflows represent about 14.4 percent of GDP per annum on average while illicit outflows represent just 6.5 percent of GDP per annum. Outflows and inflows of this magnitude are very high compared to those to and from most other developing countries.

**Table 4. Myanmar: Summary of Illicit Financial Flows**  
(millions of real 2010 U.S. dollars)

Year	Inflows		Outflows		Total Illicit Inflows	Total Illicit Outflows	IFF Inflows / GDP	IFF Outflows / GDP
	Trade Misinvoicing	Hot Money Narrow	Trade Misinvoicing	Hot Money Narrow				
1960-1964	1,468	130	1,245	94	1,598	1,339	8.33%	7.44%
1965-1969	1,401	595	1,063	34	1,996	1,097	15.53%	9.13%
1970-1974	1,392	559	941	216	1,952	1,158	13.54%	7.29%
1975-1979	1,805	157	1,243	131	1,962	1,374	13.49%	9.43%
1980-1984	2,757	248	1,602	62	3,005	1,664	22.81%	14.06%
1985-1989	2,773	517	1,626	0	3,290	1,626	19.79%	9.17%
1990-1994	3,887	62	750	117	3,949	866	16.95%	3.86%
1995-1999	4,611	28	1,368	97	4,639	1,464	12.09%	3.42%
2000-2004	5,197	0	1,278	361	5,197	1,640	7.53%	2.46%
2005	2,219	0	0	709	2,219	709	13.67%	4.37%
2006	1,796	0	0	702	1,796	702	9.57%	3.74%
2007	4,240	0	0	359	4,240	359	17.01%	1.44%
2008	3,434	0	0	1,327	3,434	1,327	10.20%	3.94%
2009	3,904	0	0	1,079	3,904	1,079	9.60%	2.65%
2010	7,377	0	0	2,132	7,377	2,132	14.86%	4.30%
2011	5,236	0	0	126	5,236	126	10.15%	0.24%
2012	7,665	5,360	0	0	13,024	0	25.56%	0.00%
2013	8,149	733	0	0	8,882	0	17.23%	0.00%
<b>Cumulative</b>	<b>69,311</b>	<b>8,389</b>	<b>11,115</b>	<b>7,547</b>	<b>77,700</b>	<b>18,662</b>	.	.
<b>Average</b>	<b>1,284</b>	<b>155</b>	<b>206</b>	<b>140</b>	<b>1,439</b>	<b>346</b>	<b>14.41%</b>	<b>6.52%</b>

Source: Data on bilateral trade is based on IMF Direction of Trade Statistics and International Financial Statistics. Data on net errors and omission is based on IMF Balance of Payments Statistics, and GDP is sourced from IMF World Economic Outlook.<sup>28</sup>

28. International Monetary Fund, "Direction of Trade Statistics"; International Monetary Fund, "International Financial Statistics"; International Monetary Fund, "BPM6"; International Monetary Fund, "BPM5"; International Monetary Fund, "WEO Database: April 2015"; International Monetary Fund, "WEO Database: May 2001."

- Illicit inflows through trade misinvoicing (mainly import under-invoicing) have increased significantly over the years while illicit outflows through misinvoicing show zero figures since 2005.
- Myanmar has not reported DOTS data by partner countries since 1981. The tapering off of illicit outflows is due to poor reporting of trade data on a bilateral basis and not due to any reform of customs administration or improvement in governance. The aggregate trade data reported by Myanmar for publication in IFS has also been used in previous GFI<sup>29</sup> studies where the country in question did not report DOTS data to the IMF.

Myanmar’s attempt to manage scarce foreign reserves through its “export-first” policy, implemented in 1997, seems to have incentivized the misreporting of trade.<sup>30</sup> Under this policy, import licenses were granted only to those exporters bringing in sufficient foreign exchange to cover the cost of the imports. Other importers were limited to import licenses of US\$50,000 month, a cap that dropped to US\$10,000 in August 2000, rendering it nearly impossible to import goods without first exporting.<sup>31</sup> Our findings seem to corroborate Kubo’s assertion that the export-first policy may have incentivized export misinvoicing, although we did not carry out specific tests on this hypothesis. From 1982-1996, the 15 years prior to the export-first policy, our analysis did not detect any export over-invoicing. However, export over-invoicing was detected in 11 of the 15 years following the export-first policy, 1998-2012 (see Appendix Table 1).

### iii. Misinvoicing Involving Certain Commodities

As noted in Section II (iv), Myanmar has not reported trade data on a bilateral basis for publication in the IMF’s Direction of Trade Statistics since 1981. Myanmar has also not reported trade data by partner countries and commodities for the United Nations Comtrade database regularly. The most recent Comtrade data on Myanmar refers to 2010; the estimates of misinvoicing presented in Table 5 are based on this limited information.

The total discrepancies for these specific commodities are based on data reported by Burmese exporters for which partner country importers also reported data (at the two-digit Harmonized Code level). Any missing data on either side of bilateral trade involving those commodities were eliminated so as not to overstate the discrepancies due to missing data.

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29. See, for example: Dev Kar and Sarah Freitas, *Illicit Financial Flows from Developing Countries: 2001-2010* (Washington, DC: Global Financial Integrity, 2012), 31.

30. Kubo, “Trade Policies and Trade Misreporting in Myanmar,” 155.

31. *Ibid.*, 148.

**Table 5. Myanmar: Export Under- and Over-Invoicing in Specific Commodities, 2010**  
(in millions of U.S. dollars)

Partner Country	Export Under-Invoicing		Export Over-Invoicing	
	Commodity	Value	Commodity	Value
India	Wood products	\$40.9	Edible vegetables	\$55.1
China	Wood products	\$119.0	Precious stones & metals	\$155.4
Thailand	Fish, crustaceans, etc.	\$48.3	Mineral fuels	\$576.5
3 Major Partners	Wood and fish	\$208.3	Precious stones, fuels, and vegetables	\$787.0

Source: UN Comtrade<sup>32</sup>

The following observations can be made with reference to the estimates presented in Table 5:

- Exports of wood products including timber from Myanmar to India and China were under-invoiced in 2010 by US\$40.9 million and US\$119.0 million respectively. Exports of fish, crustaceans, etc. from Myanmar to Thailand were under-invoiced by US\$48.3 million. Total under-invoicing of exports of these two commodity groups amounted to US\$208.3 million in 2010.<sup>33</sup>
- Exports of vegetables to India, precious stones and metals to China, and mineral fuels to Thailand were over-invoiced by US\$55.1 million, US\$155.4 million, and US\$576.5 million, respectively. The over-invoicing of exports was more than double the under-invoicing of exports involving the top three commodity groups with these neighboring countries.
- The estimates of under-invoicing of timber and other wood products into India and China provide some preliminary evidence of technical smuggling of timber into India and China, but economic methods cannot provide any estimates of physical cross-border smuggling, which is likely to be the larger problem. A 2015 *New York Times* article on Myanmar's economy also noted evidence of the smuggling and illegal trade of teak, jade, and precious gems.<sup>34</sup>

Kubo notes that the so-called “export first and import second” policy requiring sufficient export earnings to cover the (larger) import bill may have created an incentive to over-invoice exports while certain export taxes on natural resources may encourage under-invoicing of exports.<sup>35</sup> Exporters would also have an incentive to under-invoice exports to take advantage of premium exchange rates on the black markets. In other words, strong incentives were created to over-invoice imports (particularly those involving certain “essential” commodities like medicines or staple foods attracting favorable official rates and foreign exchange allocation) and under-invoice certain exports and convert the foreign exchange at the much higher black market rate for foreign exchange.

32. United Nations, “United Nations Commodity Trade Statistics Database (Comtrade),” [Online Database], accessed May 6, 2015, <http://comtrade.un.org/db/>.

33. Note that the numbers may not appear to sum properly due to rounding.

34. Thomas Fuller, “Profits of Drug Trade Drive Economic Boom in Myanmar,” *The New York Times*, June 5, 2015, <http://www.nytimes.com/2015/06/06/world/asia/profits-from-illicit-drug-trade-at-root-of-myanmar-boom.html>.

35. Koji Kubo, “Trade Policies and Trade Misreporting in Myanmar,” *ASEAN Economic Bulletin* 29, no. 2 (August 2012): 146–59.



#### iv. Illicit Flows in Major Drug Trafficking Countries

Experts estimate that profits from the illicit drug trade are at the root of Myanmar's current economic boom.<sup>36</sup> Sean Turnell, a former senior analyst at the Reserve Bank of Australia and a leading expert on Myanmar, estimates that the country's drug lords make around US\$2 billion in drug revenues annually.<sup>37</sup>

We observe that there is a unique pattern of illicit flows in countries that have become significant conduits or hubs for drug trafficking. Table 6 presents estimates of illicit inflows and outflows and gross flows in relation to GDP for Myanmar and four other countries where drug trafficking activities and proceeds thereof represent a significant portion of the economy.<sup>38</sup>

**Table 6. Myanmar: Illicit Flows to GDP Compared to Selected Countries with Significant Drug Trafficking**  
(in millions of nominal U.S. dollars, 2003-2012 average, or in percent)

Country	Illicit Inflows	Illicit Outflows	Total Illicit Flows	GDP	Total Illicit Flows to GDP
Afghanistan, Islamic Republic of	2,779	222	3,002	11,004	27.3%
Mexico	48,244	55,433	103,677	976,259	10.6%
Myanmar	4,416	695	5,111	31,231	16.4%
Russian Federation	137,768	97,967	235,735	1,240,567	19.0%
Thailand	32,274	17,168	49,442	250,123	19.8%

Source for selected countries: UNODC World Drug Report 2014.

The first characteristic of illicit flows to and from countries with a drug trafficking problem is the fact that, except for Mexico, illicit inflows are much larger than illicit outflows. By contrast, illicit outflows tend to be larger than inflows in most developing countries without a drug trafficking problem. This is a general observation which holds by and large rather than as an iron-clad rule. A possible explanation for the difference in pattern between drug and non-drug countries is related to a greater need to bring in capital (i.e. through export over-invoicing) to finance the drug business. The second observation is that generally speaking, gross illicit flows as percent of GDP tend to be much higher (at least ten percent and may be as high as 30 percent) than those prevailing in non-drug trafficking developing countries, where the average tends to remain well below ten percent of GDP.

It should be noted however that economic methods using official economic statistics cannot, for the most part, capture illicit flows generated through drug sales and trafficking. Given that these transactions happen by definition on the black market (a trader is not going to declare 20 kg of opium to the customs department), there is no way to detect technical smuggling of illegal drugs via over- or under-invoicing in trade statistics or in the balance of payments. These illicit transactions fall outside the scope of the official economy.

36. Fuller, "Myanmar's Illicit Drug Trade."

37. Ibid.

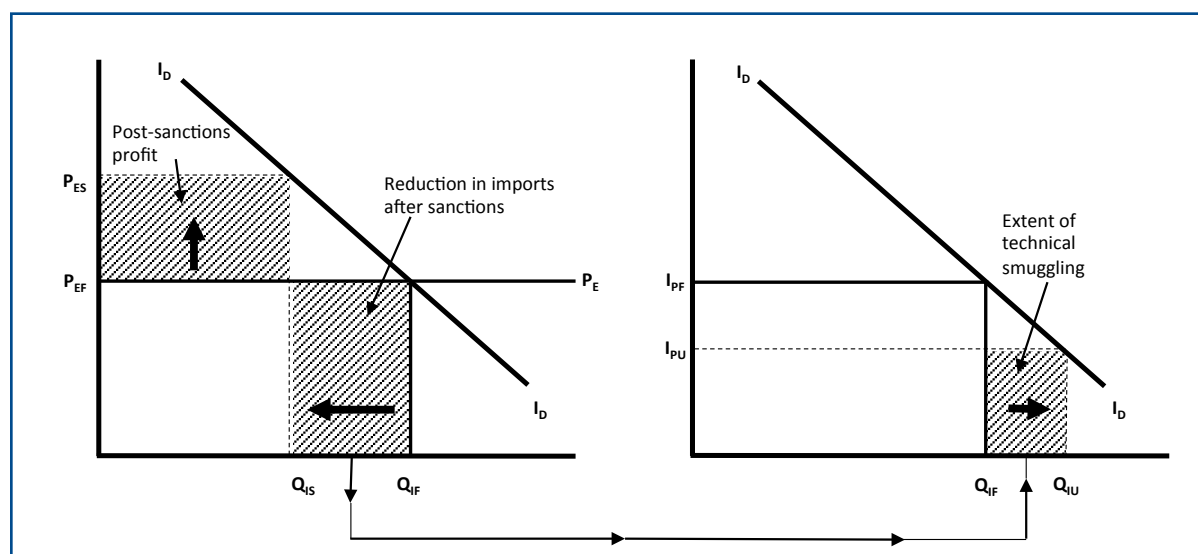
38. United Nations Office on Drugs and Crime, *World Drug Report 2014* (New York: United Nations Office on Drugs and Crime, 2014), 17, 27, 38, 72, Annex I: vi. [http://www.unodc.org/documents/wdr2014/World\\_Drug\\_Report\\_2014\\_web.pdf](http://www.unodc.org/documents/wdr2014/World_Drug_Report_2014_web.pdf).

## v. Technical Smuggling, Sanctions Driving Illicit Flows and Capital Flight

We estimate technical smuggling through the under-invoicing of imports and exports. Due to the prevalence of import under-invoicing, we argue that insular policies and international sanctions may well have facilitated “technical” smuggling through the under-invoicing of imports. Tables 3 and 4 (see pages 10 and 12) show that unrecorded inward capital flows and illicit trade inflows as a percent of GDP are in fact larger than corresponding outward transfers. Appendix Table 2 confirms that technical smuggling through import under-invoicing is by far the largest component of such inward flows, indicating potential evasion of smuggling.

Chart 3 illustrates how sanctions on exports from Western countries can lead to technical smuggling through under-invoicing imports of those goods. The quantity that was imported freely before the ban  $Q_{IF}$  is reduced to  $Q_{IS}$  after the sanctions go into effect. The export supply curve is horizontal, representing the fact that it is perfectly elastic. The world supplies Myanmar goods at price  $P_{EF}$ , which Myanmar is not able to influence. After the partial embargo goes into effect, the price in Myanmar of goods subject to sanctions goes up from  $P_{EF}$  to  $P_{ES}$ , and the post-sanctions profits of the licensed importer is shown by the upper shaded area. The lower shaded area captures the excess demand that remains as a result of the decline in imports of those goods subject to sanctions.

**Chart 3. Sanctions on Exports to Myanmar and Import Under-Invoicing 1/**



1/ Sanctions on exports are assumed to be incomplete in that not all countries adopt a complete ban on exports of the goods to Myanmar at the same time. The reduction in imports is assumed to be partly or wholly offset by technical smuggling. There is no domestic production of the goods.

Import under-invoicing of goods occurs when importers deliberately undervalue consignment of those goods subject to sanctions. The undervaluation translates into a lower price  $I_{PU}$  compared to the world price of those goods  $I_{PF}$ . In effect, that means the importer is bringing in a higher quantity

of goods or undervalued goods than he declares to Customs, and the imports under free-market conditions  $Q_{IF}$  increases to  $Q_{IU}$ . The shaded area in the right-hand chart shows the extent of technical smuggling of the goods in question. The excess demand is being partly or wholly satisfied through technical smuggling, which is represented by the bottom line running from  $Q_{IS}-Q_{IF}$  to  $Q_{IF}-Q_{IU}$ .

The post-sanctions profit would be somewhat less than the area shown in the chart, because the importer may have to bribe government officials to obtain a license to continue importing goods from other countries that have not imposed the sanctions, among other costs. However, the importer still makes a handsome profit as the price of the restricted item increases in the domestic market. The large potential profit provides an incentive for importers to under-invoice imports of the commodity from other exporters. Under the scenario depicted in Chart 3, technical smuggling can and does meet the excess demand without an increase in recorded imports from the remaining suppliers. The imposition of sanctions on goods leads to a decline in overall imports as reported to the IMF. However, this decline is overstated, because it includes deliberate under-invoicing.

## vi. Physical Smuggling and Black Market Trade

GFI has undertaken an initial study of physical smuggling using satellite imagery. The satellite images show that Myanmar's porous borders with its neighbors facilitate physical smuggling, particularly for countries with weak governance and economic policies that produce black markets and other distortions.

Another area for reform is curbing black market trade and physical smuggling. Black market trading was a significant force in the country even before the foreign exchange controls were introduced; one study estimated that black market trade was worth 50-85 percent of Myanmar's trade in the 1980s.<sup>39</sup> Cross-border smuggling with Thailand and China is especially prevalent.<sup>40</sup> In 1990, the *New York Times* reported on heroin smuggling over the Myanmar-India border, particularly into India's Manipur state.<sup>41</sup> More recently, *The Economist* profiled both technical smuggling (i.e., under-invoicing) of goods into Myanmar as well as the physical smuggling of goods. A Burmese politician, speaking to Parliament in October 2013, claimed that over 80 percent of the four million motorbikes in the country were imported illegally.<sup>42</sup> Government official Yan Naing Tun stated to *The Irrawaddy*, a local newspaper, that "the amount of smuggled goods this [fiscal] year 2014-2015 is higher than in 2013-2014," indicating that smuggling continues to grow, to the detriment of officially recognized trade and government revenues.<sup>43</sup> There has also been much press lately concerning human trafficking from Myanmar.<sup>44</sup>

39. Myat Thein, "Economic Development of Myanmar" (Singapore: Institute of Southeast Asian Studies, 2004), 80.

40. Set Aung Winston, "Informal Trade and Underground Economy in Myanmar: Costs and Benefits," Occasional Paper Observatory Series 04 (Bangkok: Research Institute on Contemporary Southeast Asia (IRASEC), 2011), 8. <http://www.irasec.com/ouvrage.php?id=23>.

41. Sanjoy Hazarika, "India Reports Drug Smuggling on Burmese Border," *The New York Times*, June 10, 1990, <http://www.nytimes.com/1990/06/10/world/india-reports-drug-smuggling-on-burmese-border.html>.

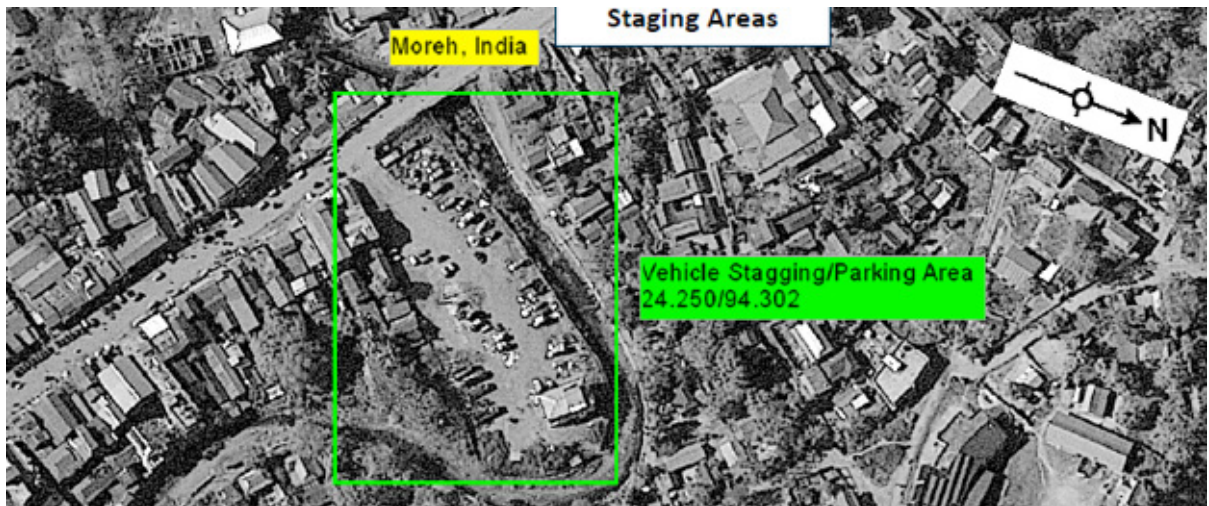
42. "Silk Road Smuggling," *The Economist*, November 28, 2014, <http://www.economist.com/news/china/21635143-china-struggles-contraband-its-neighbours-bordering-crime>.

43. Kyaw Hsu Mon, "Smuggling Across Borders with China, Thailand Rising: Minister," *The Irrawaddy*, January 21, 2015, <http://www.irrawaddy.org/business/smuggling-across-borders-china-thailand-rising-minister.html>.

44. Scott Simon, "People-Smuggling Is Big Business In Myanmar," *Weekend Edition Saturday* (National Public Radio, May 23, 2015), <http://www.npr.org/2015/05/23/408996476/people-smuggling-is-big-business-in-myanmar>.

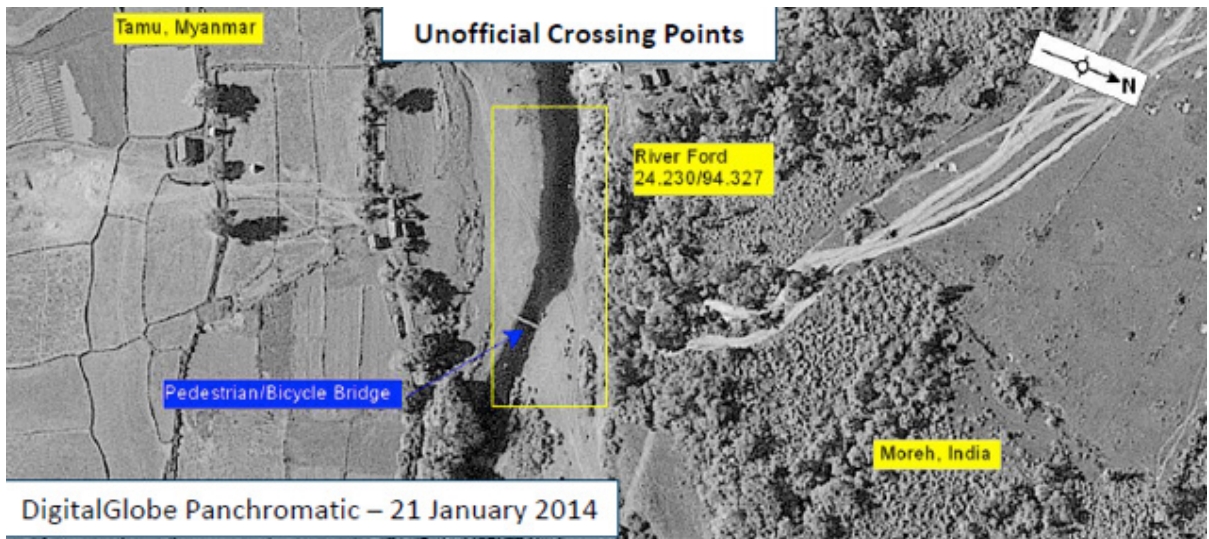
The first three images below show examples of satellite photos that reveal evidence indicative of smuggling routes and behavior (see Exhibits A-C). The fourth image is of the Myanmar-India border area, which shows there are many mountain passes that appear ideal for trafficking (see Exhibit D, yellow-shaded areas). This is but a preliminary analysis of Myanmar's problem with physical smuggling, which is separate from but related to technical smuggling. The Policy Recommendations section in this report discusses next steps for coming to terms with smuggling in Myanmar.

### Exhibit A. Vehicle Staging Area: Moreh, India [21 January 2014]



Source: DigitalGlobe

### Exhibit B. Unofficial Crossing Point: Tamu, Myanmar and Moreh, India [21 January 2014]



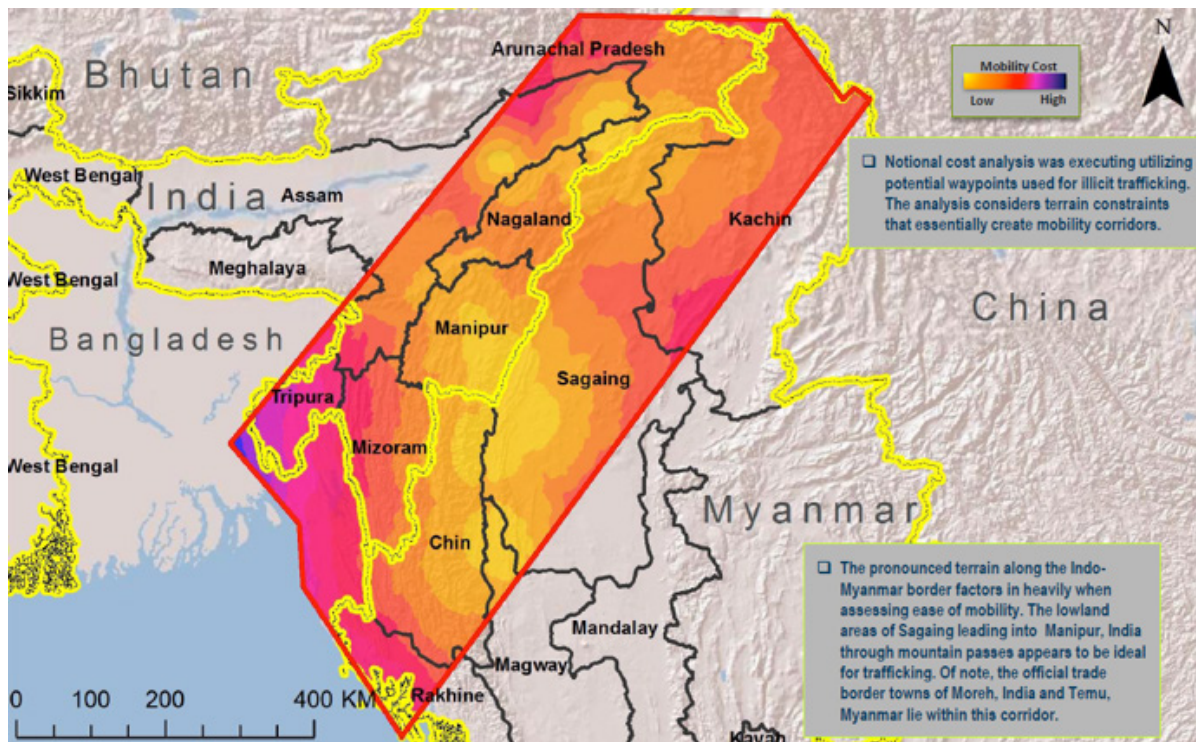
Source: DigitalGlobe

**Exhibit C. River Ford between Zokhawthar, India and Rihkhawdar, Myanmar**  
 [25 October 2011]



Source: DigitalGlobe

**Exhibit D. Notional Cost Surface Analysis: Potential Waypoints for Illicit Trafficking**



Source: DigitalGlobe

## vii. Tax Loss Due to Illicit Financial Flows in Relation to Social Spending on Health and Education

This section estimates Myanmar's tax revenue loss due to illicit financial flows, and puts that loss in the context of government social spending on health and education.<sup>45</sup> The analysis is subject to the caveat that the estimates of revenue loss are subject to a number of simplifying assumptions. In order to arrive at more accurate estimates of revenue loss, one would have to look at revenue loss related to specific import commodities and the duty rates applicable to them. Instead, we have based our estimates of revenue loss due to import under-invoicing on average import duty rates rather than rates based on specific commodities at the lower Harmonized System (HS) code classifications.

The tax loss for Myanmar due to illicit financial flows was calculated using figures for import under-invoicing and export under-invoicing. Import under-invoicing (i.e., technical smuggling), an illicit inflow, is an evasion of import duties. Thus, import under-invoicing figures for all years are multiplied by the tariff rate, which was found to average 4.43 percent for the years where data was available.<sup>46</sup> This presents an estimate of customs duties lost due to import under-invoicing.

Export under-invoicing, an illicit outflow, can be translated into an evasion of corporate profit taxes. We assume three scenarios: that 50, 30, or 20 percent of the capital moved offshore was profit. These scenarios create upper and lower bounds for our tax loss estimates. Once export under-invoicing has been adjusted for these three profit scenarios, it is multiplied by the profit tax rate, found to be 26.6 percent in 2014.<sup>47</sup>

Based on the above methodology, preliminary findings subject to these caveats indicate that over the period 1960-2013, between US\$2.9 and US\$3.6 billion in potential tax revenues were lost through deliberate trade misinvoicing. Even more striking, 27.0 to 33.4 percent of this tax loss occurred during the ongoing political transition, from 2010-2013.<sup>48</sup> As we noted above, this is largely due to the huge spike in technical smuggling via import under-invoicing in those years. If this tax loss had instead been captured, the additional revenue could have been used to expand Myanmar's social budget.

Due to decades of neglect in social expenditures by the military government, Myanmar lags far behind its regional peers in many areas of economic and human development. Turnell notes that "state spending on education, at little more than 0.57 percent of GDP in 2000, was the lowest in the

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45. These expenditures are sourced from the World Bank World Bank, "The Economy of the Union of Burma" (Washington, DC: World Bank, 1972); International Monetary Fund, *Burma: 1963 Article XIV Consultation* (Washington, DC: International Monetary Fund, 1963); International Monetary Fund, *Burma: Recent Economic Developments* (Washington, DC: International Monetary Fund, 1974, 1976, 1980, 1984, 1986, 1989, 1993, 1997, 1998, 1999); International Monetary Fund, "Government Finance Statistics (GFS)," [Online Database], accessed May 6, 2015, <http://elibrary-data.imf.org/FindDataReports.aspx?d=33061&e=170809>; and International Monetary Fund, "World Economic Outlook Database: April 2015 Edition." As with other variables in this report, health expenditures and education expenditures were converted to U.S. dollars using the effective exchange rate, if applicable.

46. "World Development Indicators: Myanmar - Tariff Rate, Applied, Simple Mean, All Products (%)," The World Bank, *World Databank*, accessed May 6, 2015, <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators#>.

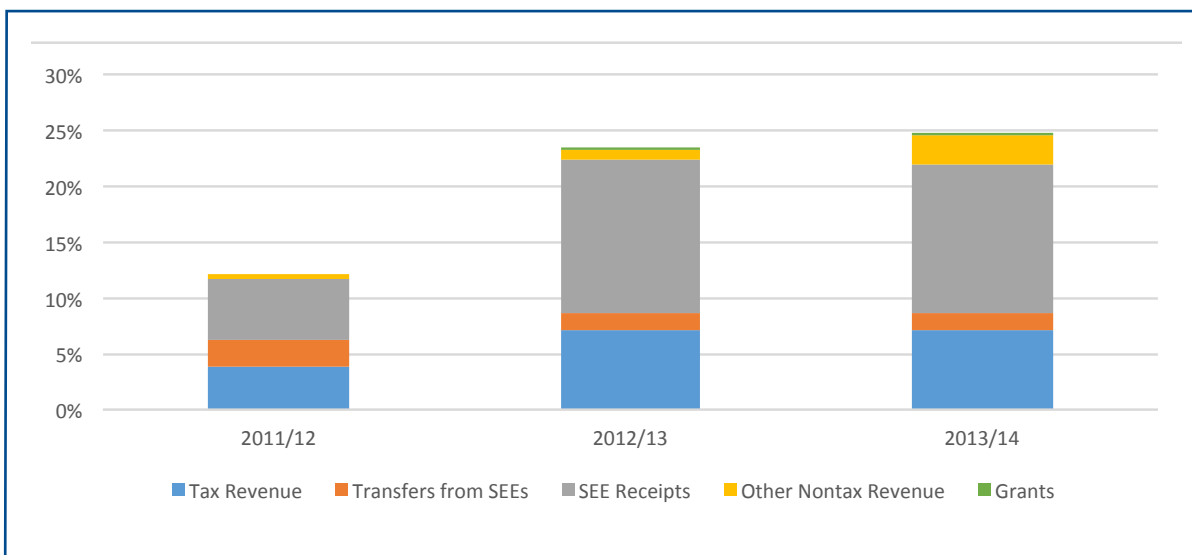
47. PricewaterhouseCoopers, "Paying Taxes 2014: The Global Picture" (London: PricewaterhouseCoopers, 2013), 174, <http://www.pwc.com/gx/en/paying-taxes/assets/pwc-paying-taxes-2014.pdf>.

48. In constant U.S. dollar terms.

world.”<sup>49</sup> Despite recent improvements, Myanmar’s government revenues as a percentage of GDP remain well below those of its ASEAN regional peers.

We confirm Turnell’s finding that Myanmar continues to allocate very little budgetary resources to health and education. As both a percent of GDP and as a percent of government expenditures, Myanmar’s government spending on education is the lowest in ASEAN.<sup>50</sup> In health spending, it performs better than only the Lao People’s Democratic Republic.<sup>51</sup>

**Chart 4. Components of Government Revenue & Grants**  
(percent of GDP)

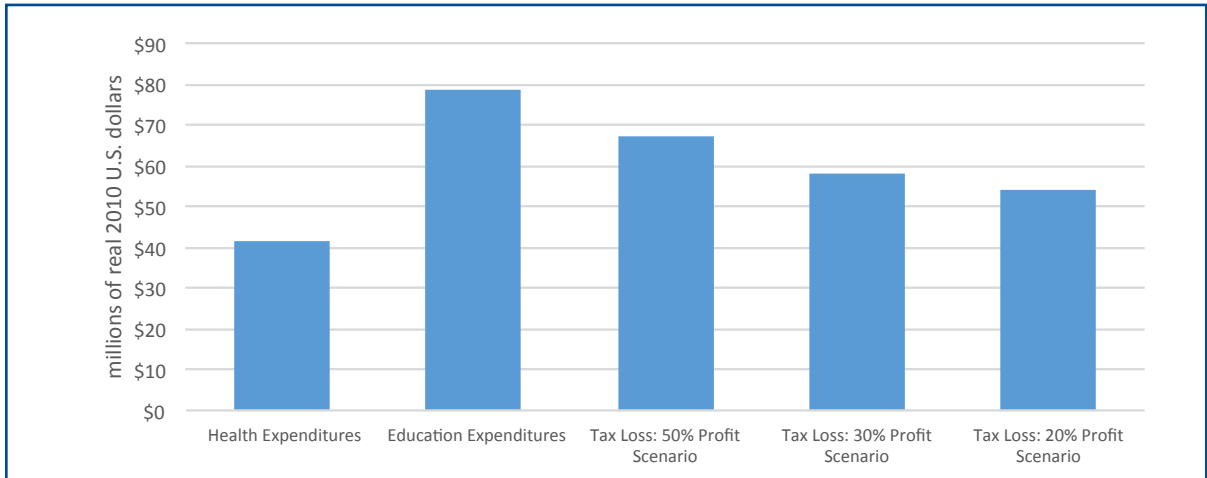


Source: International Monetary Fund, “Myanmar: Staff Report for the 2014 Article IV Consultation,” 21.  
Note: SEE stands for State-Owned Economic Enterprise

Chart 4 shows the breakdown of Myanmar’s government revenues in recent years. Though tax revenues increased from 2011/12 to 2012/13, tax revenue as a percentage of GDP is expected to remain stable at slightly over seven percent of GDP through 2016.<sup>52</sup> Of this minimal seven percent tax base, only 5.2 percent comes from customs duties.<sup>53</sup> As such, there is scope for a significant increase in tax receipts with improved customs enforcement and a crackdown on technical and physical smuggling. Recouping tax losses due to illicit flows could make an important contribution to the government budget. Given Myanmar’s large and rising illicit inflows via import under-invoicing, there are significant tax revenues to be collected. These gains could be used to more than double public expenditures on health or nearly double public expenditures on education. From 1960-2013, the average ratio of such tax loss to health and education expenditures ranged from 122-172 percent and 48-73 percent, respectively. Chart 5A presents an average of tax loss and health and education expenditures in gross terms for 1960-2013.

49. Turnell, “Myanmar’s Fifty-Year,” 80.  
50. United Nations Children’s Fund (UNICEF), *Snapshot of Social Sector Public Budget Allocations and Spending in Myanmar* (Yangon: UNICEF, 2013), 36, [http://www.unicef.org/myanmar/Final\\_Budget\\_Allocations\\_and\\_Spending\\_in\\_Myanmar.pdf](http://www.unicef.org/myanmar/Final_Budget_Allocations_and_Spending_in_Myanmar.pdf).  
51. *Ibid.*, 26.  
52. International Monetary Fund, “Myanmar: Staff Report for the 2014 Article IV Consultation,” 21.  
53. United Nations Children’s Fund (UNICEF), *Snapshot of Social Sector Public Budget*, 23.

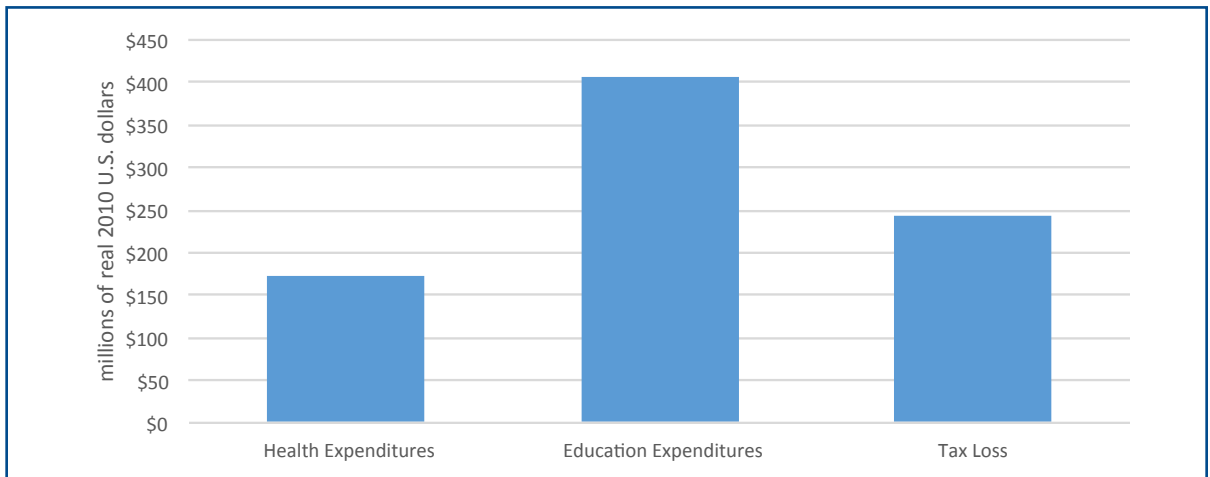
**Chart 5A. Health and Education Expenditures and Tax Loss, 1960-2013 Yearly Average<sup>54</sup>**  
*(millions of real 2010 U.S. dollars)*



From 2010-2013, the tax loss averaged 129 percent of health expenditures and 42 percent of education expenditures. Chart 5B supplements Chart 5A in that it presents average tax loss, health, and education spending in millions of constant (2010) U.S. dollars for 2010-2013.

The market-oriented economic reforms currently being pursued by the Government of Myanmar in cooperation with its international partners represent important steps in the right direction. Nonetheless, customs enforcement and efficient, non-discriminatory tax collection must necessarily go hand-in-hand with these reforms. Given that approximately 30 percent of the tax loss occurred in just the last four years of a 54-year period, it is clear that some economic agents have been taking advantage of increased economic openness for their own gains. If the government were able to discourage and detect these illicit flows via policy changes, significant new tax receipts could be used to supplement current levels of health and education spending.

**Chart 5B. Health and Education Expenditures and Tax Loss, 2010-2013 Yearly Average<sup>55</sup>**  
*(millions of real 2010 U.S. dollars)*



54. See footnote 43 for health and education data sources.

55. As there was no export under-invoicing from 2010-2013, each of the three profit scenarios (50, 30, and 20 percent) produces the same estimate of tax loss. For more on the methodology of estimating tax loss due to illicit flows, please refer to Appendix A.



## IV. An Empirical Estimation of the Underground Economy

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### i. Estimation of the Underground Economy Using the Currency Demand Approach

Economists have alternatively referred to the underground economy as the shadow economy. In many developing countries with a narrow tax base (meaning only a small segment of the active labor force pays any taxes), economists have also used the term “informal economy” to represent the underground economy. Myanmar’s large and vibrant informal economy allows workers to evade paying legitimate taxes.

The underground economy serves as a good proxy for the state of overall governance in a country. This is because the size of the underground economy is inversely related to the state of governance—in countries where the underground economy is large in relation to official GDP, the state of governance is weak, while countries with strong governance tend to have a small underground economy relative to GDP.

Given Myanmar’s historically closed economy, the plethora of controls over the means of production, exports, and imports, as well as its multiple exchange rate practices (which set the exchange rate well below the free market rate), we can expect the underground economy to be quite large relative to official GDP. The distortions in relative prices due to administered prices greatly increase the incentives to smuggle goods across borders and, as we have seen, to under-invoice imports.

We apply a variant of the currency demand approach, as pioneered by Tanzi<sup>56</sup> and further refined by a number of researchers including Brambila-Macias and Cazzavillan.<sup>57</sup> This model is an indirect estimator of the underground economy; it uses discrepancies in official statistics to estimate the size of the informal sector. The model is specified as follows:

$$\text{Equation 1: } \ln(CD_t) = \beta_0 + \beta_1 \ln(Y_t) + \beta_2 \ln(1 + EffTax)_t - \beta_3 \ln(IR_t)$$

In the above model,  $CD$  represents real currency demand,  $Y$  real GDP,  $EffTax$  the ratio of total taxes to GDP, and  $IR$  the interest rate on deposits.

Prior to model estimation, Augmented Dickey-Fuller (ADF) tests are run on each variable in Equation 1 to determine the presence of a unit root, a common issue in time series of economic variables. As

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56. Vito Tanzi, “The Underground Economy in the United States: Annual Estimates, 1930-80,” *Staff Papers (International Monetary Fund)* 30, no. 2 (1983): 283–305.

57. Jose Brambila-Macias and Guido Cazzavillan, “The Dynamics of Parallel Economies: Measuring the Informal Sector in Mexico,” *Research in Economics* 63, no. 3 (2009): 189–99.

most economic time series are non-stationary, we found that the null hypothesis of the presence of a unit root cannot be rejected in levels, indicating that the series in equation are also non-stationary. However, when the variables are first-differenced, the presence of a unit root for each is rejected with 99 percent confidence, with the exception of the tax variable, which rejects the presence of a unit root with 95 percent confidence. Results of these tests are presented in Table 7.

Due to the presence of non-stationarity in each of the variables, traditional regression estimation cannot be used. Therefore, a vector error corrections model (VECM) is employed to estimate the currency demand equation. First, two additional pre-estimation tests must be run to determine the optimal lags and cointegrating rank of the model. The final prediction error (FPE), Akaike's information criterion (AIC), and the Hannan and Quinn information criterion (HQIC) statistics all indicate that the optimal number of lags is two. The trace statistic from Johansen's maximum likelihood estimator specifies that there is one cointegrating vector for the four variables.

**Table 7. Unit Root Tests**

Variable	Test Statistic: Levels	Test Statistic: First Difference
$\ln(CD)$	-0.986	-9.593***
$\ln(Y)$	-0.14	-7.454***
$\ln(1+EffTax)$	-0.77	-3.287**
$\ln(IR)$	-1.212	-7.080***

\*\*\*, \*\*, \* represent 99%, 95%, and 90% confidence, respectively

Using this information on lag length and cointegrating vectors, we estimate Equation 1 to obtain a long-run fitted estimate for currency demand, denoted as  $\widehat{CD}_t$ . The effective revenue ratio is then set to zero to estimate currency demand without taxes, denoted as  $\widetilde{CD}_t$ .

*We did not find central government taxes to be a significant driver of the underground economy.* There are two reasons why central government taxes would fail to raise money demand sufficiently on their own. First, only a small proportion of the labor force (less than two percent) actually pay income taxes. Hence, estimating the demand for money with and without taxes is not going to yield a significant increase in extra money needed to meet tax obligations. Second, as Turnell notes, Myanmar's system of taxes is highly fragmented in that various levies are imposed on taxpayers by (i) the township and development councils, (ii) village peace and development councils, (iii) the Myanmar military, and (iv) government-controlled nongovernmental organizations.<sup>58</sup> These fragmented tax rates vary by individual taxpayers and are extremely difficult to consolidate. However, they need to be included in the currency demand equation in order to meet the resulting increase in the demand for money. Given the lack of data on fragmented tax rates, we had to analyze the additional factors driving the underground economy.

58. Turnell, "Fundamentals of Myanmar's Macroeconomy," 141.

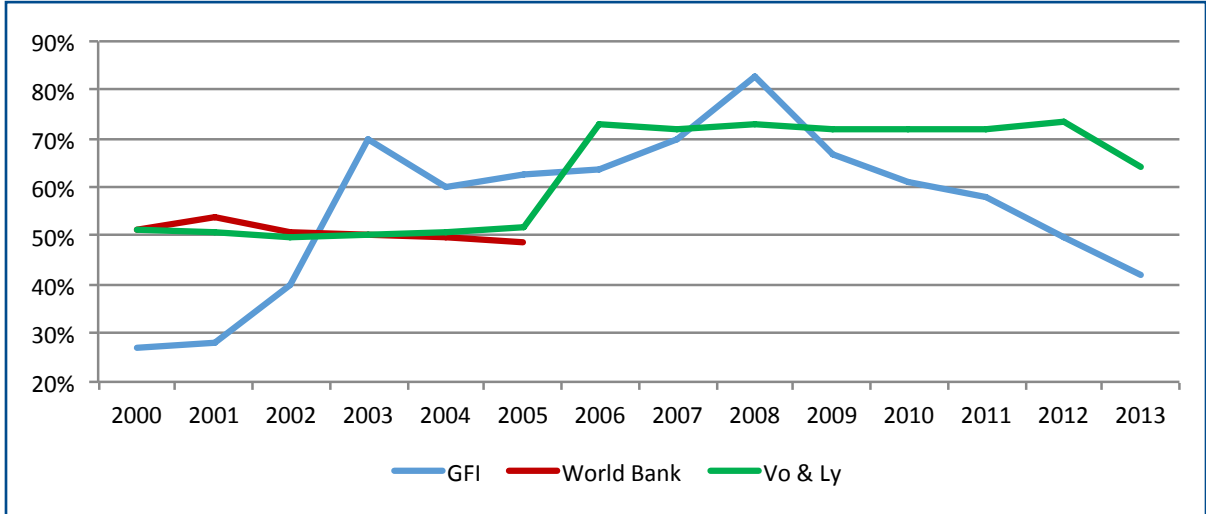
The only other significant driver of Myanmar’s underground economy is the smuggling of goods subject to price controls and sanctions. Hence, we supplemented the extra money due to taxes with the amount of money needed to purchase smuggled goods. We proxied the latter by a moving-average series on illicit inflows, assuming that there is a steady demand for smuggled goods that a non-stationary series that sometimes plunges to zero is not able to capture.

The difference between these two series is then summed with the five-year moving average of illicit trade inflows, converted to millions of kyat using the effective exchange rate. Based on the hypothesis that illicit trade inflows or technical smuggling is a much more significant driver of Myanmar’s underground economy than taxes, the extra money demand is multiplied by the velocity of money to obtain an estimate of the size of the underground economy:

$$\text{Equation 2: } UE_t = \left( \frac{GDP_t}{M2_t} \right) * (\widehat{CD}_t - \widetilde{CD}_t + Inflows_t)$$

As a percentage of GDP, the formulation here tracks estimates of other researchers relatively well (see Chart 6). A widely cited World Bank working paper is our primary baseline.<sup>59</sup> We also include estimates by Vo and Ly,<sup>60</sup> which were pinned to the World Bank’s 1999 value of 51.9 percent.

**Chart 6. Myanmar’s Underground Economy as a Percent of GDP: Comparison to Previous Studies**  
(percent of GDP)

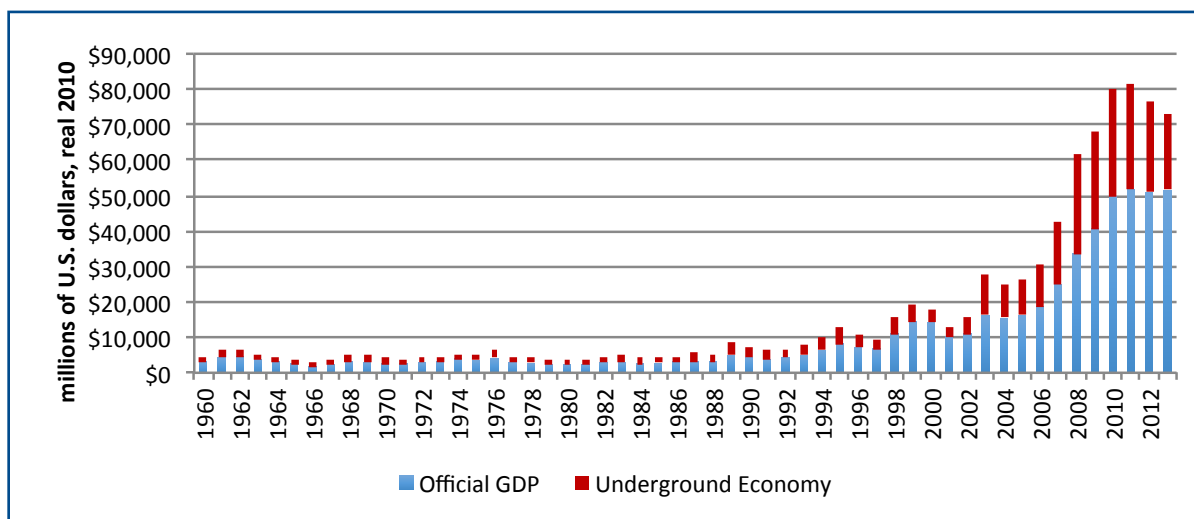


However, this study’s value lies in its examination of Myanmar’s underground economy in a historical context. Chart 7 tracks the value of Myanmar’s official GDP and its underground economy from 1960 to 2013 in millions of real 2010 U.S. dollars. It is quite clear that the both the informal

59. Friedrich Schneider, Andreas Buehn, and Claudio E. Montenegro, “Shadow Economies All over the World: New Estimates for 162 Countries from 1999 to 2007,” Policy Research Working Paper No. 5356 (Washington, DC: World Bank, 2010), 20.  
60. Duc Hong Vo and Thinh Hung Ly, “Measuring the Shadow Economy in the ASEAN Nations: The MIMIC Approach,” *International Journal of Economics and Finance* 6, no. 10 (September 25, 2014): 145.

sector and the official economy have each grown significantly in this time period; growth in the underground economy (in terms of gross real value) was particularly strong from the 1990s onward.

**Chart 7. Myanmar’s Underground Economy, 1960-2013**  
(millions of real 2010 U.S. dollars)



GDP is kyat-denominated data converted to U.S. dollars using the derived effective exchange rate (see Appendix A, Section iv). Kyat-denominated GDP is sourced from the IMF’s April 2015 World Economic Outlook (1998-2013), the May 2001 World Economic Outlook (1970-1997), the World Bank’s World Development Indicators database (1968-1969), and IMF Article XIV Consultation Staff Reports from 1969 (1964-1967, p. 1), 1966 (1963, p. 2), 1965 (1961-1962, p. 1), and 1963 (1960, p. 4).

As a percent of GDP, however, the underground economy remained relatively stable throughout the 1960s and 1970s, before spiking upwards sharply in the 1980s (see Chart 8). It returned to a more normal level in the 1990s and increased in the 2000s, reaching a peak of 83.0 percent of official GDP in 2008 (see Appendix Table 5). From 2010-2013, during the beginning of the political and economic transition, the underground economy as a percentage of GDP decreased from the previous decade’s level, boding well for the country’s future.

## ii. Illicit Flows, Illegal Capital Flight, and the Underground Economy

We assume that unrecorded capital flows are mostly illegal as there is no reason why legitimate capital flows should go unrecorded. Sometimes, however, balance of payments compilers in developing countries, particularly those with a weak statistical capacity such as Myanmar, fail to record or appropriately classify legitimate capital flows that otherwise should have been recorded.

Claessens and Naudé, using standard balance of payments accounting methodology, show that the World Bank Residual method which captures the gap between source of funds and use of funds, could also include some amount of licit capital flows.<sup>61</sup> However, we find that the magnitude

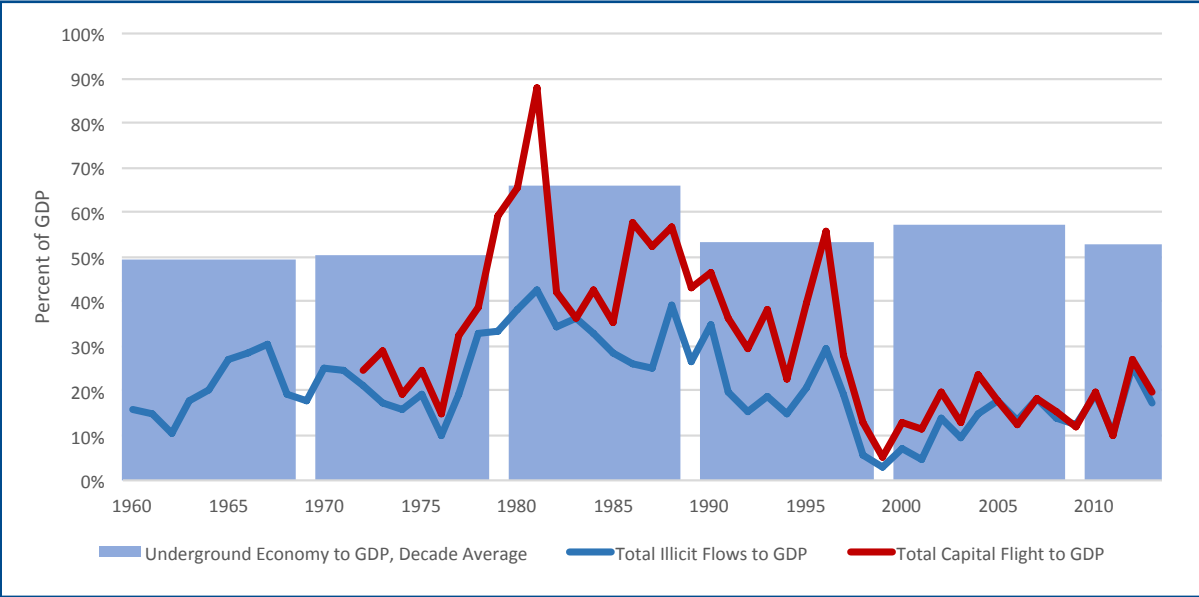
61. Claessens and Naudé, “Recent Estimates of Capital Flight.”

of such licit flows is quite small relative to total flight capital or illicit trade flows. The reason is that trade misinvoicing, which generates purely illicit flows, accounts for the bulk of capital flight. For all developing countries, trade misinvoicing comprises about 60 percent of measurable capital flight and 80 percent of total measurable illicit trade outflows on average. Licit flows are a small component of unrecorded capital flows using the World Bank Residual method of estimating capital flight.

As flows are mostly illicit in both directions, we add them rather than net them out as in academic literature. This is because a net of illicit flows would be akin to the concept of net crime, which would be absurd. The so-called inflows cannot be treated as beneficial to an economy as is the case with recorded inflows of foreign direct investment or portfolio investments. It is conceptually sound to net out such licit recorded flows but not unrecorded flows that the government has no means of taxing. Moreover, since illicit flows cannot add to the productive capacity of an economy, the question of treating inflows as beneficial to an economy does not arise.

Gross illicit flows (inflows plus outflows) is a better measure of the adverse impact of illicit transactions on the economy given that both inflows (due to, say, import under-invoicing, which entails a loss of customs duties and, by extension, government revenues) and outflows (which includes profit shifting through export under-invoicing) are harmful. We test the hypothesis that the total volume of illicit flows into and out of Myanmar both drive and are driven by its underground economy.

**Chart 8. Myanmar: Underground Economy, Illicit Flows, and Capital Flight**  
*(percent of GDP)*



### iii. Model of Total Illicit Flows and the Underground Economy

In this section, we present a two-equation simultaneous equations model (SEM) to test the interactions between the underground economy and total illicit financial flows (inflows plus outflows) as well as their relation to other macroeconomic variables. Previous case studies by GFI found a strong and significant link between the underground economy and illicit flows in both directions.<sup>62</sup> The results of the SEM confirm that this finding holds in the case of Myanmar. To ensure confidence in the SEM, both equations are remodeled as VECMs to arrive at long-run estimates.

The underground economy ( $UE$ ) equation is modeled with total illicit flows ( $IFF_t$ ), the black market exchange rate with the U.S. dollar ( $BMER_t$ ),<sup>63</sup> financial deepening ( $FinDeep_t$ , M2/GDP), and the lagged underground economy ( $UE_{t-1}$ ) as explanatory variables. The illicit flows equation is dependent on the underground economy, real GDP per capita ( $YCap_t$ ), total taxes collected by the central government ( $Tax_t$ ), and lagged total illicit flows ( $IFF_{t-1}$ ). The underground economy and total illicit flows variables are endogenous; all other variables are exogenous. Results of the model and related tests are found below:

#### Results of the Simultaneous Equations Model

$$UE_t = 0.190 * IFF_t + 0.092 * BMER_t - 0.591 * FinDeep_t + 0.639 * UE_{t-1} + 1.675$$

[ 3.32]\*\*\*      [3.31]\*\*\*      [-5.96]\*\*\*      [8.77]\*\*\*      [2.34]\*\*\*

$$R^2 = 0.9780 \quad RMSE = 0.1278 \quad C-H = 0.9948 \quad ARCH = 0.4856$$

$$IFF_t = 0.653 * UE_t - 0.324 * YCap_t + 0.293 * Tax_t + 0.309 * IFF_{t-1} - 0.004$$

[2.66]\*\*\*      [-1.06]      [1.92]\*      [2.04]\*\*      [-0.00]

$$R^2 = 0.7872 \quad RMSE = 0.3669 \quad C-H = 0.7123 \quad ARCH = 0.1820$$

- t-statistics are reported in brackets
- \*\*\*,\*\* indicate significance at the 10%, 5%, and 1% level, respectively
- C-H indicates the p-value of the Cumby-Huizinga test for autocorrelation where a value greater than 0.10 represents the absence of serial correlation. The Cumby-Huizinga test is utilized as these equations contain endogenous variables.<sup>64</sup>
- ARCH indicates the p-value of the ARCH test for heteroskedasticity where a value greater than 0.10 represents the absence of serial heteroskedasticity
- Instruments include all exogenous variables in the system and illicit financial inflows
- All variables run in natural logs. All monetary variables in real 2010 kyat.

All results produce the expected signs, with varying degrees of significance. In the first equation, illicit flows, the black market exchange rate, and the lagged underground economy have a positive and significant impact on the size of the underground economy. Financial deepening has the expected negative sign, indicating that resources shift away from the underground economy as the

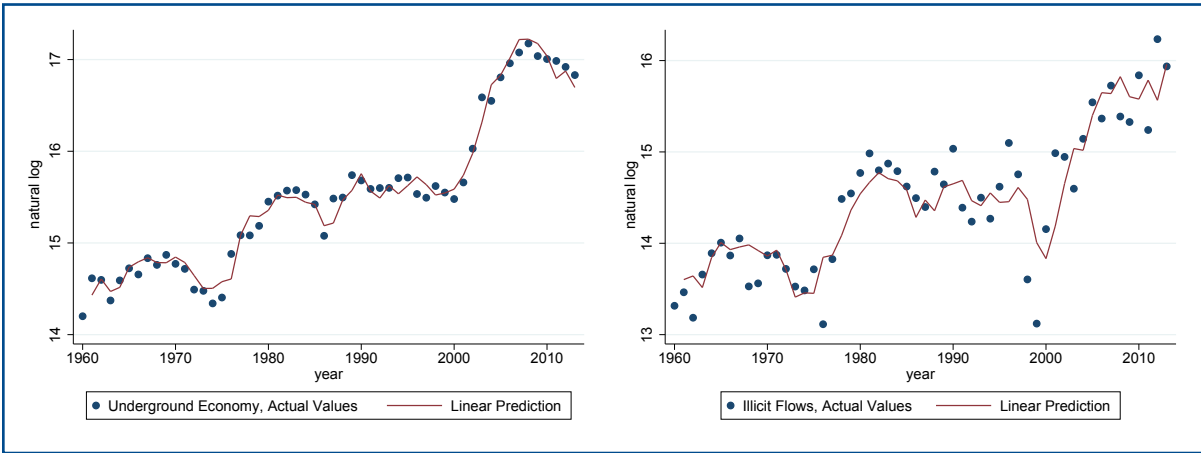
62. Kar and LeBlanc, *IFFs to and from the Philippines*, 22; Dev Kar, *Brazil: Capital Flight, Illicit Flows, and Macroeconomic Crises, 1960-2012* (Washington, DC: Global Financial Integrity, 2014), 22; Dev Kar, *Mexico: Illicit Financial Flows, Macroeconomic Imbalances, and the Underground Economy* (Washington, DC: Global Financial Integrity, 2012), 36.

63. Kul B. Luintel, "Real Exchange Rate Behavior: Evidence from Black Markets," *Journal of Applied Econometrics* 15, no. 2 (2000): 166, 175; International Monetary Fund, "WEO Database: May 2001"; International Monetary Fund, "WEO Database: April 2015." For 1960-1989, the black market exchange rate is derived from yearly averages of monthly data published in Luintel; for 1990-2013, the IMF World Economic Outlook databases are used to derive the exchange rate by dividing kyat-denominated GDP by USD-denominated GDP.

64. Robert E. Cumby and John Huizinga, "Testing the Autocorrelation Structure of Disturbances in Ordinary Least Squares and Instrumental Variables Regressions," *Econometrica* 60, no. 1 (January 1992): 185.

health of the formal sector improves. The second equation shows that the underground economy is a positive and significant driver of illicit flows. The positive coefficient on tax collected, a proxy for the overall tax rates, indicates that higher tax rates motivate economic agents to shift their assets into the informal sector. The positive and significant signs on the endogenous variables in each equation confirm that illicit flows and the underground economy drive each other in the case of Myanmar. The simulated values track the actual values quite well in dynamic simulation (see Chart 9).

**Chart 9. Actual and Simulated Values of the Underground Economy and Total Illicit Flows**  
(millions of real 2010 kyat, natural log)



However, given that all variables are non-stationary and of order I(1), as evidenced by ADF tests, these two equations are separately remodeled as VECMs. Each VECM excludes the lagged independent variables for the underground economy and illicit flows, respectively. The appropriate lag lengths of three and one, respectively, for these models were determined using AIC and the final prediction error. Using this information, the Johansen test for cointegration indicated the presence of just one cointegrating vector in each equation. The long-run estimates are as follows:

**Results of the Vector Error Correction Models**

$$UE_t = 0.824 * IFF_t + 0.184 * BMER_t - 0.634 * FinDeep_t + 1.936$$

[0.015]\*\*\*      [0.024]\*\*\*      [0.171]\*\*\*

$\xi = -0.245^*$       **Log Likelihood = 114.639**

$$IFF_t = 1.255 * UE_t - 0.910 * YCap_t + 0.518 * Tax_t + 0.839$$

[0.179]\*\*\*      [0.316]\*\*\*      [0.186]\*\*

$\xi = -0.592^{***}$       **Log Likelihood = 62.567**

- Standard errors are reported in brackets
- \*\*\*, \*\*, \* indicate significance at the 10%, 5%, and 1% level, respectively
- $\xi$ : error correction term indicating percent correction in the model per period

Post-estimation, the model was shown to be free of serial correlation for lag orders 1-4 as confirmed by the Lagrange-multiplier test. This test, first described by Johansen,<sup>65</sup> searches for autocorrelation in the residuals of a VECM. Additionally, the eigenvalue stability condition was confirmed for each, given that each of the inverse roots fall inside the unit-root circles (see Appendix Chart 2).

The results of the VECMs confirm the findings of the SEM, with one important difference: the GDP per capita variable gains significance at the one percent level. This indicates that a one percent increase in GDP per capita is correlated with a 0.91 percent decrease in the size of illicit flows. This finding emphasizes that illicit flows divert resources away from the official economy.

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65. Søren Johansen, *Likelihood-Based Inference in Cointegrated Vector Autoregressive Models* (Oxford, UK: Oxford University Press, 1997), 21–22.



## V. Policy Recommendations

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Global Financial Integrity recommends the following steps be taken by the Government of Myanmar, with support from its development partners, to address the core issues this report identified in the previous sections, namely the misinvoicing of trade, money laundering, and significant gaps in economic and trade data.

### i. Trade Misinvoicing

This report's finding that trade misinvoicing is by far the largest component of measurable illicit financial flows and capital flight to and from Myanmar emphasizes that comprehensive customs reform is needed. Without such reform, illicit flows will continue to represent a significant lost opportunity for Myanmar.

As declared on the crest of the Myanmar Customs Department, “honesty is the best policy” for an effective customs department.<sup>66</sup> Capacity-building and policies to include international best practices would help promote and uphold this statement. For example, Myanmar does not implement the WTO Customs Valuation Agreement, which outlaws the use of falsified customs values.<sup>67</sup> An important first step would be to ratify the WTO Customs Valuation Agreement.

The analysis of Myanmar's IFFs and capital flight earlier in the paper highlighted the significant trade misinvoicing flows and the relationship between these flows and the junta's economic policies. The government has made progress in eliminating the linkage between export receipts and import licensing and dropped the “export-first” policy in April 2012.<sup>68</sup> In dropping export license requirements for 152 types of goods and import license requirements for 166, the World Bank found that Myanmar made the most significant improvement of any country with regard to the facilitation of international trade in 2013/14.<sup>69</sup> This reform has decreased the processing time required to export by 20 percent and the processing time required to import by 19 percent.<sup>70</sup> Additionally, the commercial tax on most exports was also eliminated in 2012/13, limiting the incentive to misinvoice exports or to export on the black market.<sup>71</sup>

It is too soon for the effects of the policy's abolition to be reflected in the data given that the “export-first” policy was abolished in 2012 and the data available at the time of writing ran through 2013. Indeed, both import under-invoicing and export over-invoicing rose in real terms from 2012 to 2013. Additional years of data beyond 2013 will show how the reforms are working and what further

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66. “Myanmar Customs Department,” accessed May 25, 2015, <http://www.myanmarcustoms.gov.mm/>.

67. World Trade Organization, “Trade Policy Review: Myanmar, Report by the Secretariat,” WT/TPR/S/293 (Geneva: World Trade Organization, January 21, 2014), 7, [https://www.wto.org/english/tratop\\_e/tpr\\_e/s293\\_e.pdf](https://www.wto.org/english/tratop_e/tpr_e/s293_e.pdf).

68. Organization for Economic Co-operation and Development, *OECD Investment Policy Reviews: Myanmar 2014* (Paris: OECD, 2014), 282, <http://www.oecd.org/daf/inv/investment-policy/Myanmar-IPR-2014.pdf>.

69. World Trade Organization, “Trade Policy Review: Myanmar, Secretariat,” 7–8.

70. The World Bank, *Doing Business 2015: Going Beyond Efficiency*, 12th ed. (Washington, DC: The World Bank, 2014), 38, <http://www.doingbusiness.org/~media/GIAWB/Doing%20Business/Documents/Annual-Reports/English/DB15-Full-Report.pdf>.

71. World Trade Organization, “Trade Policy Review: Myanmar, Report by the Government,” WT/TPR/G/293 (Geneva: World Trade Organization, January 21, 2014), 19, [https://www.wto.org/english/tratop\\_e/tpr\\_e/g293\\_e.pdf](https://www.wto.org/english/tratop_e/tpr_e/g293_e.pdf).

measures may be needed to curtail Myanmar's illicit flows. Reforms will likely need to be more comprehensive and sustained in order to curtail trade misinvoicing.

GFI recommends that the Myanmar Customs Department move toward a real-time world market pricing risk analysis system. The large discrepancies between Myanmar's reported trade and its partners' reported trade with Myanmar suggest significant Customs challenges. The WTO Secretariat has identified "difficulties checking technical specification of exporting and importing goods" as the main challenge facing the Customs Department.<sup>72</sup> A real-time system would allow customs officials to determine whether or not the price of a good falls within a reasonable price band relative to the norm for such transactions. If the price falls outside that range, the transaction could be flagged and investigated, thus significantly curtailing the ease of transferring funds across the border illicitly through misinvoicing.

## ii. Anti-Money Laundering

The Financial Action Task Force (FATF), the international anti-money laundering standard setting body, removed Myanmar from its list of non-cooperative countries and territories in 2006.<sup>73</sup> The government has made policy advances since this time, but in February 2015, FATF named Myanmar among those countries that have not made sufficient progress in correcting strategic deficiencies related to anti-money laundering and combatting the financing of terrorism (AML/CFT).<sup>74</sup> The IMF has also characterized Myanmar as having substantial deficiencies in its AML/CFT regime, even with the adoption of new AML/CFT laws in 2014.<sup>75</sup> Given that Myanmar experiences significant levels of corruption and has an unregulated hundi (hawala) system, which together contribute to the continued problem of illicit proceeds from trafficking in drugs, humans, cash, and gems,<sup>76</sup> GFI urges Myanmar's government to make more meaningful progress on the AML/CFT front. Such improvements in the AML/CFT framework and its implementation should be reflected in subsequent FATF reports on the country.

## iii. Statistical Data Collection

The IMF launched the Data Standards Initiative following the financial crisis of 1994/95, when data deficiencies and opacity were widely felt to have contributed to market disturbances. All countries and jurisdictions were eligible to become "participants" under the General Data Dissemination Standards (GDDS), "subscribers" under the Special Data Dissemination Standards (SDDS), or "adherents" under the SDDS Plus.<sup>77</sup> The GDDS, SDDS, and SDDS Plus thus represent progressively

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72. World Trade Organization, "Trade Policy Review: Myanmar, Secretariat," 85.

73. Asia/Pacific Group on Money Laundering, "APG Mutual Evaluation Report on Myanmar: Against the FATF 40 Recommendations (2003) and 9 Special Recommendations" (Asia/Pacific Group on Money Laundering, July 10, 2008), 6, <http://www.apgml.org/members-and-observers/members/member-documents.aspx?m=e0e77e5e-c50f-4cac-a24f-7fe1ce72ec62>.

74. Financial Action Task Force, "FATF Public Statement: 27 February 2015" (Press Release, February 27, 2015), <http://www.fatf-gafi.org/countries/j-m/myanmar/documents/public-statement-february-2015.html>.

75. International Monetary Fund, "Myanmar: Staff Report for the 2014 Article IV Consultation," 14.

76. Asia/Pacific Group on Money Laundering, "APG Report on Myanmar," 5–6.

77. "Dissemination Standards Bulletin Board," *International Monetary Fund*, accessed June 6, 2015, <http://dsbb.imf.org/Default.aspx>.

higher tiers of data dissemination standards. Myanmar's participation in the GDDS started on November 14, 2013.<sup>78</sup>

According to the GDDS metadata on trade statistics published by the IMF, the merchandise trade statistics compiled by Myanmar's Central Statistical Organization (CSO) are broadly consistent with the guidelines recommended in the United Nations' *International Merchandise Trade Statistics: Concepts and Definitions 2010*.<sup>79</sup> Furthermore, all imports and exports of goods passing through Customs are covered, including public and private sector exports and imports on trade accounts, gifts, aid, and parcel posts. Sales of both foreign and national goods to foreign-flagged ships are included in export statistics; this was expanded to include cross-border trade in November 1988 when the borders were re-opened for trade. All imports are valued at the Myanmar customs border on a cost, insurance, and freight (c.i.f.) basis while exports are valued on a free-on-board (f.o.b.) basis.

Though Myanmar's statistical system may be in general conformity with international standards, there are notable deviations. The GDDS metadata notes that Myanmar's export and import data incorporate re-exports and imports for re-export.<sup>80</sup> The IMF's *Balance of Payments and International Investment Position Manual, Sixth Edition*, as well as the United Nations' *International Merchandise Trade Statistics: Concepts and Definitions 2010*, recommend that where possible and applicable, re-exports and re-imports should be shown separately as supplementary items.<sup>81</sup> This is just one example of a serious gap between international guidelines and Myanmar's methodology of compilation of trade statistics. There is therefore a real need for Myanmar to bring the compilation of economic statistics in line with international guidelines.

Another issue is that GDDS metadata does not provide a complete assessment of a country's statistical system. Once the definitive source of such information, Data Modules in the IMF's Report on Observance of Standards and Codes (Data ROSCs) have been scaled back in recent years due to resource constraints. Data ROSCs used to serve as the basis for a thorough assessment of those elements of a country's statistical system that are within the purview of the IMF, such as those noted above. The present approach of the GDDS and SDDS, which adopt a Data ROSCs' Data Quality Assessment Framework (DQAF) for the purpose of developing metadata, does not provide an assessment of a country's statistical system. Such assessments help to determine the extent to which a country's system deviates from international guidelines and rate the data series being reviewed based on methodological soundness and other parameters.

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78. International Monetary Fund, "Ninth Review of the International Monetary Fund's Data Standards Initiatives" (Washington, DC: International Monetary Fund, May 2015), 43, <http://www.imf.org/external/np/pp/eng/2015/040615.pdf>.

79. United Nations, Department of Economic and Social Affairs, *International Merchandise Trade Statistics: Concepts and Definitions 2010*, ST/ESA/STAT/SER.M/52/Rev.3 (New York: Department of Economic and Social Affairs, United Nations, 2011), 8–11, [https://unstats.un.org/unsd/trade/eg-imts/IMTS%202010%20\(English\).pdf](https://unstats.un.org/unsd/trade/eg-imts/IMTS%202010%20(English).pdf).

80. "Myanmar Merchandise Trade," *General Data Dissemination System*, November 14, 2013, <http://dsbb.imf.org/pages/gdds/DQAFViewPage.aspx?ctycode=MMR&catcode=TEXM0&Type=DC>.

81. International Monetary Fund, "BPM6," 157; United Nations, Department of Economic and Social Affairs, *IMTS: Concepts and Definitions 2010*, 27–28.

Given the present limitations of Data ROSCs and GDDS metadata, we urge Myanmar to create an internal review process that determines the need for technical assistance from the IMF and ranks these technical assistance requests in order of priority (as determined by the Government of Myanmar). High-quality data covering a comprehensive range of statistical areas that are compiled in accordance with international guidelines and made available in a timely manner should be the objective of the CSO. The government gives the impression that it recognizes the crucial importance of reliable statistics.<sup>82</sup> To this end, we strongly encourage the government to seek technical assistance from the IMF, particularly in the areas of trade and balance of payments statistics, which are critical for monitoring and curtailing trade misinvoicing.

Technical assistance in other areas of statistics such as national accounts, prices, monetary, and fiscal statistics are necessary to devise informed public policy decisions and promote transparency. An IMF report found that “subscription to the Special Data Dissemination Standard (SDDS) reduces launch spreads by an average of 20 percent, while participation in the General Data Dissemination System (GDDS) reduces spreads for those countries with access to capital markets by an average of eight percent. These estimates correspond to discounts of some 50 and 20 basis points, respectively.”<sup>83</sup> Therefore, it is in the interest of Myanmar to improve the quality, timeliness, and coverage of statistics as a matter of urgent priority.

#### **iv. Smuggling and Black Market Trade**

Myanmar’s long-standing physical smuggling problem does not appear to be near its end. Satellite photos and the preliminary analysis earlier in the paper provide some insight into how and where physical smuggling takes place at the Myanmar-India border. However, a much more comprehensive study is needed to do a complete analysis of the physical and technical smuggling. The Government of Myanmar should consider pursuing such a study as it ramps up its physical smuggling enforcement tactics through mobile anti-smuggling teams and cross-border partnerships with China and Thailand. Additionally, implementing a real-time world market pricing system at Customs would help reduce technical smuggling, since this activity is done through trade misinvoicing. For example, a Burmese importer could under-invoice the amount of a good they are actually bringing into the country. While this represents an illicit financial inflow, it can also be characterized as technical smuggling: if the importer claims US\$6,000 of bicycles but actually brings in US\$10,000, US\$4,000 of bicycles would have entered Myanmar via technical smuggling. Access to real-time world market pricing data would help Customs mitigate this issue.

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82. International Monetary Fund, “Myanmar: Staff-Monitored Program,” IMF Country Report No. 13/13 (Washington, DC: International Monetary Fund, 2013), 31, <https://www.imf.org/external/pubs/ft/scr/2013/cr1313.pdf>.

83. John Cady and Anthony Pellechio, “Sovereign Borrowing Cost and the IMF’s Data Standards Initiatives,” IMF Working Paper WP/06/78 (Washington, DC: International Monetary Fund, March 2006), <https://www.imf.org/external/pubs/ft/wp/2006/wp0678.pdf>.

## Conclusion

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This case study on illicit financial flows and capital flight to and from Myanmar fills an important gap in empirical studies on the country. We were able to arrive at a number of interesting findings with policy implications in spite of significant data weaknesses. A longer coverage of more detailed data on trade, balance of payments, and national accounts compiled according to international guidelines would have allowed a more robust study. However, economists often have to contend with data weaknesses and carry out studies given data limitations. The following are the major findings of our study:

- Insularity, isolation, and instability have been three important features of Myanmar's political economy over the period 1960 to 2013. In addition, Myanmar has had significant governance deficits not only relative to the G7, but also vis-à-vis other developing countries and the regional ASEAN-5 group consisting of Indonesia, Malaysia, the Philippines, Singapore, and Thailand.
- The military junta that seized power in 1962 imposed isolationist policies. We argue that these isolationist policies tended to curb outward transfers of illicit capital, as the vast majority of the population had no effective way to communicate with the outside world to facilitate such transfers. Decades of isolation also made it difficult for the Burmese to settle abroad and make use of their illicit funds. We therefore find that outward illicit transfers are lower than inward illicit flows.
- Political crackdowns to quell dissent against military rule led to trade, financial, and diplomatic sanctions by the United States and the European Union. The immediate impact of the export sanctions was to create an excess demand for the sanctioned goods in Myanmar. The paper shows that the excess demand could be met partly by the under-invoicing of goods subject to export sanctions by Western countries. The data corroborate this analysis: import under-invoicing is the predominant method of transferring illicit capital into Myanmar.
- Illicit trade flows, both inward and outward, are smaller than their capital flight counterparts. Over the period 1960-2013, illicit inflows totaled US\$77.7 billion compared to unrecorded inward capital flows of US\$82.8 billion, while illicit outflows totaled US\$18.7 billion compared to outward capital flight of US\$35.9 billion. Although illicit outflows averaged US\$346 million per annum over this period, average illicit inflows were more than four times as large at US\$1.4 billion per annum. Most of the illicit inflows were driven by import under-invoicing.
- Unrecorded capital flows into Myanmar totaled US\$82.8 billion over the period 1960-2013, averaging about US\$1.5 billion per annum or roughly 15 percent of GDP. Such capital inflows, like illicit trade inflows, were driven mainly by import under-invoicing. Similar to the pattern observed in illicit flows, cumulative outward capital flight, totaling US\$35.9 billion, was significantly lower than inward transfers. The main reason why inward capital flows was significantly more than outward transfers is due to the fact that import under-invoicing was much larger than export under-invoicing or import over-invoicing.

- Unrecorded capital flows have been increasing throughout the period mainly as a result of import under-invoicing. In contrast, outward capital flight through trade misinvoicing has dropped to zero since 2005. The decrease in outward capital flight is not due to robust economic policies but to a sharp reduction in source of funds relative to use of funds as well as lower trading volumes. These outcomes were due to insular policies compounded by sanctions on external trade.
- Prior to sanctions, from 1960 to the middle of 1997, import under-invoicing totaled US\$17.4 billion. In the post-sanction period from the middle of 1997 to the middle of 2012, cumulative import under-invoicing totaled US\$27.6 billion (in 2010 dollars). On average, import under-invoicing occurred at the rate of US\$1.8 billion per sanction year compared to US\$463.0 million per non-sanction year.
- Myanmar lost at least US\$2.9 billion and as much as US\$3.6 billion in potential tax revenues through import under-invoicing and export under-invoicing. Both these techniques have the effect of understating taxable profits resulting in the under-payment of corporate taxes.
- The above tax loss due to illicit flows ranged from 122-172 percent of total health expenditures and from 48-73 percent of total education expenditures incurred during 1960-2013. The tax loss was 129 percent of health expenditures and 42 percent of education expenditures for the more recent period 2010-2013, when no export under-invoicing was detected.
- The underground economy is a good proxy for the state of overall governance in a country because its size in relation to GDP is inversely related to the state of governance; in countries where the underground economy is large the state of governance is weak, while in countries where it is small governance is typically strong. Using a currency demand approach modified to reflect the predominant role of smuggling and black markets in the Myanmar economy, we find that the underground economy averaged around 55 percent of official GDP—one of the highest in the world. The World Bank also found that the underground economy of Myanmar was around 50 percent of official GDP.

Our policy recommendations to the Government of Myanmar are as follows:

1. Develop an internal review process that determines the need for technical assistance from the IMF ranked in order of priority in order to improve the quality, timeliness, and coverage of statistics.
2. Make more meaningful progress on AML/CFT responsibilities in accordance with FATF and IMF guidelines.
3. Study physical and technical smuggling routes to form the basis of an organized and effective program to curtail these illegal transactions.
4. Move toward a real-time world market pricing risk analysis system to curtail trade misinvoicing.

## Appendix A. Methodology

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### (i) Trade Misinvoicing

Trade misinvoicing is calculated by comparing Myanmar's reported trade statistics with those of its trading partners. This approach was first implemented by Bhagwati and is carried out in two steps.<sup>84</sup> First, import c.i.f. data are converted to an f.o.b. basis using a freight and insurance factor of ten percent ( $r$  in the equations below), a standard factor used by the IMF's Direction of Trade Statistics (DOTS).<sup>85</sup> Once the conversion factor has been applied, the import and export discrepancies ( $ID$  and  $ED$ , respectively) are calculated using the following equations:

$$ID_{mp,t} = I_{mt/r} - X_{pt}$$
$$ED_{mp,t} = I_{pt/r} - X_{mt}$$

where:

$I_{mt}$  : Imports by Myanmar (denoted by  $m$  in this study) at time  $t$

$I_{pt}$  : Partner country  $p$ 's import from Myanmar at time  $t$

$X_{mt}$  : Myanmar's exports to partner country  $p$  at time  $t$

$X_{pt}$  : Partner country  $p$ 's export to Myanmar at time  $t$

A negative value of  $ID_{mp,t}$  indicates import under-invoicing (illicit inflows), and a positive value shows import over-invoicing (illicit inflows). Similarly, a negative values of  $ED_{mp,t}$  represents export over-invoicing (illicit inflows), while a positive value shows export under-invoicing (illicit outflows).

From 1960-1981, we make this estimation using bilateral trade data with individual advanced economies from the IMF's Direction of Trade Statistics (DOTS), then bump these figures up to a world level using the ratio at which Myanmar traded with these economies as compared to the world. From 1982, the estimation is done at a world level, comparing Myanmar-reported trade with the world as reported for publication in the IMF's International Financial Statistics (IFS) database against what the world reports as having traded with the country in the DOTS database. This methodological switch was necessary due to a lack of bilateral trade reporting by Myanmar to the IMF DOTS since 1981.

From 2000-2013, trade misinvoicing estimates are adjusted for entrepôt trade through Hong Kong, using re-export statistics from the Hong Kong Census and Statistics Department.<sup>86</sup>

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84. Jagdish N. Bhagwati, "On the Underinvoicing of Imports," in *Illegal Transactions in International Trade*, ed. Jagdish N. Bhagwati (Amsterdam: North-Holland Publishing Company, 1974), 138–47.

85. International Monetary Fund, "Direction of Trade Statistics."

86. The Government of Hong Kong Special Administrative Region, Census and Statistics Department, "Re-Export Trade Data, 2000-2013," 2015.

## **(ii) Leakages from the Balance of Payments: Hot Money Narrow (HMN) Method**

Leakages from the balance of payments are captured using the Hot Money Narrow (HMN) method, which is based on the Net Errors and Omissions (NEO) term in the IMF's Balance of Payments Statistics database. From 1960-1974, data is sourced from the 1979 International Financial Statistics Yearbook;<sup>87</sup> from 1975-2004, we use data from the Revision of the Balance of Payments Manual, 5th Edition, and;<sup>88</sup> the updated Balance of Payments Manual, 6th Edition is used from 2005-2013.<sup>89</sup>

The illicit financial outflow and inflow estimates are made by supplementing outward and inward leakages from the balance of payments with outflows and inflows due to trade misinvoicing.

## **(iii) World Bank Residual (WBR) Method**

The World Bank Residual Method estimates the gap between source of funds and use of funds of a country. There are two source of funds and two use of funds. The two source of funds are change in external debt (which will be positive if the country contracts new debt or negative if it pays off more debt than it receives in new loans) and net foreign direct investments (FDI). Net FDI is estimated as direct investments flows into a country minus such investments made by residents abroad. If a country receives more in FDI than it invests abroad, the net position is positive. However, if residents invest more abroad than foreigners invest in the country, the FDI position is negative. The two uses of funds are due to a country's current account balance and change in reserves. If a country has a current account deficit, then that constitutes a use since the deficit has to be financed. If on the other hand the country has a current account surplus, it provides capital to the rest of the world. Similarly, additions to reserves increase use while a drawdown from reserves adds to source of funds. The formula is:

$$\begin{array}{ccc} \text{(Source of Funds)} & & \text{(Use of Funds)} \\ K = [\Delta \text{ External Debt} + \text{FDI (net)}] & - & [\text{CA Deficit} + \Delta \text{ Reserves}] \end{array}$$

where  $K$  is capital flight and  $\Delta$  represents the change in the relevant variables.

The outward and inward capital flows estimates are made by supplementing outward and inward WBR estimates with outflows and inflows due to trade misinvoicing.

## **(iv) Myanmar Kyat – U.S. Dollar Currency Conversion**

The gap between Myanmar's official exchange rate to the U.S. dollar and the parallel black market rate widened significantly over the period of this study. To compensate for this, we convert kyat-denominated variables to U.S. dollar-terms using an effective exchange rate which blends the two.

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87. *International Financial Statistics Yearbook* (Washington, DC: International Monetary Fund, 1979), 120–121.

88. International Monetary Fund, "BPM5."

89. International Monetary Fund, "BPM6."



Following the IMF, this is derived by weighting the black market exchange rate at 92 percent and the official exchange rate at eight percent to attain an effective exchange rate.<sup>90</sup> From 1960-1989, monthly values from Luintel are averaged to create yearly estimates of the black market exchange rate.<sup>91</sup> This is then blended with the official rate reported to the IMF's International Financial Statistics database.<sup>92</sup> From 1990-2011, the effective exchange rate is derived directly from the "Gross domestic product, current prices (national currency)" and "Gross domestic product, current prices (U.S. dollars)" lines in the May 2001 and April 2015 World Economic Outlook databases by the IMF.<sup>93</sup> The same method is used for 2012 and 2013, when the Government of Myanmar switched to a floating official exchange rate in line with the black market rate.

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90. International Monetary Fund, "Myanmar: Staff-Monitored Program," 17.

91. Luintel, "Real Exchange Rate Behavior," 166, 175.

92. International Monetary Fund, "International Financial Statistics."

93. International Monetary Fund, "WEO Database: May 2001"; International Monetary Fund, "WEO Database: April 2015."



## Appendix B. Tables and Charts

**Appendix Table 1. The Components of Trade Misinvoicing**  
(in millions of constant 2010 U.S. dollars)

Year	Import Misinvoicing		Export Misinvoicing		Total Inflows (b+c)	Total Outflows (a+d)	Gross Trade Misinvoicing (a+b+c+d)
	Over-Invoicing (a)	Under-Invoicing (b)	Over-Invoicing (c)	Under-Invoicing (d)			
1960	60	149	39	239	188	299	487
1961	22	222	217	141	440	163	602
1962	27	144	70	173	214	200	414
1963	36	331	57	209	388	245	633
1964	161	210	28	177	238	338	576
1965	28	157	48	246	205	273	478
1966	28	272	34	169	306	197	503
1967	178	134	67	167	201	345	547
1968	13	365	47	108	412	121	533
1969	24	123	154	101	276	125	402
1970	50	145	30	142	175	193	367
1971	25	257	23	152	280	177	457
1972	10	342	43	131	385	141	526
1973	9	317	32	191	349	199	549
1974	17	195	9	214	204	231	435
1975	159	100	153	131	253	290	543
1976	33	153	55	160	208	194	402
1977	29	285	17	197	302	226	528
1978	50	340	298	120	637	170	807
1979	55	317	87	307	405	363	767
1980	339	160	120	247	280	586	866
1981	248	206	107	338	313	586	899
1982	0	866	0	26	866	26	892
1983	0	737	0	138	737	138	875
1984	0	561	0	265	561	265	826
1985	0	511	0	166	511	166	677
1986	0	506	0	198	506	198	704
1987	0	502	0	298	502	298	801
1988	0	617	0	400	617	400	1,017
1989	0	637	0	564	637	564	1,200
1990	0	1,173	0	344	1,173	344	1,517
1991	0	603	0	56	603	56	659
1992	0	561	0	67	561	67	627
1993	0	654	0	250	654	250	903
1994	0	896	0	33	896	33	929
1995	0	1,350	0	295	1,350	295	1,645
1996	0	1,731	0	358	1,731	358	2,089
1997	0	1,073	0	178	1,073	178	1,251
1998	424	0	160	0	160	424	583
1999	0	297	0	112	297	112	409
2000	0	837	0	153	837	153	990
2001	239	0	0	219	0	458	458
2002	0	811	701	0	1,513	0	1,513
2003	0	1,392	0	48	1,392	48	1,440
2004	0	1,456	0	619	1,456	619	2,075
2005	0	1,748	471	0	2,219	0	2,219
2006	0	1,389	407	0	1,796	0	1,796
2007	0	2,272	1,967	0	4,240	0	4,240
2008	0	2,386	1,049	0	3,434	0	3,434
2009	0	2,639	1,265	0	3,904	0	3,904
2010	0	4,693	2,684	0	7,377	0	7,377
2011	0	3,886	1,351	0	5,236	0	5,236
2012	0	6,533	1,132	0	7,665	0	7,665
2013	0	6,917	1,232	0	8,149	0	8,149
<b>Cumulative</b>	<b>2,266</b>	<b>55,156</b>	<b>14,155</b>	<b>8,849</b>	<b>69,311</b>	<b>11,115</b>	<b>80,426</b>
<b>Average</b>	<b>42</b>	<b>1,021</b>	<b>262</b>	<b>164</b>	<b>1,284</b>	<b>206</b>	<b>1,489</b>

**Appendix Table 2. Licit and Illicit Financial Flows**  
(in millions of constant 2010 U.S. dollars)

Year	World Bank Residual Method		Trade Misinvoicing		Hot Money Narrow		Broad Capital Flight (2+4)	Illicit Financial Inflows (3+5)	Illicit Financial Outflows (4+6)
	Inflows (1)	Outflows (2)	Inflows (3)	Outflows (4)	Inflows (5)	Outflows (6)			
1960	.	.	188	299	21	0	299	209	299
1961	.	.	440	163	0	39	163	440	201
1962	.	.	214	200	56	0	200	270	200
1963	.	.	388	245	53	0	245	440	245
1964	.	.	238	338	0	55	338	238	393
1965	.	.	205	273	204	0	273	409	273
1966	.	.	306	197	0	34	197	306	231
1967	.	.	201	345	184	0	345	385	345
1968	.	.	412	121	79	0	121	491	121
1969	.	.	276	125	129	0	125	405	125
1970	.	.	175	193	287	0	193	461	193
1971	.	.	280	177	174	0	177	454	177
1972	0	196	385	141	99	0	337	484	141
1973	208	199	349	199	0	12	399	349	211
1974	112	231	204	231	0	205	463	204	436
1975	0	332	253	290	148	0	622	401	290
1976	10	194	208	194	9	0	388	217	194
1977	160	226	302	226	0	16	453	302	242
1978	0	243	637	170	0	85	413	637	255
1979	298	363	405	363	0	31	725	405	393
1980	0	646	280	586	16	0	1,232	296	586
1981	493	586	313	586	0	62	1,172	313	648
1982	255	26	866	26	57	0	53	923	26
1983	0	149	737	138	148	0	287	885	138
1984	0	288	561	265	27	0	553	588	265
1985	97	166	511	166	75	0	332	586	166
1986	0	1,155	506	198	128	0	1,353	634	198
1987	0	918	502	298	26	0	1,217	529	298
1988	0	750	617	400	202	0	1,149	819	400
1989	336	564	637	564	87	0	1,128	723	564
1990	209	344	1,173	344	34	0	688	1,207	344
1991	0	714	603	56	0	85	770	603	142
1992	0	626	561	67	28	0	693	589	67
1993	0	971	654	250	0	16	1,221	654	265
1994	0	508	896	33	0	16	541	896	49
1995	0	1,580	1,350	295	0	24	1,875	1,350	319
1996	1,550	358	1,731	358	0	17	717	1,731	375
1997	462	178	1,073	178	0	38	356	1,073	216
1998	406	424	160	424	28	0	848	187	424
1999	0	340	297	112	0	18	452	297	130
2000	0	880	837	153	0	33	1,033	837	186
2001	250	458	0	458	0	20	915	0	477
2002	0	691	1,513	0	0	27	691	1,513	27
2003	0	667	1,392	48	0	104	716	1,392	153
2004	0	1,554	1,456	619	0	178	2,173	1,456	797
2005	0	742	2,219	0	0	709	742	2,219	709
2006	0	629	1,796	0	0	702	629	1,796	702
2007	0	359	4,240	0	0	359	359	4,240	359
2008	0	1,905	3,434	0	0	1,327	1,905	3,434	1,327
2009	0	1,108	3,904	0	0	1,079	1,108	3,904	1,079
2010	0	2,480	7,377	0	0	2,132	2,480	7,377	2,132
2011	120	0	5,236	0	0	126	0	5,236	126
2012	6,344	0	7,665	0	5,360	0	0	13,024	0
2013	2,175	0	8,149	0	733	0	0	8,882	0
<b>Cumulative</b>	<b>13,483</b>	<b>24,750</b>	<b>69,311</b>	<b>11,115</b>	<b>8,389</b>	<b>7,547</b>	<b>35,865</b>	<b>77,700</b>	<b>18,662</b>
<b>Average</b>	<b>321</b>	<b>589</b>	<b>1,284</b>	<b>206</b>	<b>155</b>	<b>140</b>	<b>664</b>	<b>1,439</b>	<b>346</b>

Note: World Bank Residual calculations begin in 1972 due to data constraints

**Appendix Table 3. Illicit Financial Outflows to GDP and Trade**  
*(in millions of constant 2010 U.S. dollars or percent)*

Year	Illicit Financial Outflows	GDP	Total Trade	Illicit Financial Outflows to GDP	Illicit Financial Outflows to Total Trade
1960	299	3,226	2,746	9.26%	10.88%
1961	201	4,326	2,461	4.66%	8.19%
1962	200	4,487	2,725	4.45%	7.33%
1963	245	3,868	2,856	6.34%	8.59%
1964	393	3,145	2,852	12.51%	13.80%
1965	273	2,520	2,600	10.85%	10.52%
1966	231	1,871	1,900	12.37%	12.18%
1967	345	2,403	1,494	14.36%	23.11%
1968	121	3,193	1,162	3.80%	10.45%
1969	125	2,959	1,539	4.24%	8.15%
1970	193	2,600	1,293	7.41%	14.91%
1971	177	2,552	1,416	6.92%	12.47%
1972	141	2,945	1,195	4.80%	11.84%
1973	211	3,277	972	6.44%	21.72%
1974	436	4,016	1,281	10.85%	34.03%
1975	290	3,579	1,291	8.10%	22.46%
1976	194	4,111	1,168	4.72%	16.60%
1977	242	2,812	1,359	8.61%	17.81%
1978	255	2,722	2,072	9.35%	12.29%
1979	393	2,405	2,258	16.36%	17.42%
1980	586	2,308	2,469	25.40%	23.74%
1981	648	2,248	2,392	28.82%	27.08%
1982	26	2,782	1,493	0.95%	1.77%
1983	138	2,804	1,190	4.93%	11.62%
1984	265	2,604	971	10.18%	27.29%
1985	166	2,655	1,048	6.25%	15.84%
1986	198	3,214	1,092	6.16%	18.13%
1987	298	3,276	875	9.11%	34.11%
1988	400	3,124	707	12.80%	56.52%
1989	564	4,883	660	11.55%	85.37%
1990	344	4,431	945	7.77%	36.40%
1991	142	3,769	1,689	3.76%	8.38%
1992	67	4,231	1,864	1.57%	3.57%
1993	265	4,877	2,175	5.44%	12.19%
1994	49	6,319	2,583	0.78%	1.90%
1995	319	8,125	3,237	3.93%	9.86%
1996	375	7,169	3,045	5.23%	12.32%
1997	216	6,741	4,204	3.20%	5.13%
1998	424	11,066	5,539	3.83%	7.65%
1999	130	14,419	5,042	0.90%	2.59%
2000	186	14,304	5,555	1.30%	3.34%
2001	477	10,290	7,169	4.64%	6.66%
2002	27	11,019	7,522	0.24%	0.35%
2003	153	16,155	6,056	0.95%	2.52%
2004	797	15,360	5,705	5.19%	13.97%
2005	709	16,235	6,672	4.37%	10.63%
2006	702	18,766	7,936	3.74%	8.84%
2007	359	24,920	10,164	1.44%	3.53%
2008	1,327	33,665	10,853	3.94%	12.23%
2009	1,079	40,668	11,762	2.65%	9.17%
2010	2,132	49,628	13,421	4.30%	15.89%
2011	126	51,611	16,775	0.24%	0.75%
2012	0	50,953	16,474	0.00%	0.00%
2013	0	51,548	21,138	0.00%	0.00%
<b>Cumulative</b>	<b>18,662</b>	<b>569,185</b>	<b>227,062</b>	<b>.</b>	<b>.</b>
<b>Average</b>	<b>346</b>	<b>10,540</b>	<b>4,205</b>	<b>6.52%</b>	<b>14.52%</b>

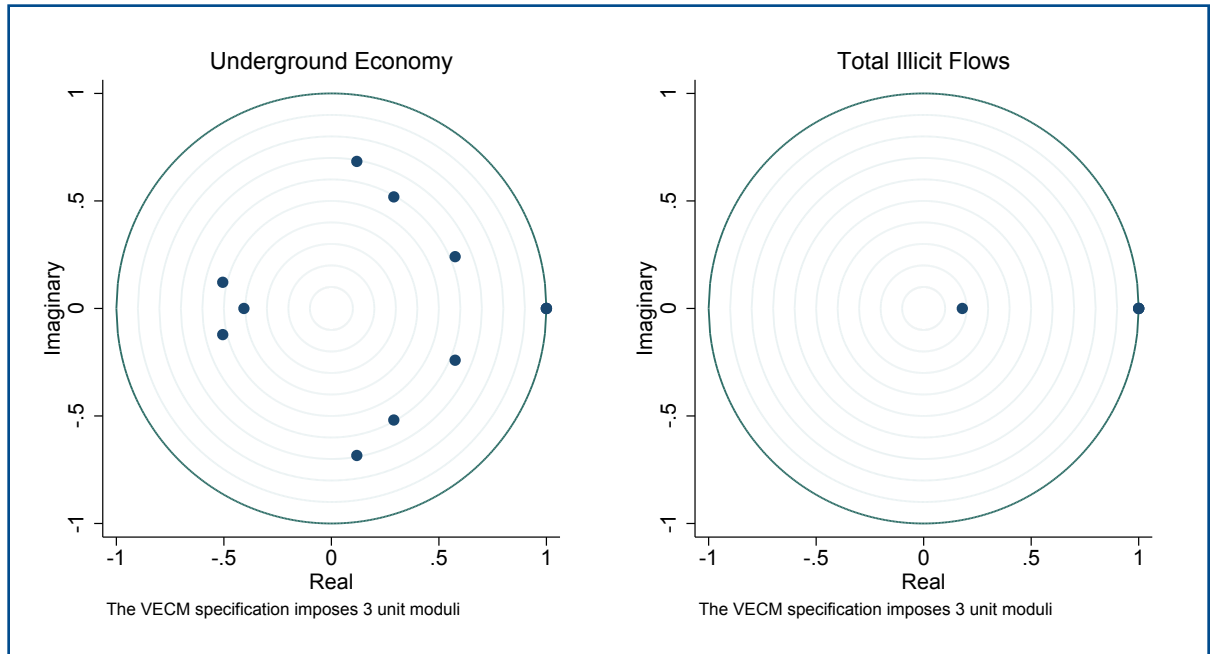
**Appendix Table 4. Illicit Financial Inflows to GDP and Trade**  
(in millions of constant 2010 U.S. dollars or percent)

Year	Illicit Financial Inflows	GDP	Total Trade	Illicit Financial Inflows to GDP	Illicit Financial Inflows to Total Trade
1960	209	3,226	2,746	6.49%	7.62%
1961	440	4,326	2,461	10.16%	17.87%
1962	270	4,487	2,725	6.03%	9.92%
1963	440	3,868	2,856	11.39%	15.42%
1964	238	3,145	2,852	7.56%	8.34%
1965	409	2,520	2,600	16.22%	15.73%
1966	306	1,871	1,900	16.36%	16.11%
1967	385	2,403	1,494	16.02%	25.76%
1968	491	3,193	1,162	15.39%	42.30%
1969	405	2,959	1,539	13.68%	26.30%
1970	461	2,600	1,293	17.74%	35.69%
1971	454	2,552	1,416	17.77%	32.03%
1972	484	2,945	1,195	16.43%	40.50%
1973	349	3,277	972	10.66%	35.93%
1974	204	4,016	1,281	5.07%	15.90%
1975	401	3,579	1,291	11.22%	31.08%
1976	217	4,111	1,168	5.27%	18.55%
1977	302	2,812	1,359	10.74%	22.22%
1978	637	2,722	2,072	23.41%	30.76%
1979	405	2,405	2,258	16.82%	17.92%
1980	296	2,308	2,469	12.81%	11.98%
1981	313	2,248	2,392	13.92%	13.08%
1982	923	2,782	1,493	33.17%	61.82%
1983	885	2,804	1,190	31.55%	74.36%
1984	588	2,604	971	22.59%	60.56%
1985	586	2,655	1,048	22.07%	55.88%
1986	634	3,214	1,092	19.72%	58.05%
1987	529	3,276	875	16.14%	60.42%
1988	819	3,124	707	26.20%	115.71%
1989	723	4,883	660	14.81%	109.52%
1990	1,207	4,431	945	27.25%	127.69%
1991	603	3,769	1,689	16.01%	35.72%
1992	589	4,231	1,864	13.92%	31.58%
1993	654	4,877	2,175	13.40%	30.05%
1994	896	6,319	2,583	14.18%	34.68%
1995	1,350	8,125	3,237	16.61%	41.70%
1996	1,731	7,169	3,045	24.15%	56.86%
1997	1,073	6,741	4,204	15.92%	25.54%
1998	187	11,066	5,539	1.69%	3.38%
1999	297	14,419	5,042	2.06%	5.89%
2000	837	14,304	5,555	5.85%	15.06%
2001	0	10,290	7,169	0.00%	0.00%
2002	1,513	11,019	7,522	13.73%	20.11%
2003	1,392	16,155	6,056	8.62%	22.98%
2004	1,456	15,360	5,705	9.48%	25.52%
2005	2,219	16,235	6,672	13.67%	33.26%
2006	1,796	18,766	7,936	9.57%	22.64%
2007	4,240	24,920	10,164	17.01%	41.72%
2008	3,434	33,665	10,853	10.20%	31.64%
2009	3,904	40,668	11,762	9.60%	33.19%
2010	7,377	49,628	13,421	14.86%	54.97%
2011	5,236	51,611	16,775	10.15%	31.22%
2012	13,024	50,953	16,474	25.56%	79.06%
2013	8,882	51,548	21,138	17.23%	42.02%
<b>Cumulative</b>	<b>77,700</b>	<b>569,185</b>	<b>227,062</b>	<b>.</b>	<b>.</b>
<b>Average</b>	<b>1,439</b>	<b>10,540</b>	<b>4,205</b>	<b>14.41%</b>	<b>35.81%</b>

**Appendix Table 5. Myanmar's Underground Economy, 1960-2013**  
*(in millions of constant 2010 U.S. dollars or percent of GDP)*

Year	Underground Economy	
	millions of U.S. dollars, real 2010	percent of GDP
1960	1,174	36.4%
1961	1,938	44.8%
1962	1,845	41.1%
1963	1,337	34.6%
1964	1,201	38.2%
1965	1,314	52.1%
1966	1,108	59.2%
1967	1,494	62.2%
1968	1,984	62.1%
1969	1,849	62.5%
1970	1,519	58.4%
1971	1,378	54.0%
1972	1,281	43.5%
1973	1,369	41.8%
1974	1,426	35.5%
1975	1,302	36.4%
1976	2,267	55.2%
1977	1,795	63.8%
1978	1,518	55.8%
1979	1,415	58.8%
1980	1,629	70.6%
1981	1,530	68.0%
1982	1,929	69.3%
1983	1,940	69.2%
1984	1,672	64.2%
1985	1,567	59.0%
1986	1,396	43.4%
1987	2,290	69.9%
1988	2,310	73.9%
1989	3,584	73.4%
1990	2,963	66.9%
1991	2,472	65.6%
1992	2,559	60.5%
1993	2,765	56.7%
1994	3,979	63.0%
1995	4,986	61.4%
1996	3,257	45.4%
1997	2,698	40.0%
1998	4,592	41.5%
1999	4,851	33.6%
2000	3,843	26.9%
2001	2,886	28.0%
2002	4,424	40.2%
2003	11,273	69.8%
2004	9,219	60.0%
2005	10,144	62.5%
2006	11,974	63.8%
2007	17,438	70.0%
2008	27,950	83.0%
2009	27,067	66.6%
2010	30,316	61.1%
2011	29,804	57.7%
2012	25,297	49.6%
2013	21,635	42.0%
<b>Average</b>	<b>5,903</b>	<b>55.1%</b>

## Appendix Chart 1. Stability Tests for VECMs





## References

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- Asia/Pacific Group on Money Laundering. "APG Mutual Evaluation Report on Myanmar: Against the FATF 40 Recommendations (2003) and 9 Special Recommendations." Asia/Pacific Group on Money Laundering, July 10, 2008. <http://www.apgml.org/members-and-observers/members/member-documents.aspx?m=e0e77e5e-c50f-4cac-a24f-7fe1ce72ec62>.
- Bhagwati, Jagdish N. "On the Underinvoicing of Imports." In *Illegal Transactions in International Trade*, edited by Jagdish N. Bhagwati, 138–47. Amsterdam: North-Holland Publishing Company, 1974.
- Brambila-Macias, Jose, and Guido Cazzavillan. "The Dynamics of Parallel Economies: Measuring the Informal Sector in Mexico." *Research in Economics* 63, no. 3 (2009): 189–99.
- Cady, John, and Anthony Pellechio. "Sovereign Borrowing Cost and the IMF's Data Standards Initiatives." IMF Working Paper WP/06/78. Washington, DC: International Monetary Fund, March 2006. <https://www.imf.org/external/pubs/ft/wp/2006/wp0678.pdf>.
- Claessens, Stijn, and David Naudé. "Recent Estimates of Capital Flight." Policy Research Working Paper Series No. 1186. Washington, DC: Debt and International Finance Division, International Economics Department, World Bank, 1993.
- Cumby, Robert E., and John Huizinga. "Testing the Autocorrelation Structure of Disturbances in Ordinary Least Squares and Instrumental Variables Regressions." *Econometrica* 60, no. 1 (January 1992): 185–95.
- Financial Action Task Force. "FATF Public Statement: 27 February 2015." Press Release, February 27, 2015. <http://www.fatf-gafi.org/countries/j-m/myanmar/documents/public-statement-february-2015.html>.
- Fuller, Thomas. "Profits from Illicit Drug Trade at Root of Myanmar's Boom." *The New York Times*. June 5, 2015. <http://www.nytimes.com/2015/06/06/world/asia/profits-from-illicit-drug-trade-at-root-of-myanmars-boom.html>.
- Hazarika, Sanjoy. "India Reports Drug Smuggling on Burmese Border." *The New York Times*, June 10, 1990. <http://www.nytimes.com/1990/06/10/world/india-reports-drug-smuggling-on-burmese-border.html>.
- Hsu Mon, Kyaw. "Smuggling Across Borders with China, Thailand Rising: Minister." *The Irrawaddy*, January 21, 2015. <http://www.irrawaddy.org/business/smuggling-across-borders-china-thailand-rising-minister.html>.
- International Monetary Fund. *Annual Report on Exchange Arrangements and Exchange Restrictions 2014*. Washington, DC: International Monetary Fund, 2014. <http://www.imf.org/external/pubs/nft/2014/areaers/ar2014.pdf>.

- . “Balance of Payments and International Investment Position Manual, 6th Ed.” Washington, DC: International Monetary Fund, 2009. <https://www.imf.org/external/pubs/ft/bop/2007/pdf/bpm6.pdf>.
- . “Direction of Trade Statistics (DOTS).” [Online Database]. Accessed May 6, 2015. <http://elibrary-data.imf.org/FindDataReports.aspx?d=33061&e=170921>.
- . “International Financial Statistics (IFS).” [Online Database]. Accessed May 6, 2015. <http://elibrary-data.imf.org/FindDataReports.aspx?d=33061&e=169393>.
- . “Myanmar: Staff-Monitored Program.” IMF Country Report No. 13/13. Washington, DC: International Monetary Fund, 2013. <https://www.imf.org/external/pubs/ft/scr/2013/cr1313.pdf>.
- . “Myanmar: Staff Report for the 2014 Article IV Consultation.” In *Myanmar: 2014 Article IV Consultation--Staff Report; Press Release; and Statement by the Executive Director for Myanmar*. IMF Country Report No. 14/307. Washington, DC: International Monetary Fund, 2014. <http://www.imf.org/external/pubs/ft/scr/2014/cr14307.pdf>.
- . “Ninth Review of the International Monetary Fund’s Data Standards Initiatives.” Washington, DC: International Monetary Fund, May 2015. <http://www.imf.org/external/np/pp/eng/2015/040615.pdf>.
- . “Revision of the Balance of Payments Manual, 5th Ed.” Washington, DC: International Monetary Fund, 2007.
- . “World Economic Outlook Database: April 2015 Edition.” [Online Database], April 14, 2015. <https://www.imf.org/external/pubs/ft/weo/2015/01/weodata/index.aspx>.
- . “World Economic Outlook Database: May 2001 Edition.” [Online Database], April 26, 2001. <http://www.imf.org/external/pubs/ft/weo/2001/01/>.
- Johansen, Søren. *Likelihood-Based Inference in Cointegrated Vector Autoregressive Models*. Oxford, UK: Oxford University Press, 1997.
- Kar, Dev. *The Drivers and Dynamics of Illicit Financial Flows from India: 1948-2008*. Washington, DC: Global Financial Integrity, 2010.
- Kar, Dev, and Brian LeBlanc. *Illicit Financial Flows to and from the Philippines: A Study in Dynamic Simulation, 1960-2011*. Washington, DC: Global Financial Integrity, 2014.
- Kubo, Koji. “Trade Policies and Trade Misreporting in Myanmar.” *ASEAN Economic Bulletin* 29, no. 2 (August 2012): 146–59.
- Lagarde, Christine. “Empowerment - the Amartya Sen Lecture.” Speech, London, June 6, 2014. <http://www.imf.org/external/np/speeches/2014/060614.htm>.

- Luintel, Kul B. "Real Exchange Rate Behavior: Evidence from Black Markets." *Journal of Applied Econometrics* 15, no. 2 (2000): 161–85.
- Organization for Economic Co-operation and Development. *OECD Investment Policy Reviews: Myanmar 2014*. Paris: OECD, 2014. <http://www.oecd.org/daf/inv/investment-policy/Myanmar-IPR-2014.pdf>.
- PricewaterhouseCoopers. "Paying Taxes 2014: The Global Picture." London: PricewaterhouseCoopers, 2013. <http://www.pwc.com/gx/en/paying-taxes/assets/pwc-paying-taxes-2014.pdf>.
- Schneider, Friedrich, Andreas Buehn, and Claudio E. Montenegro. "Shadow Economies All over the World: New Estimates for 162 Countries from 1999 to 2007." Policy Research Working Paper No. 5356. Washington, DC: World Bank, 2010.
- "Silk Road Smuggling." *The Economist*, November 28, 2014. <http://www.economist.com/news/china/21635143-china-struggles-contraband-its-neighbours-bordering-crime>.
- Simon, Scott. "People-Smuggling Is Big Business In Myanmar." *Weekend Edition Saturday*. National Public Radio, May 23, 2015. <http://www.npr.org/2015/05/23/408996476/people-smuggling-is-big-business-in-myanmar>.
- Tanzi, Vito. "The Underground Economy in the United States: Annual Estimates, 1930-80." *Staff Papers (International Monetary Fund)* 30, no. 2 (1983): 283–305.
- "Tariff Rate, Applied, Simple Mean, All Products (%)." The World Bank. *World Development Indicators*. Accessed May 6, 2015. <http://data.worldbank.org/indicator/TM.TAX.MRCH.SM.AR.ZS>.
- The Government of Hong Kong Special Administrative Region, Census and Statistics Department. "Re-Export Trade Data, 2000-2013," 2015.
- Thein, Myat. "Economic Development of Myanmar." Singapore: Institute of Southeast Asian Studies, 2004.
- The World Bank. *Doing Business 2015: Going Beyond Efficiency*. 12th ed. Washington, DC: The World Bank, 2014. <http://www.doingbusiness.org/~media/GIAWB/Doing%20Business/Documents/Annual-Reports/English/DB15-Full-Report.pdf>.
- Transparency International. "Corruption Perceptions Index 2010." Berlin: Transparency International, 2010. <http://www.transparency.org/cpi2010/results>.
- Turnell, Sean. "Fundamentals of Myanmar's Macroeconomy: A Political Economy Perspective." *Asian Economic Policy Review* 6, no. 1 (2011): 136–53. doi:10.1111/j.1748-3131.2011.01190.x.

- . “Myanmar’s Fifty-Year Authoritarian Trap.” *Journal of International Affairs* 65, no. 1 (2011): 79–92.
- United Nations. “United Nations Commodity Trade Statistics Database (Comtrade).” [Online Database]. Accessed May 6, 2015. <http://comtrade.un.org/db/>.
- United Nations Children’s Fund (UNICEF). *Snapshot of Social Sector Public Budget Allocations and Spending in Myanmar*. Yangon: UNICEF, 2013. [http://www.unicef.org/myanmar/Final\\_Budget\\_Allocations\\_and\\_Spending\\_in\\_Myanmar.pdf](http://www.unicef.org/myanmar/Final_Budget_Allocations_and_Spending_in_Myanmar.pdf).
- United Nations, Department of Economic and Social Affairs. *International Merchandise Trade Statistics: Concepts and Definitions 2010*. ST/ESA/STAT/SER.M/52/Rev.3. New York: Department of Economic and Social Affairs, United Nations, 2011. [https://unstats.un.org/unsd/trade/eg-imts/IMTS%202010%20\(English\).pdf](https://unstats.un.org/unsd/trade/eg-imts/IMTS%202010%20(English).pdf).
- United Nations Office on Drugs and Crime. *World Drug Report 2014*. New York: United Nations Office on Drugs and Crime, 2014. [http://www.unodc.org/documents/wdr2014/World\\_Drug\\_Report\\_2014\\_web.pdf](http://www.unodc.org/documents/wdr2014/World_Drug_Report_2014_web.pdf).
- U.S. Department of the Treasury, Office of Foreign Assets Control. *Burma Sanctions Program*. Washington, DC: Office of Foreign Assets Control, 2014. <http://www.treasury.gov/resource-center/sanctions/Documents/burma.pdf>.
- Vo, Duc Hong, and Thinh Hung Ly. “Measuring the Shadow Economy in the ASEAN Nations: The MIMIC Approach.” *International Journal of Economics and Finance* 6, no. 10 (September 25, 2014): 139–48.
- Winston, Set Aung. “Informal Trade and Underground Economy in Myanmar: Costs and Benefits.” Occasional Paper Observatory Series 04. Bangkok: Research Institute on Contemporary Southeast Asia (IRASEC), 2011. <http://www.irasec.com/ouvrage.php?id=23>.
- World Trade Organization. “Trade Policy Review: Myanmar, Report by the Government.” WT/TPR/G/293. Geneva: World Trade Organization, January 21, 2014. [https://www.wto.org/english/tratop\\_e/tpr\\_e/g293\\_e.pdf](https://www.wto.org/english/tratop_e/tpr_e/g293_e.pdf).
- . “Trade Policy Review: Myanmar, Report by the Secretariat.” WT/TPR/S/293. Geneva: World Trade Organization, January 21, 2014. [https://www.wto.org/english/tratop\\_e/tpr\\_e/s293\\_e.pdf](https://www.wto.org/english/tratop_e/tpr_e/s293_e.pdf).

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## Authors

**Dev Kar** is the Chief Economist at Global Financial Integrity. Prior to joining GFI, Dr. Kar was a Senior Economist at the International Monetary Fund (IMF), Washington DC. During a career spanning nearly 32 years at the IMF, he worked on a wide variety of macroeconomic and statistical issues, both at IMF headquarters and on different types of IMF missions to member countries (technical assistance, Article IV Consultations with member countries, and Use of IMF Resources). He has published a number of articles on macroeconomic and statistical issues both inside and outside the IMF. Dr. Kar has a Ph.D. in Economics (Major: Monetary Economics) and an M. Phil (Economics) (Major: International Economics) from the George Washington University and an M.S. (Computer Science) from Howard University (Major: Database Management Systems). His undergraduate degree in Physics is from St. Xavier's College, University of Calcutta, India.

**Joseph Spanjers** is a Junior Economist at Global Financial Integrity. Prior to joining GFI, Joseph conducted international trade research in Minneapolis and supervised a State Department scholarship program in Morocco. Joseph received a BS in Economics and a BA in Global Studies from the University of Minnesota.

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GLOBAL FINANCIAL INTEGRITY

1100 17th Street, NW, Suite 505 | Washington, DC | 20036 | USA  
Tel. +1 (202) 293-0740 | Fax. +1 (202) 293-1720 | [www.gfintegrity.org](http://www.gfintegrity.org)

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