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Trade Policies and Trade Mis-reporting in Myanmar

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Abstract

While the trade statistics of Myanmar show surpluses for 2007 through 2010, the corresponding statistics of trade partner countries indicate deficits. Such discrepancies in mirror trade statistics are analyzed in connection with the 'export-first and import-second' policy provisioning import permissions on permission applicants possessing a sufficient amount of the export-tax-deducted export earnings. Under this policy, the recorded imports and exports of the private sector have been maintaining equilibrium, whereas discrepancies in the mirror statistics have fluctuated. This suggests that traders adjusted mis-reporting in accordance with the supply and demand of the export earnings.

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Trade Policies and Trade Mis-reporting in Myanmar[1]

1. Introduction

The Government of Myanmar introduced various restrictive controls on trade in order to manage scarce foreign exchange in the 1990s. One of such controls is the so-called 'export-first and import-second' policy that provisions the issuance of import licenses on the possession of a sufficient amount of export-tax-deducted export earnings to cover the import bill. This policy might have prompted traders to adjust mis-reporting of trade in accordance with the supply and demand for export earnings. This paper analyzes how Myanmar trade policies provided traders with incentives to mis-report trade, and examines the extent of mis-reporting.

This paper employs the mirror statistics of Myanmar's exports and imports to examine the extent of mis-reporting. The mirror statistics are the sets of Myanmar's trade records and the corresponding records of trade partner countries. The causes of discrepancies in mirror statistics can be divided broadly into two categories: technical factors such as time lags in reporting on the one hand, and false declarations and smuggling by traders on the other[2]. Following the literature on trade mis-invoicing (Fisman and Wei, 2004; Yalta and Demir, 2010), it is assumed that the trade statistics of Myanmar's trade partners are accurate, and that the incentive factors are dominant causes of the discrepancies. With these assumptions, this paper regards the discrepancies in the mirror statistics as an indication of mis-reporting by Myanmar traders.

Literature on the opportunistic responses of traders to trade policies is on the increase. The most extensively analyzed issue is evasion of import duties (Fisman and Wei, 2004; Javorcik and Narciso, 2008; Mishra et al., 2008). Using commodity-level data, these studies presented the correlation between the import tariff rates and the discrepancies in mirror statistics as supportive evidence of tax evasion. In addition, Yalta and Demir (2010) found that the export subsidies induced over-invoicing of exports in Turkey. Biswas and Marjit (2005) presented an analysis that shows the impacts of the dual

[2] Hamanaka (2011a: 601-603) provides an extensive list on the causes of discrepancies in the mirror data.

exchange rate as implicit import subsidies and as implicit export tax in India. Where trade policies differ, so do the responses of traders. The present paper contributes to this literature by offering a case study of Myanmar trade policies.

The inaccuracy of trade statistics might lead the policymakers to develop erroneous economic policies. While the trade statistics of Myanmar show trade surpluses for 2007 through 2010, the trade balance for Myanmar in the *Direction of Trade Statistics* of the International Monetary Fund (IMF) has been in deficit for the same period. Detecting the causes of the discrepancies in the trade statistics and correcting the incentives for traders to mis-report, if any, would improve the accuracy of trade statistics and add to better policy formation.

The remainder of the paper is organized as follows. Section II presents an overview of the trade policies of Myanmar, and clarifies their possible impacts on incentives for traders to mis-report. Section III presents hypotheses on trade mis-reporting behaviors of both exporters and importers in reaction to the trade policies. Section IV examines the hypotheses using the mirror statistics of both the aggregated data and the disaggregated data for each trade partner country. Section V summarizes the analyses and presents policy options for trade reform.

II. Trade Policies and Incentives to Mis-report Trade

II.1 Trade Policies[3]
This subsection overviews trade policies of Myanmar, and then discusses the impacts of such policies on incentives for traders to mis-report trade. Here, mis-reporting includes under- or over-invoicing of exports and imports on the one hand, and smuggling on the other. Smuggling refers to imports and exports that do not undergo clearance at Myanmar Customs.

Administrative controls on trade differ between the private and public sectors. State economic enterprises (SEEs) are integrated with the state budget, and their foreign trade is centrally controlled by the government. Their imports are financed with the allocation of foreign exchange from the state budget. Their export revenues have to be surrendered to the state budget. Given their integrality in the state budget, it might be appropriate to consider that the public sector has less incentive to mis-report trade to Myanmar

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[3] Since Myanmar's new government took office in March 2011, substantial reforms in economic policies, including trade policies, are ongoing. The description of trade policies in this subsection refers to the condition prior to March 2011.

Customs. In addition, they are exempted from trade taxes and duties.

While Myanmar practices a multiple exchange rate system[4], the official exchange rate is applied only within the public sector. The private sector has no allocation of foreign exchange at the official exchange rate, or the surrender requirement on export earnings. The foreign exchange market is effectively segmented between the private and public sectors (Hori and Wong, 2008).

The government applies various trade restrictions only to the private sector. Controls on exports consist of (i) export licensing, and (ii) export taxes. All exports are subject to licensing with conditionality. Export licenses have been issued on condition that payments are remitted via Myanmar state banks. In addition, commodities like precious stones, rice, sesame, and teakwood have been prohibited from exporting or licenses have been strictly controlled in favor of the public sector and the cronies[5].

Export earnings of the private sector are subject to a 10 percent export tax, which consists of a commercial tax of 8 percent and an income tax of 2 percent[6]. The export tax is collected in foreign currency when export earnings are remitted to state banks. After the deduction of the export tax, exporters are permitted to maintain the export earnings as foreign currency deposits (FCDs) at state banks. Since the foreign exchange regulation prohibits Myanmar people from holding foreign currency, it is the right as well as the duty of exporters to maintain their export earnings as FCDs. While informal holding of foreign currency has been tolerated and widespread, it cannot be deposited as FCD at state banks.

On the other hand, controls on imports include (i) import licensing, and (ii) import duties. All imports of the private sector are subject to licensing with conditionality. First, since July 1997, as a general rule, import licenses have been issued on condition that applicants possess sufficient export-tax-deducted export earnings to cover imports bills. For an applicant without export earnings, the government curtailed the amount of import license to USD50,000 per month[7]. This ceiling was reduced incrementally to USD30,000 in January 1999, and to USD10,000 in August 2000 (Kudo and Mieno, 2009: 108). Imports without the export earnings became virtually impossible thereafter. This policy is often called the 'export-first and import-second' policy.

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[4] As of January 2012, the official exchange rate is around 5.3 kyat per US dollar, while the prevalent parallel market exchange rate is 800 kyat per US dollar.
[5] These are listed in the Minister's Office Order of the Ministry of Commerce, No.10/99, November 1999.
[6] In consideration of the sharp appreciation of the local currency against the US dollar, the government temporarily suspended export tax for six months from September 2011.
[7] For such a case, an importer opens a letter of credit at state banks with foreign exchange certificates (FEC).

Import license applicants obtain the export-tax-deducted export earnings from either own exports or purchasing from exporters through account transfers of FCDs. The export earnings with proof of the payment of the export tax are traded in the private sector at competitive prices. In fact, the export earnings are traded in the parallel foreign exchange market with a mark-up over the price of the informally held foreign currency.

Second, the Ministry of Commerce proclaimed the Minister's Office Order No.4/98 in March 1998 to restrict the imports of consumption goods. Commodities were classified into two groups: essentials of List A, mainly capital goods and industrial raw materials, and non-essentials of List B, mostly consumption goods. Then, the Ministry provisioned the issuance of licenses on applicants importing at least 80 percent of the total from List A, and less than 20 percent from List B. While there has been no official announcement, this regulation is believed to have been invalidated since April 2005.

Third, there are some items such as vehicles and fuel oil, and edible oil of which imports are prohibited or import licenses are tightly controlled. For example, the public sector used to monopolize the imports of fuel oil and imposed rationing on distribution until the deregulation in 2010.

Import duties consist of tariffs and specific duties. As of 2003, the simple average applied tariff rate in nominal terms was 6.1 percent (Mizuno 2007), and the maximum tariff rate, applied to automobiles, was 40 percent. These figures are lower compared to neighboring Thailand. Nonetheless, on top of import tariffs, specific duties are levied on imported goods at Customs. The tax rate of specific duties for most imported goods is 25 percent. While there is no discrimination of specific duties between imported and domestically produced goods, tax collection on imported goods at Customs is easier than on domestically produced goods.

For calculation of import duties, Myanmar Customs use an overvalued official exchange rate for valuing imported goods, so that the effective rate of import duties is much lower than the nominal rate. For example, when the prevalent parallel market rate was around 1,000 kyat per US dollar in August 2010, the valuation rate was at 450 kyat, which more than halved the effective tax rate. Discretionary adjustments of the valuation rate caused sharp rises in the effective rate of import duties in June 1996 and June 2004[8]. Besides, the overvalued valuation rate in principle has lowered the effective rate of import duties.

The differences in administrative controls between the public and private sectors warrant focusing on the private sector in the subsequent analysis.

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[8] The valuation rate was raised from the official exchange rate of 5.91 kyat per US dollar to 100 kyat in June 1996 (Mizuno, 2007: 44) and to 450 kyat in June 2004.

II.2 Incentive to Mis-report Trade

These restrictive trade policies on the private sector are expected to provide traders with complex incentives for mis-reporting. First, export taxes and import duties would provide both exporters and importers with incentives to under-invoice and smuggle. For those countries like Turkey where the government grants export subsidies, exporters have incentives to over-invoice (Yalta and Demir, 2010). The export tax in Myanmar would work in the opposite way.

Second, prohibition and tight licensing of both exports and imports would stimulate smuggling. For example, the government in principle prohibited the private sector from exporting rice until 2007 in order to maintain low rice prices in the domestic market. Nonetheless, the price gap between the domestic market and the international market stimulated the smuggling of rice to neighboring countries (Tin Soe and Fisher, 1990). Similarly, while the government monopolized the market of fuel oil until 2010, the pervasive black markets implied that part of the fuel oil in the black market was smuggled to Myanmar.

Third, the multiple exchange rate system of Myanmar would not provide incentives to mis-report. Biswas and Marjit (2005) developed a model to describe the behaviors of traders under the dual exchange rate system of India. When the official exchange rate overvalues the local currency and importers have foreign exchange allocation at such a favorable rate, they would have incentives to over-invoice to receive foreign exchange in excess. At the same time, exporters would have incentives to under-invoice to retain foreign exchange and sell it on the black market. For Myanmar, private importers have no allocation of foreign exchange at the official exchange rate, while private exporters can retain the full amount (after export taxes) of export earnings in foreign currency. Given these characteristics, the multiple exchange rate system itself would not be relevant to mis-reporting in Myanmar.

Fourth, and most importantly, the conditionality of the export earnings for import licenses might provide peculiar incentives to mis-report. For importers, without a sufficient supply of export earnings, they cannot obtain import licenses, which would push out part of the import demand to under-invoicing and smuggling. A shortage in the export earnings in the parallel market would constrain proper reporting of imports.

II.3 Constraints on Mis-reporting, and Border Trade

The discussion so far has proceeded on the proviso that traders would adjust trade mis-reporting without any constraints. In fact, this is not the case at all. As for exports,

since the export tax is levied, exporters, if possible, would never properly report exports. The actual situation has been that the export earnings in the form of FCDs are traded in the parallel foreign exchange market with a fluctuating mark-up, and sometimes a discount, relative to the price of the informally held foreign currency. For the period from August 2007 through October 2011, the mark-up fluctuated between 12.8 percent and - 8.6 percent[9]. First, the fact that importers accepted a mark-up and effectively shouldered the export tax suggests that importers could not under-report imports without constraints; they have to import at least partially with import licenses, for which export earnings are necessary. Second, a mark-up below the export tax rate implies that exporters could not under-report exports without constraints either.

Furthermore, there is one exogenous factor that would affect the level of mis-reporting: the rise in border trade. The control of the central government over border areas has been weak. Insurgencies by ethnic minority groups have been most severe in the region near the Myanmar-Northern Thai border. It was not until 2004 that the provisional cease-fire agreement was concluded between the central government and ethnic minorities in this region. While the improved political stability gave impetus to border trade, the government has tolerated smuggling in the border areas.

As far as the border trade with Thailand is concerned, the goods to Myanmar that do not pass through Myanmar Customs are believed to be mostly recorded by Thai Customs as exports to Myanmar. Thailand imposes a 7 percent value-added tax (VAT) on the sales of goods in the domestic market, and this VAT is exempted in the case of exports. Thus, smugglers of Thai goods into Myanmar have an incentive to undertake customs declarations at Thai Customs to obtain VAT refunds. To facilitate such transactions, there are quasi- border posts in the Thai territory corresponding to the smuggling points in the Myanmar territory. The situation is similar in the Myanmar-China border areas. A rise in such imports is associated with a rise in under-reporting of imports.

III. Hypotheses on Trade Mis-reporting

This section presents hypotheses on how traders of the private sector select the level of mis-reporting under various constraints. As a first step, the equilibrium of the parallel foreign exchange market is considered. The parallel market handles both the

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[9] According to the unpublished data of the Japan External Trade Organization (JETRO) Yangon Office.

export-tax-deducted export earnings and the informally held foreign exchange.

To identify the supply and demand of each type of foreign exchange, trade of the private sector can be classified into four categories in relation to customs clearance in Myanmar and in a trade partner country: (i) reported both in Myanmar and the partner country, (ii) reported in the partner country but not in Myanmar, (iii) not reported in either country, and (iv) reported in Myanmar but not in the partner country. These are summarized in Figure 1. Entry 2 includes the smuggling imports of strictly controlled goods such as fuel oil and vehicles as well as under-invoiced imports. Entries 6 and 7 include smuggling exports of restricted items such as rice and teakwood. They may be reported at the Customs of a trade partner country or not, but certainly not at Myanmar Customs due to the export licensing. Entry 7 also includes illegal goods such as narcotics[10].

FIGURE 1

Entries 2 and 4 as well as Entries 6 and 8 consist of the discrepancies in the mirror statistics of trade between Myanmar and a trade partner. For argument's sake, this paper rules out Entries 4 and 8 of Figure 1 by assumption[11]; it is assumed that discrepancies entirely come from the Myanmar side. It should be also noted that Entries 3 and 7 do not account for discrepancies as they are not recorded at either end.

The imports and exports reported at the Customs of any trading partner are denoted by M and X, respectively. M can be decomposed into those reported to Myanmar Customs (Entry 1 of Figure 1), and those unreported (Entry 2). The former is denoted by $(1-\alpha)M$, where α stands for the proportion of mis-reported imports. Over-invoicing of imports is depicted with a negative value of α. The net unreported portion of M at Myanmar Customs can be described as $max\,(0,\alpha M)$. When there is net under-invoicing or smuggling, this is reduced to αM. When there is net over-invoicing, this is zero. Analogously, X can be decomposed into the reported portion at Myanmar Customs, $(1-\beta)X$, and the unreported portion, $max(0,\beta X)$, where β stands for the proportion of mis-reported exports. The former corresponds to Entry 5 of Figure 1, and the latter Entry 6. A negative β indicates net over-invoicing by Myanmar exporters. As for the unreported trade at either the Customs of Myanmar or trading partner countries

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[10] According to *World Drug Report 2011* of the United Nations Office on Drugs and Crime, the total potential farm-gate value of opium production in Myanmar is USD177 million in 2010. Myanmar is the world's second largest illicit opium-producing country, next to Afghanistan.

[11] This assumption is made implicitly in Yalta and Demir (2010) among others.

(Entries 3 and 7), the imports and exports are denoted by *M'* and *X'*, respectively.

The equilibrium of the parallel foreign exchange market is described as follows:

$$(1-\alpha)M = (1-t)(1-\beta)X, \tag{1}$$
$$\alpha M + M' = \beta X + X' + B, \tag{2}$$

where *t* represents the export tax rate and *B* stands for net informal capital flows to the private sector such as workers' remittances. Equation (1) refers to the equilibrium of the market for export earnings in the form of FCDs. The left hand side of the equation represents the demand for the export earnings, and the right hand side the supply. Unless exports are reported to Myanmar Customs and the export tax is deducted, they cannot be labeled as export earnings[12]. Equation (2) expresses the equilibrium of the market for the informally held foreign currency.

With this setting, consideration is given to how exporters and importers select the level of α and β. Except for the imports and exports of prohibited commodities, traders are supposed to adjust mis-reporting by taking into account the expected costs and benefits of mis-reporting.

First, the hypothesis on exporters is that they adjust β by comparing the expected selling price of their export revenue with proper reporting and that with mis-reporting. Unreported export revenues can be sold on the black market, while there are risks of penalty and costs of bribes to the authorities for under-invoicing and smuggling exports[13]. In contrast, reported export earnings are taxed by 10 percent, but they can be maintained as FCDs at state banks. However, the export earnings in the form of FCDs are illiquid assets due to the restrictions on withdrawal. It is only importers that have demand for export earnings and are therefore inclined to accept a degree of mark-up above the black market exchange rate. Unless sold to importers through account transfers, they can be withdrawn only in the foreign exchange certificates (FECs) which are traded on the black market usually with some discounts relative to the price of the greenback. Thus, when the demand for export earnings is low in comparison with the supply, exporters might under-report exports. Similarly, when the demand is relatively high, they might over-report exports to meet the demand.

Second, the hypothesis on importers is that they adjust α by comparing the expected

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[12] The government extends the definition of 'export earnings' periodically. Since January 2010, foreign currency incomes from services, including the revenues of local hotels, are treated as 'export earnings' once the 10 percent income tax is paid.
[13] There are a number of cases where under-invoiced imports were confiscated at Customs. In June 2006, more than 300 Customs officials were arrested simultaneously for corruption; overlooking smuggling and taking bribes from traders.

costs of imports with proper reporting and that with mis-reporting. In addition to import duties, proper reporting requires importers to comply with the conditionality for import licensing. The cost of the conditionality includes the mark-up of the export earnings over the black market exchange rate for the greenback. Under-reporting of imports allows importers to save the above-mentioned costs, whereas there are the risks of penalty as well as the costs of bribes to the authorities.

Two events are considered to have affected the expected costs of imports significantly. One is the suspension of the import licensing conditionality with Lists A and B in April 2005. This is considered to have reduced the costs to comply with the licensing conditionality because importers of consumer goods are no longer obliged to import low-demand capital goods. The other is the rise in border trade from 2004. This might have lowered the costs of smuggling as the probability of the detection of mis-reporting would decrease.

Table 1 summarizes the hypothesized impacts of policies and events on mis-reporting and on trade volume. For example, an increase in the demand for the export earnings (FCDs) is expected to reduce β and raise the recorded exports of the private sector, $(1-\beta)X$. As for the rise in border trade, it is expected to raise α and M, whereas it is ambiguous whether $(1-\alpha)M$ increases or not since two changes in α and M offset each other. These hypotheses are examined with trade statistics in the next section.

TABLE 1

Apart from the factors in Table 1, the market for the informally held foreign exchange may exert influences on α and β. For example, a rise in the smuggling of narcotics (X' in Equation (2)) would increase the supply of informally held foreign exchange, which in turn might stimulate the under-reporting of imports (a rise in α). However, since M', X' and B are not observable, an analysis of this factor is beyond the scope of this paper[14].

IV. Trade Data Analysis

IV.1 Data Sources and Their Characteristics

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[14] There are studies that deal with the border trade of which the flows of commodities are captured by neither the home country nor the trade partner. These include Connolly et al. (1995) on Paraguay, Golub and Mbaye (2009) on The Gambia and Senegal, and Menon (1999) on Lao PDR.

There are three sources of trade data[15]: (1) *Selected Monthly Economic Indicators*, compiled by the Central Statistical Organization of the Government of Myanmar (hereafter SMEI), (2) *Direction of Trade Statistics* of the International Monetary Fund (hereafter DOTS), and (3) Customs data of Myanmar's trading partners retrieved from the *World Trade Atlas* database of Global Trade Information Services.

Myanmar's exports and imports reported in DOTS are mostly consistent with the Customs data of trading partner countries. In most cases, the exports (imports) to Myanmar in trade partners' customs data and Myanmar's imports (exports) in DOTS differ by only the 1.10 CIF/FOB factor in the terminology of Hamanaka (2011: 603)[16]. This implies that DOTS data are compiled mostly from the customs data of Myanmar's trading partners.

The subsequent analysis mainly utilizes SMEI and DOTS. In principle, they should be identical. Then, on the assumption that DOTS data is accurate, discrepancies between them might be interpreted as mis-reporting.

As for SMEI, the published data includes either disaggregation by commodities or by trading partners, but the commodities data disaggregated for each trading partner are not available. For the data by commodities, the total imports are classified into 28 commodities plus the remainder, and the total exports are classified into 24 commodities plus the remainder. These are not based on the Harmonized System of classification. This hampers commodity-level analysis of mirror statistics. For the data by trading partners, the published data reports on 14 major trading partner countries for Myanmar exports, and 13 partners for Myanmar imports[17].

An interesting feature of SMEI is that it publishes the total exports and imports by ownership, namely the exports and imports of the public sector and those of the private sector. The report of trade values by ownership *per se* implies that administrative controls are different between the two sectors. Assuming that mis-reporting does not exist in the public sector, the combination of this data and DOTS data allows us to examine the extent of trade mis-reporting in the private sector.

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[15] Another data source is the United Nations Commodity Trade Statistics (UN comtrade) database. Since Myanmar does not report trade statistics to the UN comtrade database except for the import data in 2001, this paper does not use this data source.

[16] CIF stands for the cost definition of the sum of cost, insurance and freight, while FOB stands for another cost definition of cost only (free on board). It is a common practice to compile export data in FOB and import data in CIF. Furthermore, the differences between CIF and FOB are often assumed to be 10 percent. This is the 1.10 CIF/FOB factor.

[17] These countries and regions include China, France, Germany, Hong Kong, India, Indonesia, Japan, Korea, Malaysia, Philippines, Singapore, Thailand, United Kingdom, and the United States.

IV.2 Aggregated Data Analysis

Table 2 summarizes the trade statistics from SMEI and DOTS for the period from fiscal year 1997 through 2010. Since Myanmar's fiscal year runs from April to the following March, DOTS data is compiled using the quarterly data to match the fiscal year. Fiscal year 1997 is set as the starting year from the consideration on the quality of DOTS data; for example, DOTS does not report the trade between Myanmar and Thailand prior to January 1999.

TABLE 2

In this table, the imports and exports of the private sector in SMEI correspond to $(1-\alpha)M$ and $(1-\beta)X$ of Equation (1), respectively. Furthermore, on the assumption that the trade of the public sector is properly reported to both the Customs of Myanmar and the trading partners, (*Total Exports Reported in DOTS – Government Exports Reported in SMEI*) can be regarded as the equivalent to X in Equation (1). Similarly, (*Total Imports Reported in DOTS – Government Imports Reported in SMEI*) can be regarded as M. Accordingly, the ratio of the *Private Exports Reported in SMEI* to (*Total Exports Reported in DOTS – Government Exports Reported in SMEI*) is equivalent to $(1-\beta)$, and the ratio of the *Private Imports Reported in SMEI* to (*Total Imports Reported in DOTS – Government Imports Reported in SMEI*) as $(1-\alpha)$. Finally, the table includes the ratio of the private imports to the private exports to indicate the balance between the supply and demand for the export earnings. Based on this data set, developments in the trade volume and in the discrepancies in mirror statistics are examined in order.

Regarding the trade volume, the table shows an increasing trend for the total exports. The growth is largely attributable to the exploration of natural gas. Natural gas exports were zero in 1997, USD1,015 million in 2004, and USD2,906 million in 2009. Natural gas exports are registered in the public sector, accounting for 64 percent of the exports of the government in 2009.

In contrast, the total imports were repressed until around 2005, and showed an increasing trend from 2006. According to SMEI data, the imports of the private sector had remained around the same level for nearly one decade by 2005. The subsequent growth in the imports coincided with the suspension of the import license conditionality with Lists A and B.

The ratio of the private imports to the private exports far exceeded 100 percent in the

1990s and then converged in the vicinity of 100 percent by 2000. Such a development of the ratio is consistent with the implementation of the 'export-first' policy. As the government tightened the policy progressively, it became almost impossible for importers to obtain import licenses without the export earnings from 2000.

Next, regarding the discrepancies in the mirror statistics, they are smaller in exports than in imports. The same tendency is observed for Cambodia and Lao PDR in Hamanaka (2011a, 2011b).

The discrepancies in the mirror statistics of exports and imports are contrastive. For the Myanmar exports, discrepancies changed from Myanmar's under-reporting into over-reporting. The ratio of SMEI to DOTS remained mostly below 100 percent until 2005, and it has remained in excess of 100 percent since 2006. For the Myanmar imports, the discrepancies exhibited a weak deepening trend. While the recorded imports of the private sector reached USD 2 billion in 2006, the discrepancy ratio of SMEI to DOTS fluctuated between 40 and 70 percent thereafter.

By piecing together the observations on the volume of trade and on the discrepancies in the mirror statistics, the hypotheses on trade mis-reporting are examined as follows. First, both the suspension of the import restriction with Lists A and B and the rise in border trade are considered to expand imports, M. At the same time, the degree of mis-reporting of imports, α, does not exhibit a clear trend probably due to that these two changes offset each other.

Second, the private exports and private imports have been more or less balanced since 2000. This observation is consistent with the hypothesis that the supply and demand of the export earnings affect α and β. In general, the available data do not enable us to identify whether the demand for the export earnings constrained β, or the supply constrained α. As far as the over-invoicing of private exports from 2006 is concerned, the phenomenon conforms to the hypothesis that an increase in the demand for export earnings reduces β.

IV.3 Country-wise Data Analysis

Table 3 summarizes the mirror statistics of the Myanmar exports and imports disaggregated for each of the major trading partners. The table shows a five-year average for the periods of 2001 through 2005 and 2006 through 2010. Since the time lag of reporting exports at the origin and imports at the destination can cause discrepancies in the mirror statistics, a five-year average is taken to alleviate such a problem.

TABLE 3

For the exports, the discrepancies in the mirror statistics with Thailand and Singapore are noteworthy. First, the discrepancies are small with Thailand. Around 80 percent of the Myanmar exports to Thailand are natural gas through pipelines, and this is managed by a state economic enterprise. Thus, there is little room for discrepancies.

Second, the mirror statistics on exports to Singapore always show large over-reporting. This might be related with the export licensing conditionality. The issuance of export licenses is conditioned on advance payments or irrevocable letters of credit to Myanmar state banks, which is often not straightforward. To circumvent this conditionality, Myanmar companies often establish affiliated companies in the free port of Singapore. First, the affiliated companies remit the payment by telegraphic transfer, and commodities are shipped to Singapore. Then, the affiliated companies re-export commodities to destinations, and foreign importers pay the bill in deferred payments to the affiliated companies. While Myanmar Customs record such transactions as exports to Singapore, Singapore Customs do not record them as imports from Myanmar.

Finally, the large over-reporting of exports is observed for the United States and Hong Kong. The United States imposed economic sanctions on Myanmar in 2003, and since then has prohibited imports from Myanmar. Thus, the discrepancies are in principle due to the misclassification of the destination/origin of goods. For the case of Hong Kong, reasons are yet to be analyzed.

For the imports, under-reporting is the most severe with Thailand, and to some lesser extent with China. These are two neighboring countries, and the border trade consists of a large part of the bilateral trade with them. Table 4 summarizes the trends of the imports through land borders for China and Thailand. This table uses the data from Chinese and Thai Customs as for the corresponding records of Myanmar's imports; the 1.10 CIF/FOB factor is not adjusted. For the case of Thailand, a clear tendency is observed that as the proportion of the border trade increases, under-reporting deepens.

TABLE 4

The situation is different for the imports from China. There is no clear increasing trend in the proportion of the border trade to the total imports. While the border trade has been growing, the total imports have grown faster. In addition, the Customs data from China and Thailand show that the composition of Myanmar's imports from China exhibits a higher proportion of capital goods and industrial raw materials, whereas the imports from Thailand contain a higher proportion of consumption goods such as

beverages. Given that the imports of the public sector concentrate on capital goods and industrial raw materials, it is conjectured that the proportion of the imports by the public sector is higher with China than with Thailand. This may account for the difference in the level of mis-reporting for the imports from these two neighboring countries.

The discrepancies for the imports from Singapore are much smaller than the average. This might also be related with the imports of the public sector. Singapore Customs report that the largest export commodity to Myanmar in terms of value has been refined oil, which is mainly imported by the public sector. For Myanmar's fiscal year 2008, the total exports of Singapore to Myanmar were USD1,254 million, of which USD629 million was refined oil. Thus, small discrepancies for the imports from Singapore might be partially attributable to a high proportion of the public sector imports.

V. Concluding Remarks

This paper examined the impacts of Myanmar's restrictive trade policies on the incentives for traders to mis-report, and examined trader behavior. Using the set of Myanmar's trade statistics and the corresponding records of the IMF's *Direction of Trade Statistics*, the discrepancies in the mirror statistics are considered to be an indication of trade mis-reporting.

The 'export-first' policy has restricted import licenses within the applicant's holdings of the export-tax-deducted export earnings. It was examined whether this policy, in combination with other restrictions on foreign exchange and foreign trade, would provide sufficient incentives to both importers and exporters to adjust mis-reporting according to the supply and demand for the export earnings. The Myanmar statistics show that the trade of the private sector has been maintaining equilibrium since the 'export-first' policy was tightened in 2000. At the same time, the discrepancies in the mirror statistics for both Myanmar's imports and exports have fluctuated. These suggest that traders adjusted mis-reporting in accordance with the supply and demand of the export earnings.

As far as the policy objective of the export earnings conditionality for import licensing is to manage the scarce foreign exchange, the export revenue from natural gas has made this policy less crucial for the government. To correct traders' incentives to mis-report, one policy option is to abolish the conditionality of the export earnings for import licensing. Eliminating this conditionality would save the transaction costs and stimulate trade of the private sector. It would also encourage private importers to

properly report imports as they no longer have to accept a degree of mark-up for the export-tax-deducted export earnings above the parallel market exchange rate.

As of February 2012, the Government plans to deregulate the 'export-first' policy[18]. Import licenses will be obtainable with informally held foreign exchange, with the ceiling of USD 10,000 though, once taxes equivalent to the export tax are paid[19]. This easing of restrictions is expected to reduce mis-reporting of imports. Future research examining the impacts of this policy change on trade mis-reporting is needed.

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[18] This information is based on the author's communication with the senior officials of the Government of Myanmar in February 2012.
[19] For the amount above USD10,000, documentations on the source of funds are necessary. However, this conditionality is from consideration on anti-money laundering.

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FIGURE 1

Classification of Trade Mis-reporting

(A) Imports

Myanmar Customs

		Reported	Unreported
Customs of Partner Country	Reported	1	2
	Unrepoted	4	3

(B) Exports

Myanmar Customs

		Reported	Unreported
Customs of Partner Country	Reported	5	6
	Unrepoted	8	7

Source: Author

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TABLE 1

Hypotheses on Trade Mis-reporting

Exporters	Impact on β	Impact on $(1-\beta)X$
An increase in demand for export earnings	-	+

Importers	Impact on α	Impact on $(1-\alpha)M$
An increase in supply of export earnings	-	+
Suspension of restriction with Lists A and B	-	+
A rise in border trade	+	?

Source: Author

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TABLE 2

Mirror Statistics of Total Imports and Exports, Fiscal Year 1997-2010

Fiscal Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Exports	*US dollar, millions*													
Selected Monthly Economic Indicators														
Total	1,036	1,082	1,433	1,961	2,549	3,075	2,356	2,915	3,554	5,223	6,413	6,793	7,569	8,856
of which Government	266	337	325	581	1,216	1,422	1,048	1,653	1,951	3,155	4,044	4,313	4,481	5,354
of which Private	770	745	1,109	1,380	1,333	1,653	1,308	1,262	1,603	2,068	2,369	2,480	3,087	3,502
Direction of Trade Statistics	1,148	1,157	1,482	2,266	2,718	2,627	2,973	3,328	3,813	4,638	5,143	6,477	6,134	7,084
SMEI / DOTS (%)	90.3	93.5	96.7	86.5	93.8	117.0	79.3	87.6	93.2	112.6	124.7	104.9	123.4	125.0
Private Exports/(DOTS-Gov. Exports) (%)	87.3	90.8	95.8	81.9	88.8	137.1	68.0	75.3	86.1	139.4	215.5	114.6	186.8	202.5
Imports	*US dollar, millions*													
Selected Monthly Economic Indicators														
Total	2,309	2,702	2,605	2,321	2,734	2,297	2,235	1,979	1,982	2,928	3,347	4,563	4,186	6,404
of which Government	663	882	773	463	958	511	703	626	614	1,125	903	1,971	1,381	1,781
of which Private	1,645	1,820	1,833	1,857	1,777	1,786	1,532	1,354	1,785	2,339	2,443	2,592	2,806	4,623
Direction of Trade Statistics	2,706	2,443	2,583	2,991	2,695	2,997	3,325	3,487	3,656	4,174	5,933	6,720	7,979	10,640
SMEI / DOTS (%)	85.3	110.6	100.9	77.6	101.5	76.6	67.2	56.8	54.2	70.2	56.4	67.9	52.5	60.2
Private Imports/(DOTS-Gov. Imports) (%)	80.6	116.5	101.2	73.5	102.3	71.8	58.4	47.3	58.7	76.7	48.6	54.6	42.5	52.2
Private Imports/Private Exports (%)	213.7	244.3	165.3	134.6	133.3	108.1	117.1	107.3	111.3	113.1	103.1	104.5	90.9	132.0

Sources: *Selected Monthly Economic Indicators*, Central Statistical Organization, Myanmar; *Direction of Trade Statistics*, International Monetary Fund.

Notes: SMEI and DOTS stand for *Selected Monthly Economic Indicators* and *Direction of Trade Statistics*, respectively. DOTS data do not include imports from and exports to Thailand prior to January 1999. SMEI reports the value of trade in the local currency, kyat. This is converted into US dollars using the official exchange rate.

TABLE 3

Mirror Statistics of Exports and Imports by Destination/ Origin

(1) Exports

	2001- 2005 Average			2006- 2010 Average		
	(A) SMEI	(B) DOTS	(A)/(B) %	(C) SMEI	(D) DOTS	(C)/(D) %
	Unit: US dollar, million					
Total	2,890	3,092	93.5	6,971	5,895	118.2
China	316	173	182.7	749	616	121.6
Germany	13	97	13.5	55	92	59.9
Hong Kong	113	32	359.3	912	49	1867.1
India	373	374	99.5	831	899	92.4
Indonesia	53	18	298.3	56	27	206.1
Japan	106	140	76.0	190	301	63.1
Korea	32	42	77.2	84	102	82.7
Malaysia	92	91	101.9	223	155	143.8
Pakistan	23	21	107.3	34	50	67.5
Philippines	10	2	512.8	15	6	235.7
Singapore	167	86	193.4	512	76	676.8
Thailand	1,058	1,102	96.0	2,780	2,597	107.0
United Kingdom	59	87	67.5	46	50	93.3
United States	139	188	74.0	2	0	12307.1
Others	334	638	52.4	481	875	54.9

(2) Imports

	2001- 2005 Average			2006- 2010 Average		
	(A) SMEI	(B) DOTS	(A)/(B) %	(C) SMEI	(D) DOTS	(C)/(D) %
	Unit: US dollar, million					
Total	2,246	3,232	69.5	4,286	7,089	60.5
China	420	916	45.8	1,270	2,520	50.4
France	10	10	104.0	24	27	90.4
Germany	23	25	90.9	39	51	75.7
Hong Kong	44	53	83.4	19	52	36.8
India	92	98	94.0	174	224	77.6
Indonesia	63	70	89.9	185	253	73.1
Japan	198	135	147.0	216	217	99.6
Korea	152	178	85.7	182	361	50.3
Malaysia	212	212	100.0	179	300	59.6
Singapore	612	632	96.8	1,150	1,065	108.0
Thailand	222	559	39.7	434	1,566	27.7
United Kingdom	10	13	71.5	12	10	115.3
United States	38	11	334.1	45	11	421.5
Others	150	320	46.9	358	433	82.6

Sources: Same as TABLE 2.

TABLE 4

Share of Imports by Land in Total Imports from China and Thailand, 1999-2010

	Imports from China					
	Myanmar Imports Records		Chinese Exports Records		Proportion of trade by land	Discrepancies
Fiscal Year	(A) National Total	(B) *of which Border*	(C) National Total	(D) *of which Border*	(D)/(C) %	(A)/(C) %
	Unit: US dollar, million					
1999	251	..	385	*268*	69.6	65.3
2000	286	..	522	*291*	55.8	54.7
2001	308	..	531	*283*	53.2	57.9
2002	362	..	789	*367*	46.5	45.9
2003	470	..	918	*490*	53.4	51.2
2004	492	..	910	*499*	54.9	54.1
2005	467	*195*	1,018	*582*	57.2	45.9
2006	728	*297*	1,320	*687*	52.0	55.2
2007	994	*422*	1,774	*834*	47.0	56.0
2008	1,207	*496*	1,946	*877*	45.1	62.0
2009	1,257	*577*	2,649	*1,289*	48.7	47.4
2010	2,165	..	4,142	*1,916*	48.7	52.3

	Imports from Thailand					
	Myanmar Imports Records		Thai Exports Records		Proportion of trade by land	Discrepancies
Fiscal Year	(A) National Total	(B) *of which Border*	(C) National Total	(D) *of which Border*	(D)/(C) %	(A)/(C) %
	Unit: US dollar, million					
1999	347	..	423	*144*	34.0	82.0
2000	303	..	467	*139*	29.7	65.0
2001	268	..	361	*112*	31.1	74.0
2002	231	..	318	*94*	29.5	72.8
2003	191	..	484	*222*	45.8	39.4
2004	184	..	631	*400*	63.3	29.1
2005	237	*85*	722	*415*	57.4	32.8
2006	304	*148*	790	*385*	48.7	38.5
2007	383	*156*	1,128	*545*	48.3	34.0
2008	395	*189*	1,323	*760*	57.5	29.8
2009	379	*135*	1,734	*1,047*	60.4	21.9
2010	710	..	2,437	*1,021*	41.9	29.1

Sources: Website of the Department of Border Trade, Ministry of Commerce, Myanmar

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Notes: (..) means not available. Border trade refers to exports of Thailand and China to Myanmar via land ports.