

Chapter 2

Myanmar's Non-Resource Export Potential after the Lifting of Economic Sanctions: A Gravity Model Analysis

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Abstract

Easing of economic sanctions by Western countries in 2012 augmented the prospect that Myanmar will expand its exports. This study projects Myanmar's export potential by calculating counterfactual exports with gravity equation regressions using data from 10 Asian countries. Its empirical results indicate that Myanmar's actual exports of non-resource goods during 2005–2010 were one-fifth of their potential, implying that exports to neighbouring countries did not compensate for exports lost to Western sanctions. Restored access to the U.S. market is expected to enhance Myanmar's exports, particularly of apparel.

1. Introduction

During the 2000s, the United States, Canada, and the European Union (EU) imposed general or specific import bans on Myanmar goods in response to actions by the country's ruling junta. The tightening of U.S. sanctions in July 2003 hit Myanmar's apparel industry especially hard. In 2002, Myanmar's apparel exports to the United States were USD 318.8 million, 11.3% of total exports; in 2004, exports dropped to zero.¹

Myanmar's per capita exports have remained the lowest among members of the Association of Southeast Asian Nations (ASEAN) in the past two decades. Per capita exports of goods and services in 2010 were USD 159, less than half the USD 359 reported for the Lao People's Democratic Republic (Lao PDR). Furthermore, Myanmar's exports have been concentrated in natural resources such as natural gas.

Following efforts by Myanmar's quasi-democratic government established in April 2011 to reconcile with the democratization movement, the above-mentioned Western countries lifted most of their sanctions by the end of 2012. Their actions enhance Myanmar's prospects to expand its exports. Against this backdrop, this study projects

¹ Kudo (2008) provides an anecdotal account about the impact of US sanctions on Myanmar's apparel industry.

Myanmar's export potential.

Myanmar is an agriculture-based, low-income economy, and alleviating poverty remains an important challenge. In 2010, its per capita gross domestic product (GDP) was USD 759.1, and 25.6 per cent of the population lived below the national poverty line (Asian Development Bank, 2012).² Until 2003, agriculture produced more than a half of Myanmar's GDP, and it still accounted for 38 per cent in 2010.³ Although exports of natural resources have increased sharply since 2001, the situation presents the prospect of lower long-run economic welfare through the Dutch disease or rent-seeking (van der Ploeg, 2011). In contrast, exports of agricultural products and labour-intensive manufactured goods are expected to help alleviate Myanmar's poverty (Dorward et al., 2004; Kurihara and Yamagata, 2003). Accordingly, the export potential for non-resource goods is the particular interest of this study.

The remainder of this study is structured as follows. Section II presents details of economic sanctions against Myanmar and the composition of exports by destination and commodity. Section III reviews the literature of trade analyses that employ gravity models, focusing on studies of economic sanctions and projections of trade potential. Section IV illustrates the study's empirical methods and summarizes its results. It also draws policy implications promoting non-resource exports. Section V concludes.

2. Sanctions and Trade Structure in Myanmar

2.1 Economic sanctions

Western countries initiated sanctions against Myanmar (Burma) after its suppression of anti-government protest and the subsequent establishment of a junta in August 1988. The United States imposed the most severe sanctions, followed by Canada and the EU.⁴ The sanctioning governments enjoined their citizens and corporations from engaging in specific economic activities with Myanmar. For instance, the U.S. general import ban prohibited U.S. citizens and corporations from importing Myanmar goods.

Only the United States and Canada imposed general import bans on Myanmar goods. The junta's detention of pro-democracy leader Aung San Suu Kyi, in May 2003, led the U.S. Congress to pass the Burmese Freedom and Democracy Act, which contained the general import ban and restrictions on providing financial services to junta-related

² Ware (2011) argues that the sanctions were indirectly associated with the prevalent poverty in Myanmar.

³ These figures are from the *Key Indicators for Asia and the Pacific 2012* of the Asian Development Bank (ADB).

⁴ Australia imposed an arms embargo against Myanmar but never implemented general trade and investment sanctions.

entities. In July 2003, President Bush issued Executive Order 13310 that enacted the general import ban, after which U.S. imports from Myanmar were halted. In response to the junta's crackdown on the anti-government movement in September 2007, Canada enacted the Special Economic Measures (Burma) Regulations SOR/2007-285 in December 2007, which involved comprehensive trade and investment prohibitions.

The EU responded to the 2007 crackdown with specific import bans. In February 2008, the European Council issued Council Regulation (EC) 194/2008, which banned import of timber and timber products, coal and metals, and precious and semi-precious stones and restricted investments in entities related to the junta.

In July 2008, the U.S. Congress passed the Tom Lantos Block Burmese JADE (Junta's Anti-Democratic Efforts) Act, which referred to restrictions on the use of correspondent accounts in U.S. financial institutions for junta-related entities. Its enactment effectively enjoined not only U.S. but also third-country financial institutions from making dollar-denominated remittances to Myanmar. The U.S. restrictions on the provision of financial services, which made trade settlements more difficult, are considered to have hindered Myanmar's exports to third countries such as Japan, which did not impose sanctions.

After inauguration of the quasi-democratic government, led by President Thein Sein in April 2011, the West began to ease its economic sanctions. In April 2012, Canada amended the Special Economic Measures (Burma) Regulations and announced the lifting of most sanctions, including its general import ban. In May 2012, the European Council issued Council Regulation (EC) 409/2012, suspending sanctions laid down in Regulation 194/2008. However, in August 2012, the U.S. Congress renewed for one year the general import ban in the Burmese Freedom and Democracy Act of 2003, and restrictions on investments and financial services were eased in July 2012. In November 2012, the U.S. Departments of State and Treasury announced a waiver of the ban on imported Myanmar goods except jadeites and rubies. Thus, the preponderance of sanctions was lifted by the end of 2012.

2.2 Export composition

Myanmar's per capita exports have been low compared with other low- and lower-middle-income countries in the region. Figure 1 summarizes the per capita exports of goods and services and per capita income of Myanmar and its peers in Southeast and South Asia. Myanmar's per capita exports more than doubled from 2005 to 2010. However, they have remained the lowest among ASEAN members since 1990.

Figure 1

A comparison of destinations for Myanmar's exports and its peers implies that sanctions partially accounted for its low per capita exports. Table 1 lists the major export destinations of Myanmar and its peers in 2010. Except for Myanmar, the United States and Canada are among the top 20 export destinations. The United States accounted for 36.1 per cent of total exports for Cambodia, 19.1 per cent for Bangladesh, and 18.8 per cent for Viet Nam. In contrast, Myanmar's exports are concentrated in Thailand, China, and India, which together accounted for 75.1 per cent of its total exports in 2011.

Table 1

Furthermore, Myanmar's exports are highly concentrated in natural resources and primary commodities. Table 2 lists the major exports of Myanmar and its peers. The export of natural gas (HS27) to Thailand alone amounted to 40% of Myanmar's total exports in 2010. Other exported mining resources include iron ore and nonferrous metal ore (HS26) mainly to China, and jadeite and rubies (HS71) to China. Natural gas and mining resources as a whole accounted for 46 per cent of total exports. Other major export items are mostly primary commodities such as pulses and beans (HS07), rough wood (HS44), fishes and marine products (HS03), rubber (HS40), and sesame (HS12). Manufactured goods constituted a lower share of all exports from Myanmar than for Cambodia and Viet Nam.

Table 2

Light manufactured goods are common exports among developing countries. For example, exports of apparel and footwear accounted for 83.1 per cent of Cambodia's total exports in 2010, 82.3 per cent in Bangladesh, and 25.5 per cent in Viet Nam. Table 3 lists major importers of apparel and footwear from Myanmar and its peers. As shown, the United States and Canada were major importers of apparel and footwear from Myanmar's peers, followed by the EU and Japan.

Table 3

Industrialized countries often suspend tariffs on imports from low-income countries

through the Generalized System of Preferences (GSP) to promote their exports and economic growth.⁵ Under the “Everything but Arms” agreement (EBA), the EU admits duty-free and quota-free imports of goods except arms from least developed countries, provided the goods satisfy rules of origin. This scheme has been applied to Bangladesh, Cambodia, and Lao PDR. The United States provides similar preferential treatment for Bangladesh and Cambodia.⁶ These schemes helped Myanmar’s peers to expand exports, especially apparel.

In April 1989, the United States suspended the GSP preferences it had offered Myanmar since 1976. The EU withdrew it in March 1997, citing the junta’s widespread use of forced labour.⁷ Thus, Myanmar was placed in a disadvantageous position compared with its peers.⁸

Since the establishment of a quasi-democratic government, Myanmar’s relations with the EU and the United States have improved. In July 2013, the EU reinstated GSP preferences for Myanmar and applied the EBA scheme retroactively from June 2012. In April 2013, the United States was reported to be considering resumption of the GSP with Myanmar. Tariff exemptions in EU and U.S. markets will give impetus to Myanmar exports.

3. Literature Review

3.1 Sample formulation for gravity model regression

This study projects Myanmar’s export potential using a gravity model regression. In the extensive literature of trade analyses using gravity model regressions, two lines of inquiry are relevant to this study’s objective. One is the projection of trade potential in the event of a policy change. The other is the analysis of the effects of economic sanctions on bilateral trade flows. This subsection reviews these two lines of inquiry from the viewpoint of formulating a sample set for this study’s gravity equation regression analysis.

⁵ Collier and Venables (2007) illustrate how trade preferences of industrialized countries promote manufacturing exports of low-income countries with particular reference to African countries.

⁶ The United States has conducted normal trade relations with Viet Nam since December 2001. For example, its import duty on ordinary men’s cotton shirts from Viet Nam is 19.7 per cent whereas it is 0 per cent for shirts from Bangladesh and Cambodia. The EU applies the GSP program for Viet Nam that is less preferential than the EBA: its import duty on ordinary men’s cotton shirts is 9.6 per cent, discounted from the 12 per cent most favoured nation tariff rate but much higher than 0 per cent applicable to other least developed countries.

⁷ Japan was exceptional among industrialized countries in maintaining the GSP scheme and provided duty-free and quota free market access for Myanmar goods.

⁸ According to Anukoonwattaka and Mikic (2012), the proportion of Myanmar’s agricultural exports that received duty-free treatment in 2006–2009 was about 16 per cent of total agricultural export values, whereas it exceeded 40 per cent for other low-income countries.

First, studies generally interpret the amount of trade predicted by the gravity regression as a country's trade potential. Furthermore, they generally interpret the gap between a country's predicted and actual trade as unexhausted trade potential. Numerous studies, especially in the 1990s, projected trade potential for former communist economies when they started economic integration with market economies.

In formulating sample sets for projecting trade potential of former communist economies, Egger (2002) classified studies into two approaches. One approach is to estimate a gravity equation that excludes former communist economies from the sample. Instead, a gravity equation is estimated using the sample set of market economies, and its estimated parameters are used to calculate the counterfactual trade of the countries considered, an approach referred to as out-of-sample projection. Its applications include Wang and Winters (1992) for Eastern Europe and Montenegro and Soto (1996) for Cuba. The other approach is to estimate a gravity equation by including countries under consideration in the sample set. Then the residual of the estimated equation—the gap between the actual and fitted values—is interpreted as unexhausted trade potential. This approach is referred to as in-sample projection, and its applications include Baldwin (1994) and Nilsson (2000).

Egger (2002) argues that in-sample projection produces biased estimates of trade potential. For a consistent and efficient estimator, the residuals of a gravity model regression should be white noise. Systematic, large, positive errors should not necessarily be regarded as unexhausted trade potential but as indications of model misspecification. To mitigate the problem with in-sample projection, one option is to insert explanatory variables into the gravity equation that would account for the unexhausted trade potential. For example, Kucharcukova et al. (2012) associate the unexhausted trade potential of countries in South-eastern Europe and the Commonwealth of Independent States with their low-quality economic institutions. However, adding explanatory variables requires a priori knowledge of the determinants of trade potential.

Second, studies that analyze effects of economic sanctions often insert a dummy variable in the gravity equation regression. A negative coefficient for a dummy indicates that sanctions reduced trade volume. Evenett (2002) examines the impact of economic sanctions on South Africa's exports; his research question was to compare the magnitude of economic sanctions among four groups of countries: the EU (represented by France, Italy, and the United Kingdom), Nordic countries (Denmark, Norway, and Sweden), Japan, and the United States. South Africa's exports to these four groups of countries were compared with those of 30 other middle-income countries. Evenett

found that U.S. sanctions bore the most significant magnitude.

U.S. economic sanctions have been a popular subject of analysis. Using a gravity model of U.S. bilateral trade with 170 countries, including sanctioned countries, Hufbauer and Oegg (2003) estimate the aggregated trade losses of the United States due to economic sanctions using dummy variables for sanctioned countries. They further questioned whether U.S. sanctions had affected trade between the target countries and third parties, such as Japan and the EU, which had not implemented sanctions. Caruso (2005) estimates additional gravity equations for bilateral trade of Japan and the EU countries with the world, including sanctioned countries. He finds that U.S. sanctions positively correlated with increased exports from other industrialized countries to sanctioned countries. On the other hand, Yang et al. (2004) find that the effects of U.S. sanctions on the bilateral trade of Japan and the EU with sanctioned countries depended on the types of sanctions and their periods.

Few trade analyses examine Myanmar using a gravity model. Nu Nu Lwin (2009) examines the impact of economic sanctions against Myanmar using bilateral trade data of Myanmar with its 27 major trade partners, employing a dummy variable for sanctioning countries in a gravity equation. The coefficient of the dummy representing sanctioning countries was significantly negative, indicating sanctions reduced trade volume between Myanmar and sanctioning countries. A drawback of this approach is that the indirect effects of sanctions on trade between Myanmar and a third country such as Japan cannot be captured properly.

Ferrarini (2013) studies Myanmar's export potential using the out-of-sample approach. Myanmar's counterfactual export is projected with the parameters of the gravity equation estimated using export data of six ASEAN members with their 35 major trade partners. He finds that Myanmar's actual exports surpassed their projected potential from 2000 to 2007. However, since then its export potential has grown rapidly, and in 2010, it was four times greater than actual exports. Following Ferrarini (2003), this study utilizes the out-of-sample approach.

3.2 Econometric issues

Since an accurate projection requires that the estimated parameters be consistent and efficient, two econometric issues require close attention. One is the treatment of multilateral resistance (Anderson and van Wincoop, 2003) in a gravity equation. The other is the omission of observations where bilateral trade is zero (Santos Silva and Tenreyro, 2006).

First, according to Anderson and van Wincoop (2003), bilateral trade between

Countries A and B is affected by three factors; trade barriers between them, Country A's resistance to trade with all countries, and Country B's resistance to trade with all countries. For example, even though Country A imposes a tariff on imports from Country B, it imposes higher tariffs on imports from other countries. In such a case, Country A would imports more goods from Country B than from other countries. These three factors constitute multilateral resistance. Without properly controlling for its effects, gravity equations yield biased estimations.

The literature presents several ways to control for multilateral resistance in a conventional gravity equation. A conventional specification of a gravity equation is

$$\ln(x_{ij}) = \alpha_1 + \alpha_2 \ln(y_i \cdot y_j) + \alpha_3 \ln\left(\frac{y_i}{\text{pop}_i} \cdot \frac{y_j}{\text{pop}_j}\right) + \alpha_4 \ln(d_{ij}) + \varepsilon_{ij}, \quad (1)$$

where x_{ij} refers to exports from Country i to Country j ; y_i and y_j are GDP in each country, pop_i and pop_j are population in each country, and d_{ij} is the distance between the countries. One way to control multilateral resistance is to add to the conventional gravity equation the fixed effects for each exporter and importer (Kucharcukova et al., 2012). Another way is to insert dummy variables for each pair of exporters and importers (Ferrarini, 2013).⁹ Following Vandebussche and Zanardi (2010), this study includes the bilateral real exchange rate (RER) in its gravity model to control multilateral resistance.

Second, the conventional gravity equation regression employs variables in logarithm to alleviate heteroscedasticity. However, taking logarithms of the dependent variable restricts the sample set to non-zero observations. Furthermore, the expected value of variable x_{ij} in log, $E[\ln(x_{ij})]$, is not identical with the log of the expected value of x_{ij} , $\ln[E(x_{ij})]$. These properties lead to biased estimates. Santos Silva and Tenreyro (2006) prove that the Poisson pseudo-maximum-likelihood (PPML) method with the trade values in level, not in log, provides efficient estimators when the conditional variance is proportional to the conditional mean, which is particularly the case for a gravity model. Applications of the PPML method include Chen et al. (2011) and Kucharcukova et al. (2012). This study also applies this method.

⁹ Strictly speaking, the theory-founded model specification of Anderson and van Wincoop (2003) drops GDP and other country-specific variables and replaces them with fixed effects for each of exporter and importer. Kucharcukova et al. (2012) insert a fixed-effect dummy for each exporter and importer into the conventional gravity equation, without dropping GDP and other country-specific variables. In such a specification, country-specific variables could be redundant. On the other hand, Ferrarini (2013) inserts a dummy for each pair of importers and exporters. In this specification, the distance variable could be redundant.

4. Empirical Analysis

4.1 Dataset and model specification

In the formulation of its dataset, this study differs from Ferrarini (2013) in two aspects. First, it focuses on non-resource exports, whereas Ferrarini (2013) considers total exports including natural resources. From the viewpoint of reducing poverty, non-resource exports such as agricultural products and labour-intensive manufactured goods would be more relevant policy targets in Myanmar. Instead of total exports, this study employs non-resource exports as the dependent variable in its gravity equation. Resource exports are defined by Standard International Trade Classification Codes 2 (crude materials and inedible, except fuels) and 3 (mineral fuels, lubricants, and related materials). These categories are subtracted from total exports.

Second, projections of export potential using the out-of-sample approach might be influenced by the choice of exporters in the dataset. Ferrarini's (2013) dataset consists of exports of six ASEAN members (Cambodia, Indonesia, Malaysia, Philippines, Thailand, and Viet Nam) to 35 major trading partners. That selection of exporters is skewed to middle-income countries with high export performance. This study adds four other low- and lower-middle-income countries (Bangladesh, Lao PDR, Nepal, and Sri Lanka) as exporters. The sample consists of these 10 countries' exports to 167 countries and regions. Once we obtain the parameters of the gravity equation, we interpolate Myanmar's data to derive counterfactual export potential.

Sources of data are as follows. Trade data are from the *United Nations Commodity Trade (UN Comtrade)* database in the World Bank's *World Integrated Trade Solution (WITS)* website.¹⁰ Because export data reported by Myanmar and some of the 10 exporters are patchy, this study employs data on imports from Myanmar and the 10 countries reported by their trade partners. Macroeconomic variables, including GDP and GDP per capita, are from the *World Economic Outlook Database* April 2013 of the International Monetary Fund (IMF). These variables are deflated by the U.S. GDP deflator to constant 2005 U.S. dollars. Distance data are from the CEPII website.¹¹ The sample spans six years from 2005 to 2010.

The specification of the gravity equation is as follows.

$$X_{ijt} = \exp\{c + \alpha_1 \ln(\text{GDP}_{it}) + \alpha_2 \ln(\text{GDP}_{jt}) + \alpha_3 \ln(\text{GDPpc}_{it}) + \alpha_4 \ln(\text{GDPpc}_{jt}) + \beta_1 \ln(\text{dist}_{ij}) + \beta_2 \ln(\text{rer}_{ijt}) + \gamma_1 \text{ASEAN}_{ij} + \gamma_2 \text{Year}_t\} + \varepsilon_{ijt}, \quad (2)$$

¹⁰ <http://wits.worldbank.org/wits/>.

¹¹ <http://www.cepii.fr/>.

where X_{ijt} refers to imports of non-resource goods from country i ($i \in 10$ countries) reported by country j ($j \in 167$ countries) in year t . GDP_i and GDP_j denote GDP of exporters (i) and importers (j). $GDPpc_i$ and $GDPpc_j$ denote their, respective, GDP per capita. $dist_{ij}$ is the distance between two countries. rer_{ij} is the RER of the exporter's currency vis-à-vis the importer's currency. A rise in rer_{ij} indicates real depreciation of the exporter's currency. To capture the enhanced intra-ASEAN trade flows (Elliot and Ikemoto, 2004), we include an ASEAN dummy that takes 1 when both the exporter and importer are members of ASEAN, and 0 otherwise. $Year_t$ is a set of year dummies.

4.2 Potential for export growth

Using the PPML method, our gravity equation is estimated by pooling samples for the six indicated years. Along with the PPML method, the ordinary least squares (OLS) regression and the Tobit model are estimated for comparison. Furthermore, two specifications of gravity equations are tested—with and without GDP per capita of exporters and importers. For the PPML method, the dependent variable is X_{ij} . For the OLS regression, the dependent variable is $\ln(X_{ij})$ and observations of zero trade value are dropped. For the Tobit model, the dependent variable is $\ln(1 + X_{ij})$. In the unbalanced six-year panel data of 10 exporters \times 167 importers, there are 2313 observations of zero exports among 9730 observations.

Table 4 summarises the regression results. Coefficients of GDPs for exporter and importer and for distance are significant and have the expected signs in the OLS and Poisson regressions, but not in the Tobit models. The coefficient of the RER is negative and significant in all regressions, contradictory to expectations. The negative sign might be related to the appreciation of most ASEAN country currencies against the U.S. dollar, while their exports expanded during the sampled period (excluding the downturn after the Lehman shock). Among these results, projection of Myanmar's export potential is calculated with Model (6).

Table 4

Figure 2 compares Myanmar's actual non-resource exports with the projected potential by year. This figure shows that projected export potential grew 455 per cent in six years from 2005, whereas actual exports rose 71 per cent. Similar exponential growth in projected export potential is observed in Ferrarini (2013). However, it might be inappropriate to accept these results as they are. The swelling export potential is

related to the growth in Myanmar GDP expressed in U.S. dollars, which is in turn related to sharp appreciation of the Myanmar kyat vis-à-vis the U.S. dollar.¹² Myanmar's GDP increased 213 per cent during the five-year period from USD 14.50 billion in 2006 to USD 45.38 billion in 2010. During the same period, the kyat appreciated 127 per cent vis-à-vis the dollar in real terms. Appreciation in the RER explains more than half of Myanmar's GDP growth expressed in dollars.

Figure 2

The RER of the kyat has been unstable due to Myanmar's underdeveloped foreign exchange market and restrictive controls on foreign exchange and trade (IMF, 2012; Kubo, 2013). Given that the RER during the late 2000s deviated from the long-term trend, export potential projections based on GDP and GDP per capita of the late 2000s might be overestimated.

Table 5 lists Myanmar's potential and actual non-resource exports by destination for an average of six years from 2005 through 2010. The table also shows each trade partner's proportion of the unexhausted potential. Several points are noteworthy. First, actual exports to the United States were negligible between 2005 and 2010 due to the sanctions, whereas the United States is projected as Myanmar's largest potential export destination. As a result, the United States accounts for the largest proportion of Myanmar's unexhausted export potential. Second, India is the only trade partner for which Myanmar's actual exports surpassed potential exports.¹³ It can be argued that exports to neighbouring countries did not make up for exports lost under the sanctions.

Table 5

The above results indicate that restored access to the U.S. market after the lifting of sanctions will help Myanmar to increase exports. Myanmar's peers have been heavy exporters of apparel, including footwear, to the United States and the EU. Thus, Myanmar, too, is expected to increase its apparel exports to these economies. It is crucial for Myanmar's government to improve diplomatic relations with the United States to restore its GSP status.

¹² Myanmar had a multiple-exchange-rate regime during the sampled period. Here, GDP data in US dollars are based on the market exchange rate. In addition, the exchange rate refers to the market exchange rate.

¹³ As for India's imports from Myanmar in 2010, dried leguminous (beans and pulse) were USD 664 million, and wood in the rough was USD 430 million. These two items accounted for 97 per cent of India's imports from Myanmar.

5. Conclusion

After the easing of economic sanctions by Western countries in 2012, Myanmar enjoys augmented prospects for growth in exports. By calculating counterfactual exports with gravity equation regressions using data from 10 Asian countries, this study has projected Myanmar's potential to export non-resource goods.

The empirical results indicated that actual exports of non-resource goods in 2005–2010 were one-fifth of potential exports. Except for exports to India, actual non-resource exports fell below their potential. Exports to neighbouring Asian countries did not compensate for exports lost through the sanctions. The United States accounted for the largest share of Myanmar's unexhausted export potential.

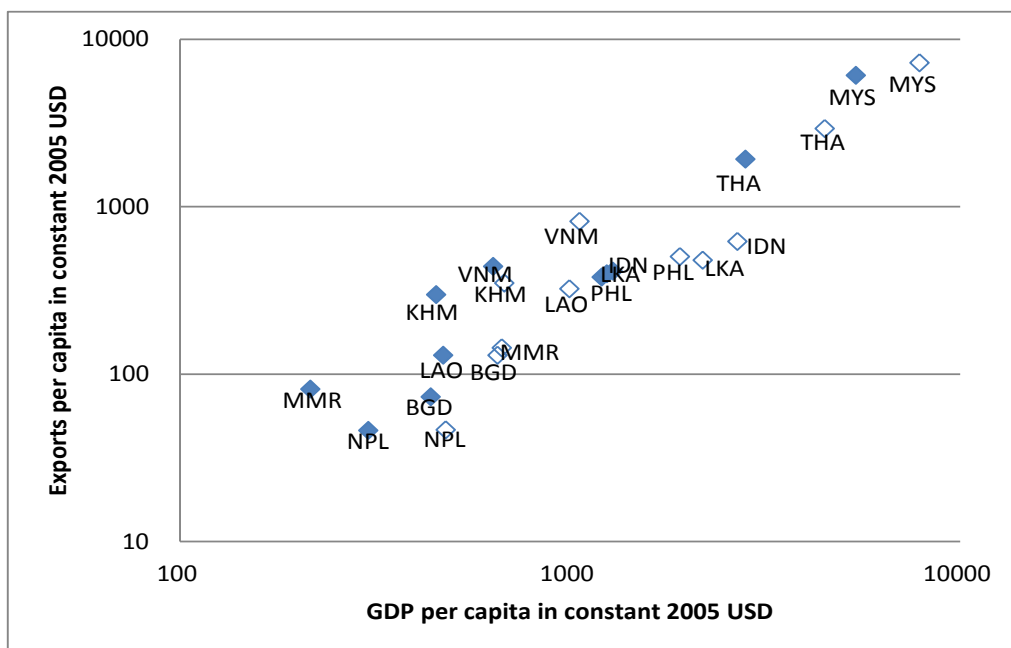
The lifting of sanctions, restored access to U.S. markets, and reinstatement of GSP preferences by the EU are expected to enhance Myanmar's exports. Apparel, including footwear, will be important export items to the United States and the EU in the immediate future. It is crucial for Myanmar's government to improve diplomatic relations with the United States to restore its GSP status.

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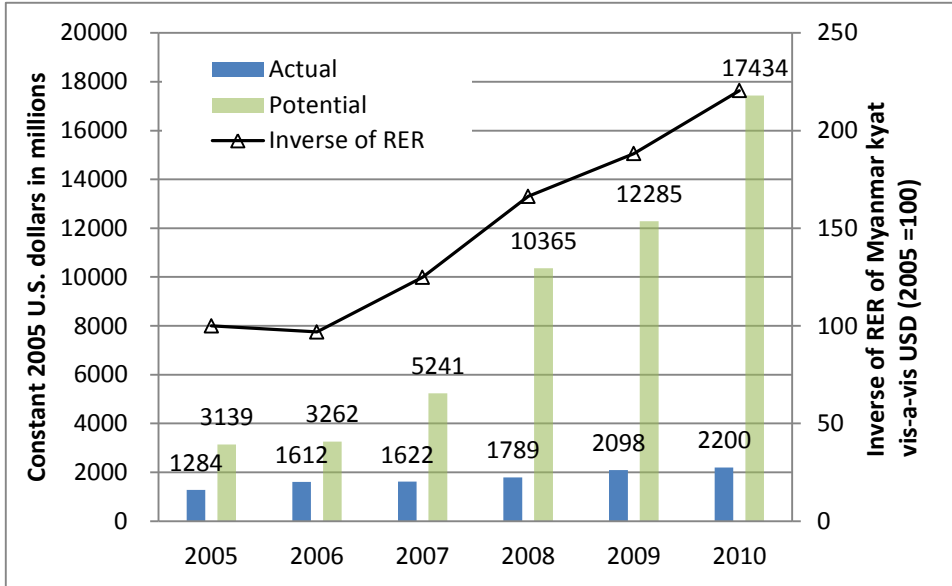
Figure 1
 Per capita exports of goods and services of selected Asian economies in 2005 and 2010
 in constant 2005 U.S. Dollars



Sources: *World Development Indicators 2013*, World Bank; Commodity Trade Statistics Database (*UN Comtrade*), United Nations.

Notes: Filled markers indicate figures for 2005 and blank markers indicate 2010. Abbreviations are as follows: Bangladesh (BGD), Cambodia (KHM), Indonesia (IDN), Lao PDR (LAO), Malaysia (MYS), Myanmar (MMR), Nepal (NPL), Philippines (PHL), Sri Lanka (LKA), Thailand (THA), and Viet Nam (VNM).

Figure 2
 Potential and actual non-resource exports by year (2005–2010)



Sources: *UN Comtrade* and author's calculation.

Table 1
Major export destinations of Myanmar and peers (2010)

Bangladesh			Cambodia			Lao PDR			Myanmar			Viet Nam		
Partner	Value in USD, Mil.	%	Partner	Value in USD, Mil.	%	Partner	Value in USD, Mil.	%	Partner	Value in USD, Mil.	%	Partner	Value in USD, Mil.	%
Total	20444		Total	5748		Total	1991		Total	6541		Total	76252	
United States	4541	22.2	United States	2402	41.8	Thailand	749	37.6	Thailand	2814	43.0	United States	15888	20.8
Germany	3116	15.2	Germany	470	8.2	China	601	30.2	India	1122	17.2	Japan	8167	10.7
United Kingdom	1825	8.9	United Kingdom	412	7.2	Viet Nam	292	14.7	China	966	14.8	China	6984	9.2
France	1499	7.3	Canada	347	6.0	Germany	65	3.2	Japan	385	5.9	Germany	3892	5.1
Spain	932	4.6	Viet Nam	277	4.8	United States	62	3.1	Malaysia	229	3.5	Republic of Korea	3331	4.4
Turkey	845	4.1	Thailand	215	3.7	Japan	38	1.9	Republic of Korea	160	2.4	Australia	2808	3.7
Canada	813	4.0	Japan	208	3.6	France	26	1.3	Viet Nam	103	1.6	Switzerland	2774	3.6
Italy	726	3.5	Singapore	160	2.8	India	20	1.0	Singapore	83	1.3	Malaysia	2599	3.4
Netherlands	613	3.0	France	149	2.6	Republic of Korea	20	1.0	Germany	78	1.2	Hong Kong, China	1960	2.6
Belgium	539	2.6	Spain	142	2.5	Belgium	19	1.0	Taiwan, China	64	1.0	United Kingdom	1913	2.5
Poland	380	1.9	China	94	1.6	Netherlands	15	0.7	United Arab Emirates	60	0.9	France	1901	2.5
Japan	374	1.8	Poland	88	1.5	Italy	14	0.7	Pakistan	59	0.9	Philippines	1754	2.3
India	358	1.8	Italy	84	1.5	Poland	10	0.5	United Kingdom	52	0.8	Singapore	1610	2.1
Denmark	279	1.4	Netherlands	61	1.1	Canada	8	0.4	Spain	48	0.7	Spain	1426	1.9
China	269	1.3	Republic of Korea	43	0.8	Spain	8	0.4	Hong Kong, China	41	0.6	Thailand	1397	1.8
Austria	254	1.2	Mexico	43	0.8	Taiwan, China	7	0.4	Indonesia	32	0.5	Taiwan, China	1258	1.7
Sweden	251	1.2	Austria	43	0.7	Denmark	5	0.2	Cote d'Ivoire	31	0.5	Netherlands	1190	1.6
Russian Federation	195	1.0	Belgium	42	0.7	Austria	5	0.2	Turkey	24	0.4	Italy	1180	1.5
Slovak Republic	145	0.7	Switzerland	35	0.6	Ireland	4	0.2	Burkina Faso	19	0.3	Indonesia	1142	1.5
Switzerland	144	0.7	Russian Federation	34	0.6	Hong Kong, China	3	0.2	Russian Federation	14	0.2	Canada	1140	1.5

Sources: Same as Figure 1.

Note: Countries in **bold letters** imposed general or specific import bans on Myanmar goods. Taiwan, China refers to Taiwan Province of China.

Table 2
Top 10 export items of Myanmar and peers (2010)

Cambodia				Lao PDR				Myanmar				Viet Nam			
HS Code	Description	Value in USD, mil.	%	HS Code	Description	Value in USD, mil.	%	HS Code	Description	Value in USD, mil.	%	HS Code	Description	Value in USD, mil.	%
Total		5748	100	Total		1991	100	Total		6541	100	Total		76252	100
1 61	Apparel articles: knitted or crocheted	3081	53.6	74	Copper and articles thereof	466	23.4	27	Mineral fuels, mineral oils and products of their distillation	2640	40.4	85	Electrical machinery and equipment and parts thereof	8807	11.5
2 62	Apparel articles: not knitted or crocheted	1119	19.5	26	Ores, slag and ash	419	21.0	7	Edible vegetables and certain roots and tubers	997	15.2	64	Footwear, gaiters, etc.	8244	10.8
3 64	Footwear, gaiters, etc.	524	9.1	44	Wood and articles of wood	324	16.3	44	Wood and articles of wood	859	13.1	27	Mineral fuels, mineral oils and products of their distillation	7397	9.7
4 40	Rubber and articles thereof	201	3.5	27	Mineral fuels, mineral oils and products of their distillation	287	14.4	62	Apparel articles: not knitted or crocheted	524	8.0	62	Apparel articles: not knitted or crocheted	5911	7.8
5 89	Ships, boats and floating structures	90	1.6	62	Apparel articles: not knitted or crocheted	110	5.5	3	Fish, crustaceans, and aquatic invertebrates	310	4.7	61	Apparel articles: knitted or crocheted	5184	6.8
6 87	Vehicles other than railway or tramway, and parts and accessories	77	1.3	61	Apparel articles: knitted or crocheted	79	4.0	26	Ores, slag and ash	202	3.1	94	Furniture, bedding, mattresses, mattress supports, etc.	4228	5.5
7 44	Wood and articles of wood	74	1.3	9	Coffee, tea, mate and spices	46	2.3	40	Rubber and articles thereof	199	3.0	84	Nuclear reactors, boilers, machinery and mechanical appliances, and their parts	4174	5.5
8 10	Cereals	74	1.3	10	Cereals	43	2.2	71	Natural or cultured pearls, precious or semi-precious stones, precious metals	166	2.5	3	Fish, crustaceans, and aquatic invertebrates	3694	4.8
9 25	Salt, sulphur, earths and stone	65	1.1	40	Rubber and articles thereof	25	1.2	12	Oil seeds and oleaginous fruits, miscellaneous grains, seed and fruits	98	1.5	71	Natural or cultured pearls, precious or semi-precious stones, precious metals	2757	3.6
10 71	Natural or cultured pearls, precious or semi-precious stones, precious metals	63	1.1	85	Electrical machinery and equipment and parts thereof	23	1.2	64	Footwear, gaiters, etc.	90	1.4	9	Coffee, tea, mate and spices	2563	3.4

Sources: Same as Table 1.

Table 3
Major importers of apparel and footwear from Myanmar and peers (2010)

Bangladesh			Cambodia			Lao PDR			Myanmar			Viet Nam		
Partner	Value in USD, mil.	%	Partner	Value in USD, mil.	%	Partner	Value in USD, mil.	%	Partner	Value in USD, mil.	%	Partner	Value in USD, mil.	%
Total	16919	100	Total	4723	100	Total	199	100	Total	647	100	Total	19340	100
1 United States	4073	24.1	United States	2329	49.3	Germany	54	27.1	Japan	259	40.0	United States	7795	40.3
2 Germany	2916	17.2	Germany	444	9.4	United States	34	17.3	Republic of Korea	126	19.5	Germany	1578	8.2
3 United Kingdom	1594	9.4	United Kingdom	381	8.1	France	22	11.0	Germany	77	11.9	Japan	1413	7.3
4 France	1394	8.2	Canada	340	7.2	Japan	15	7.8	Spain	47	7.3	United Kingdom	974	5.0
5 Spain	889	5.3	Japan	202	4.3	Netherland	13	6.4	United Kingdom	31	4.8	France	857	4.4
6 Canada	723	4.3	Spain	134	2.8	Belgium	10	5.0	Turkey	20	3.0	Spain	743	3.8
7 Italy	659	3.9	France	119	2.5	Italy	9	4.6	Austria	11	1.7	Republic of Korea	531	2.7
8 Turkey	649	3.8	Poland	85	1.8	Canada	8	3.9	Russian Fed.	8	1.2	Belgium	495	2.6
9 Netherlands	516	3.0	Italy	81	1.7	Spain	7	3.4	Argentina	7	1.2	Italy	442	2.3
10 Belgium	377	2.2	Netherlands	50	1.1	Denmark	5	2.4	Thailand	7	1.1	Canada	427	2.2

Sources: Same as Figure 1.

Notes: Apparel and footwear are defined as the sum of HS codes 61 (Apparel articles: knitted or crocheted), 62 (Apparel articles: not knitted or crocheted), and 64 (Footwear, gaiters, etc.).

Table 4
Gravity equation regressions

Dependent variable	(1) OLS ln(X)	(2) OLS ln(X)	(3) TOBIT ln(1+X)	(4) TOBIT ln(1+X)	(5) Poisson X	(6) Poisson X
GDP Exporter (log)	1.743 *** (0.0177)	1.367 *** (0.0215)	2.495 *** (0.0475)	2.145 *** (0.0642)	0.947 *** (0.0291)	0.671 *** (0.0277)
GDP Importer (log)	1.089 *** (0.0096)	1.023 *** (0.0109)	2.150 *** (0.0301)	1.859 *** (0.0359)	1.033 *** (0.0281)	0.993 *** (0.0220)
Distance (log)	-0.726 *** (0.0471)	-0.872 *** (0.0442)	0.316 ** (0.1280)	-0.103 (0.1287)	-1.011 *** (0.0689)	-1.014 *** (0.0459)
GDP per capita Exporter (log)		0.912 *** (0.0290)		0.871 *** (0.1072)		0.044 *** (0.6947)
GDP per capita Importer (log)		0.182 *** (0.0170)		0.741 *** (0.0531)		0.112 *** (0.0251)
Bilateral Real Exchange Rate (log)	-0.316 *** (0.0494)	-0.290 *** (0.0425)	-0.374 *** (0.1071)	-0.298 *** (0.1052)	-0.536 (0.3353)	-0.949 *** (0.2550)
Intra-ASEAN Dummy	1.511 *** (0.1335)	1.268 *** (0.1285)	0.184 (0.4175)	-0.159 (0.4120)	0.987 *** (0.1426)	0.838 *** (0.1345)
R-squared	0.756	0.783				
Pseudo R-squared			0.100	0.104	0.856	0.899
Observations	7417	7417	9730	9730	9730	9730

Source: Author's compilation.

Note: Regression equations include an intercept and year dummies, which are not reported in the table. Numbers in brackets are standard errors. *** and ** represent statistical significance levels at 1 per cent and 5 per cent, respectively.

Table 5
Potential and actual non-resource exports (average of 2005–2010)

	Potential Exports (USD, Millions)	Actual Exports (USD, Millions)	Actual/Potential (%)	Bilateral Unexhausted Potential/ Total Unexhausted Potential (%)
Total	8621	1767	20.5	100.0
1 United States	1073	0	0.0	15.7
2 Japan	1048	251	24.0	11.6
3 China	969	150	15.5	12.0
4 Thailand	763	143	18.8	9.0
5 Germany	379	92	24.4	4.2
6 India	339	501	147.7	-2.4
7 United Kingdom	294	58	19.8	3.4
8 France	286	23	8.0	3.8
9 Indonesia	280	23	8.2	3.7
10 Republic of Korea	259	61	23.5	2.9
11 Italy	242	10	4.0	3.4
12 Malaysia	241	88	36.6	2.2
13 Singapore	214	43	20.3	2.5
14 Russian Fed.	144	5	3.3	2.0
15 Spain	137	40	29.4	1.4
16 Australia	123	14	11.8	1.6
17 Hong Kong, China	112	47	42.3	0.9
18 Viet Nam	108	15	13.8	1.4
19 Canada	104	4	3.7	1.5
20 Netherlands	92	10	10.6	1.2
Rest of the World	1415	188	13.3	17.9

Source: Author's compilation.

Notes: Potential and actual exports are six year averages in constant 2005 U.S. dollar in millions.