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Emerging Economies and the Emergence of South-South Protectionism

Chad P. Bown*

Do exports resume when import-restricting temporary trade barriers *(TTBs) such as antidumping are finally removed? First, this paper uses data from the World Bank's* Temporary Trade Barriers Database *to update through 2011 a number of inter-temporal indicators of import protection. Second, it highlights the economic significance of emerging economy exporters affected by frequently bilateral import restrictions imposed by other emerging economies, that is, South-South protectionism. Third, it finds that China's exporters respond quickly and aggressively to the market access opening embodied in the removal of such import restrictions. This result differs markedly from the slow and tepid export response of* other *emerging economies, especially when the TTB had been imposed by another emerging economy.*

1 INTRODUCTION

As the world economy struggled to climb out of the Great Recession during 2009–2011, emerging markets were the source of much of the relatively meagre economic growth taking place. The International Monetary Fund (IMF) (2011) estimates that emerging economies contributed more than 75% of total global Gross Domestic Product (GDP) growth in 2011 even though they accounted for less than half of world GDP. For countries seeking an export-led growth strategy, one implication is the need to *reorient* trade to take advantage of emerging market growth.[1]

However, as the global economy rebalances after the Great Recession, policymakers in emerging markets have been placed under increased pressure to impose new import restrictions, perhaps partially *because of* the adjustment pressure

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[1] This reorientation is not limited to *emerging* economies' export-led growth strategies. According to the US President's Council of Economic Advisers (CEA 2011, Figure 4–12, 102), more than 70% of nominal US export growth between 2009 and 2014 associated with the potential doubling of US exports was expected to derive from exports to emerging markets.

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associated with the reorientation of exports. While many emerging economies withstood pressure to raise generally applied import tariffs early in the crisis (Kee et al., forthcoming), a growing number implemented significant new bilateral import restrictions through antidumping, safeguards and countervailing duty policies – referred to jointly as temporary trade barriers (TTBs). Bown (2011) used data from the World Bank's *Temporary Trade Barriers Database* to show that, in comparison with pre-Great Recession levels of 2007, seven major emerging economy G20 members collectively increased by roughly 40% the share of nonoil import product lines that they subjected to these import restrictions by 2009.[2] Newly available data for these economies indicates that coverage was an additional 13% higher in 2011 than 2009, and thus stands 67% higher than 2007. This 67% increase is particularly large relative to only a 13% increase for this same period by *high-income* G20 member economies, countries that have gone through a much weaker period of economic growth.

This paper provides a threefold examination of issues concerning emerging economies and these newly evolving forms of import protection. First, we characterize the heterogeneous economic significance of TTB use across policy-imposing countries.[3] Second, we identify which emerging market *exporters* are adversely affected by such policies, thereby highlighting the extent to which these policies affect South-South trade. Third, given that these trade barriers are supposed to be *temporary*, we examine the important but previously unaddressed issue concerning the export response after the trading partner removes the import protection. *Do exports resume*?

Section 2 provides an inter-temporal, country-by-country assessment of emerging economy imports affected by the TTBs that their own governments impose. We use newly updated data from the *Temporary Trade Barriers Database* and extend results first presented in Bown (2011) along three dimensions: additional time coverage through 2011, additional policy-imposing country coverage, and a more comprehensive depiction of impacted trading partner coverage. The analysis covers twenty-four policy-imposing high-income and emerging economies that collectively accounted for more than 80% of global GDP and 86% of world merchandise imports in 2011, and it includes a number of smaller (non-G20) emerging economies for the first time. While there is evidence of a continued increase in TTB coverage of imports by emerging markets, and a number of major

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[2] Throughout this paper, we use 'imports' and 'nonoil imports' interchangeably and 'exports' and 'nonoil exports' interchangeably; i.e., our analysis always strips away oil products from total imports, total exports and TTB policy actions.

[3] Antidumping and related TTBs have a much longer history of both policy use by high-income economies such as the United States and European Union and research examining this policy use. See, for example, Finger (1992).

G20 emerging economies in particular, we also document substantial heterogeneity across policy-imposing countries.

Section 3 shifts perspective to emerging market *exporters* impacted by foreign-imposed TTBs. First, we estimate that by 2011, 3% of emerging economy exports overall were covered by foreign-imposed TTBs, up from 2.5% a decade earlier. Second, a number of different emerging market exporters are adversely affected by trading partner use of TTBs; for example, by 2011, nearly 5% of China's total nonoil exports were covered by TTBs. However, China's experience is not unique; by 2011, Vietnam, Russia and Ukraine had a *higher* share of their nonoil exports impacted by foreign TTBs than even China. Other exporters significantly impacted by foreign-imposed TTBs include India, Thailand, Pakistan, Mexico, Kazakhstan and Indonesia. Third, we identify for each exporter the extent to which this TTB coverage of its exports results from South-South protectionism.

Given the economic significance of South-South protectionism, section 4 investigates the key issue of what happens to emerging economy exports once a previously imposed *temporary* trade barrier is removed and exports become 'free' (in theory) to resume. We construct a sample of nearly 750 antidumping import restrictions that G20 member economies had imposed and removed between 1992 and 2008. We trace the impact of import restrictions on product-level exports for *two* different five-year windows – that is, one window timed around the *imposition* of the original import restriction and one timed around its *removal*.

Our results provide evidence of a number of previously undocumented features of the export response to TTB removals. On average and relative to other exporters, China's exports resume quickly and aggressively after a foreign trading partner removes an antidumping import restriction. However, for all other exporters, the evidence is not nearly as positive. Other emerging economy exporters have a particularly difficult time regaining lost export sales and restoring export market share after a trading partner removes an import restriction, especially in the case of exports sent to *other* emerging economies.

Section 5 concludes with a discussion of a number of questions these results raise for future research as well as policy implications.

2 TEMPORARY TRADE BARRIERS IMPOSED BY EMERGING ECONOMIES

An increasing number of emerging economies have imposed antidumping, countervailing duties and safeguards – collectively referred to here as TTBs – over an increasing share of their imports. Table 1 summarizes newly constructed indicators on TTB use through 2011 for fifteen emerging economies broken into

Table 1 TTB Policy-Imposing Economies and Affected Imports in 2011

	Product line share of imports		*2011 Trade-weighted share of imports*				
	…subject to all TTBs in 2011	*…subject to all TTBs in 2001*	*…subject to all TTBs*	*…subject to AD only*	*…from China subject to all TTBs*	*…from other emerging economies subject to all TTBs*	*…from high-income economies subject to all TTBs*
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
G20 emerging economies	3.2*	1.5*	3.3*	3.0*	10.8†	2.3†	1.7†
1. India	6.9	2.8	6.3	5.8	21.9	3.0	2.7
2. Turkey	6.9	1.5	4.3	2.6	16.0	4.2	2.1
3. China	1.4	0.3	3.2	3.2	.	1.1	3.9
4. Argentina	3.3	2.4	2.5	2.5	6.8	1.9	1.2
5. Brazil	1.9	1.2	1.7	1.7	4.4	1.0	1.2
6. Indonesia	1.8	0.9	1.2	0.8	2.4	1.5	0.8
7. South Africa	0.6	1.3	0.3	0.3	0.4	0.3	0.3
8. Mexico	1.1	23.4	0.3	0.3	0.5	0.7	0.2
Other emerging economies							
1. Pakistan	0.3	.	1.4	1.4	2.5	2.0	0.7
2. Peru	2.5	0.8	1.3	1.3	3.6	1.3	0.3
3. Thailand	0.6	<0.1	1.2	1.2	1.2	0.8	1.3
4. Colombia	0.9	0.4	0.5	0.5	3.4	0.1	<0.1
5. Malaysia	<0.1	<0.1	0.2	0.2	<0.1	0.4	0.1

		Product line share of imports		*2011 Trade-weighted share of imports*				
		…subject to all TTBs in 2011	*…subject to all TTBs in 2001*	*…subject to all TTBs*	*…subject to AD only*	*…from China subject to all TTBs*	*…from other emerging economies subject to all TTBs*	*…from high-income economies subject to all TTBs*
		(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
6.	Philippines	0.1	0.3	<0.1	<0.1	0.1	<0.1	<0.1
7.	Chile	<0.1	0.8	<0.1	<0.1	0.0	<0.1	<0.1
G20 high-income economies		1.9	1.8	2.2	2.1	4.7	1.9	1.0
1.	United States	5.8	4.6	4.0	3.9	8.3	3.6	2.1
2.	European Union	3.1	2.3	1.8	1.7	4.2	1.2	0.8
3.	Canada	1.1	2.2	0.7	0.7	2.1	0.5	0.4
4.	Australia	0.7	0.6	0.5	0.4	1.2	0.1	0.3
5.	South Korea	0.6	0.6	0.4	0.4	0.6	0.9	0.1
6.	Japan	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Other high-income economies								
1.	New Zealand	0.4	0.1	1.1	1.1	0.4	0.3	1.4
2.	Israel	0.3	0.1	0.3	0.3	1.7	0.1	0.1
3.	Taiwan, China	0.4	0.1	0.2	0.2	0.8	<0.1	<0.1

Notes: Shares of nonoil imports. Ranked by column (3) within each category of policy-imposing economy. TTB = temporary trade barrier and includes antidumping (AD), countervailing duties, global safeguards and China-specific transitional safeguards.

*Aggregation does not include Mexico as policy-imposing economy, for reasons discussed in the text. †Aggregation does not include China or Mexico as policy-imposing economies.

two cohorts – members and non-members of the G20.[4] The approach follows the methodology proposed in Bown (2011), which reported data on policy use through 2009 for a more limited set of countries.[5] As a point of comparison, the lower third of the table reports policy use by nine high-income economies also included in the *Temporary Trade Barriers Database*.

Consider first column (1) of Table 1 which reports the share of import product lines, at the six-digit Harmonized System (HS-06) level, over which the policy-imposing economy had at least one import-restricting TTB in effect in 2011. To clarify, this measure captures the 'stock' of products covered by the accumulation of TTBs over time, and that were in effect in 2011. The emerging economy G20 members collectively had 3.2% of their import product lines subject to TTBs in 2011; for comparison, this is more than double their import coverage (1.5%) from a decade earlier, as reported by column (2).[6] Six of the eight individual G20 emerging economies had higher levels of import coverage in 2011 relative to 2001 – the two exceptions are Mexico and South Africa. In comparison, the cohort of six *high-income* economy G20 members in the sample combined to increase their coverage to only 1.9% of import product lines in 2011, up from 1.8% in 2001.

Columns (3) through (7) of Table 1 report information for each of the twenty-four policy-imposing economies' use of temporary trade barrier policies in 2011 based on an alternatively constructed measure that *trade-weights* policy use by bilateral, product-level (HS-06) import data. The four cohorts of policy-imposing economies in Table 1 are each ranked by column (3). For example, among the cohort of emerging economy G20 members, this coverage ranged from a low of 0.3% of imports (Mexico) to a high of 6.3% of imports (India). Turkey, China, Argentina, Brazil and Indonesia also had a significant share of imports affected by TTBs in 2011. From the non-G20 cohort of emerging economies, Pakistan, Peru and Thailand each had more than 1% of imports subject to TTBs in 2011.

Column (4) provides information to disentangle the extent to which the country relies exclusively on its antidumping policy to implement TTBs. For example, while 6.3% of India's imports were subject to some TTB policy in 2011, 5.8% of India's imports were subject to antidumping alone. The differential of 0.5

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[4] The only G20 countries not included in the policy-imposing economy analysis are Russia, which had not yet acceded to the WTO and thus become subject to multilateral disciplines (and reporting requirements) on TTB use during this period, and Saudi Arabia.

[5] The Appendix to the on-line working paper version of this paper (Bown, 2012a) provides a more complete discussion of the methodology and data used to construct the two main measures reported in Table 1, as well as benefits and caveats associated with each approach.

[6] This includes Argentina, Brazil, China, India, Indonesia, South Africa and Turkey. To be consistent with Bown (2011), Mexico is omitted from this particular aggregation given that it removed antidumping import restrictions on China in 2008 that covered over 20% of its import product lines and had been in effect since 1993.

is thus the percentage of India's imports subject to some *other* TTB policy. Antidumping is the most commonly used TTB policy for each economy, and India's 0.5 percentage point differential is relatively high for the year 2011, though it is not unprecedented in the longer time series of data capturing policy use, as we observe below. Countries with significant imports subject to some TTB policy in effect in 2011 *other than* antidumping include India, Turkey, Indonesia, the United States and the European Union.

Columns (5), (6) and (7) of Table 1 summarize information on the *foreign source* of the imports that the policy-imposing country subjects to its TTBs in 2011, categorizing based on whether the imports derive from China, another emerging economy (non-China), or a high-income economy. For example, while 6.3% of India's total imports were subject to some TTB policy in 2011, 21.9% of its imports from China were subject to a TTB, compared to only 3.0% of its imports from other emerging economies and 2.7% of imports from high-income trading partners. Furthermore, while India's TTBs against China establish the high end of the range of outcomes, TTB coverage of a greater-than-average share of imports from China is common across policy-imposing countries. In fact, nineteen of the twenty-three policy-imposing countries (non-China) reported in Table 1 have TTBs that covered a larger share of their total imports from China (column 5) than their overall average (column 3) in 2011. Chile, Japan, Malaysia and New Zealand are the only exceptions, and each of these countries is a small overall user of TTBs in 2011. Collectively, six of the emerging economy G20 members covered 10.8% of their imports from China in 2011 with TTBs.[7] While it has been long recognized that WTO member countries have increasingly used antidumping and other TTBs to target China's exports since its 2001 accession (Messerlin, 2004), to our knowledge, Table 1 presents the first quantification of its inter-temporal trade coverage based on product-level data.

Figure 1 presents a longer time series and other informative indicators on TTB use for each of the fifteen emerging economies summarized by Table 1. The column a panels in Figure 1 follow Bown (2011, Figure 1) and updates through 2011 information on the 'stock' (TTBs in effect) and 'flow' (new TTB investigations) measures for imports affected each year, by all TTB policies and for the antidumping policy alone. The column b panels in Figure 1 provide a new characterization of the trading partner incidence of TTBs; it plots the share of annual imports covered by TTBs deriving from China, from other emerging economies (non-China), and from high-income economies.

[7] To present this data consistently, we again omit Mexico from the aggregation. When we include Mexico, 8.1% of China's exports to the G20 emerging economies were covered by a TTB by 2011.

Figure 1 Emerging Economy Imports Affected by TTBs through 2011

a. By Policy

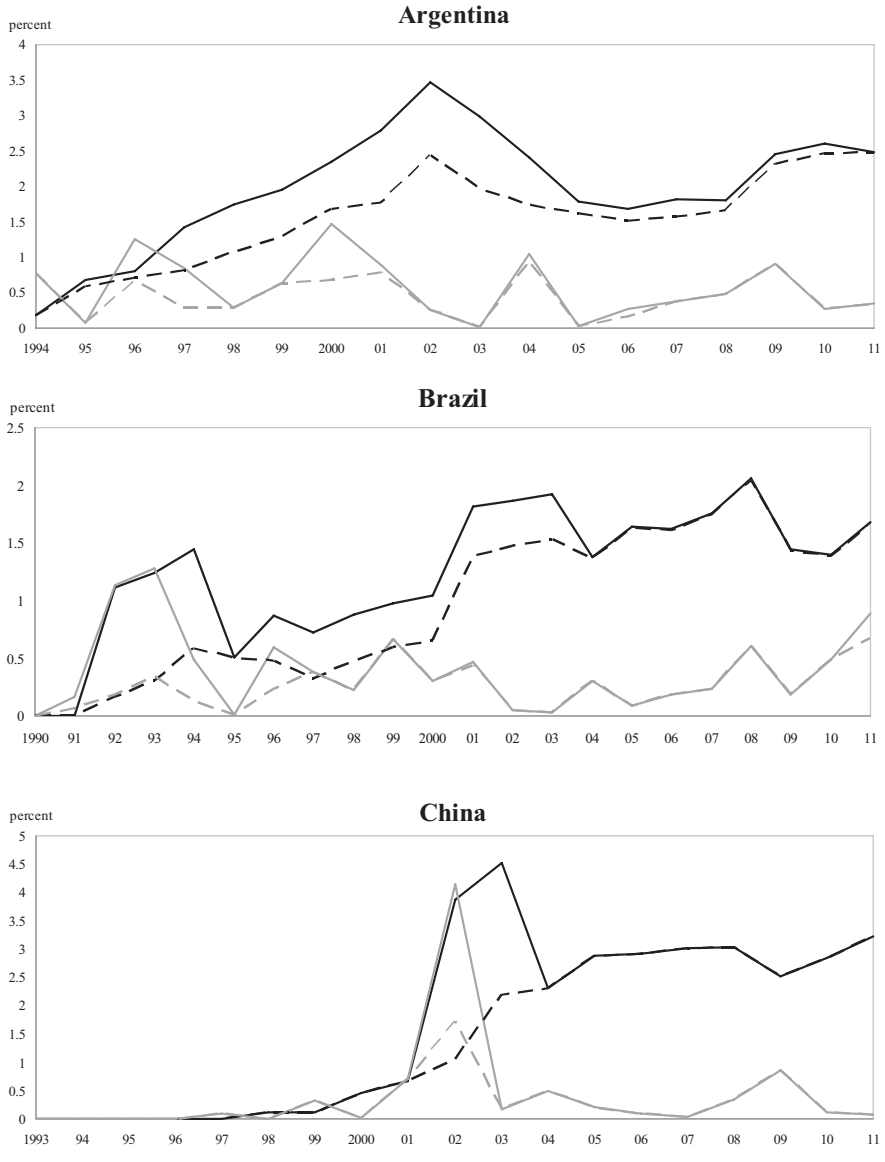
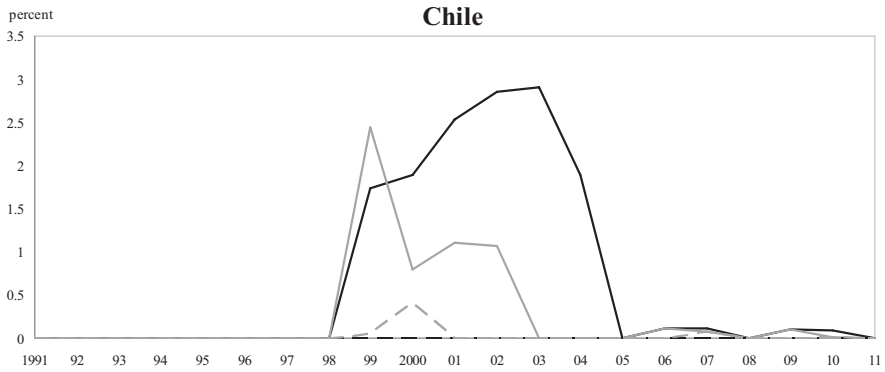
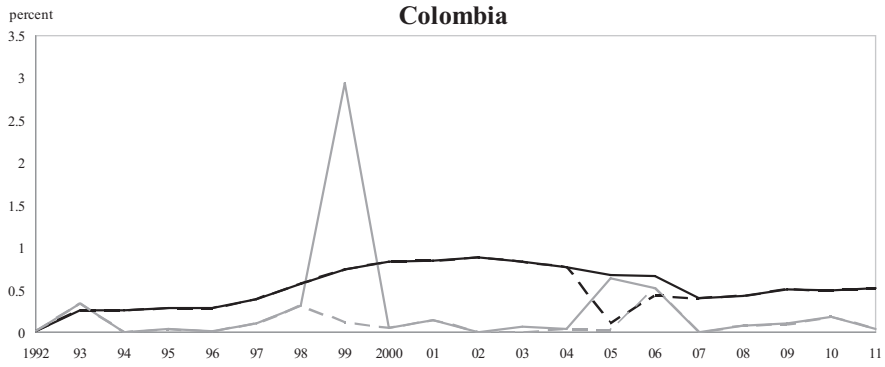


Figure 1 Emerging Economy Imports Affected by TTBs through 2011 (cont.)

a. By Policy





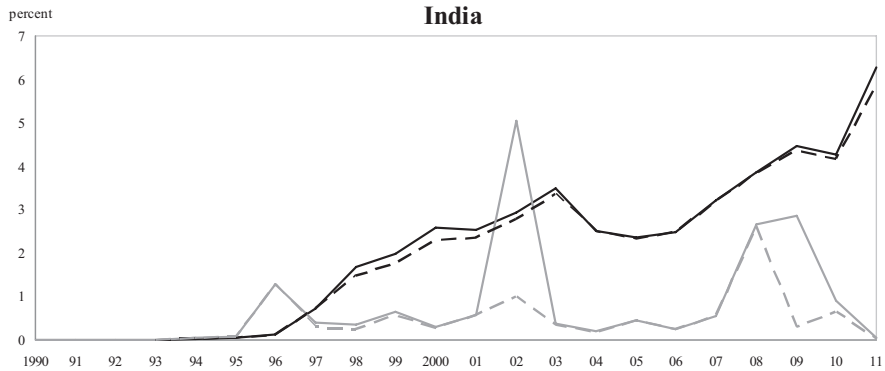


Figure 1 Emerging Economy Imports Affected by TTBs through 2011 (cont.)

a. By Policy

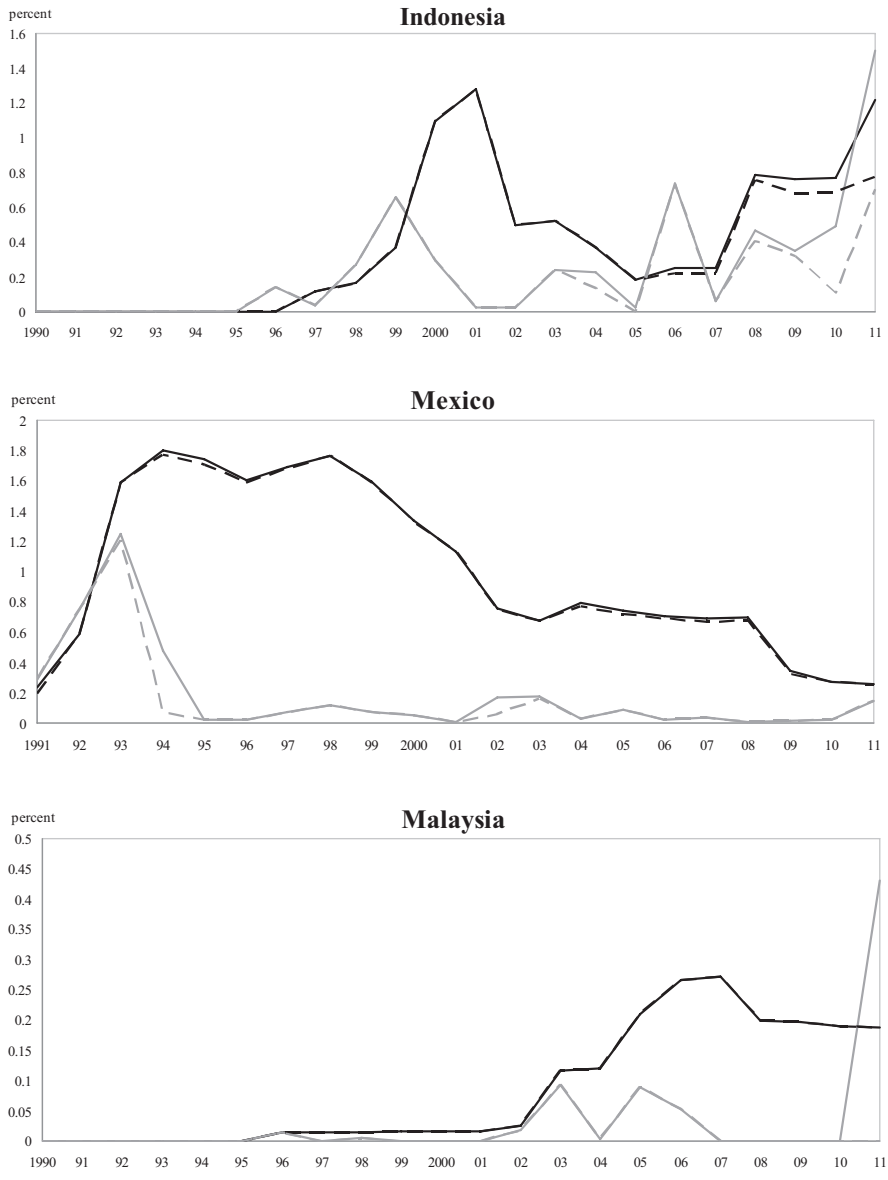


Figure 1 Emerging Economy Imports Affected by TTBs through 2011 (cont.)

a. By Policy

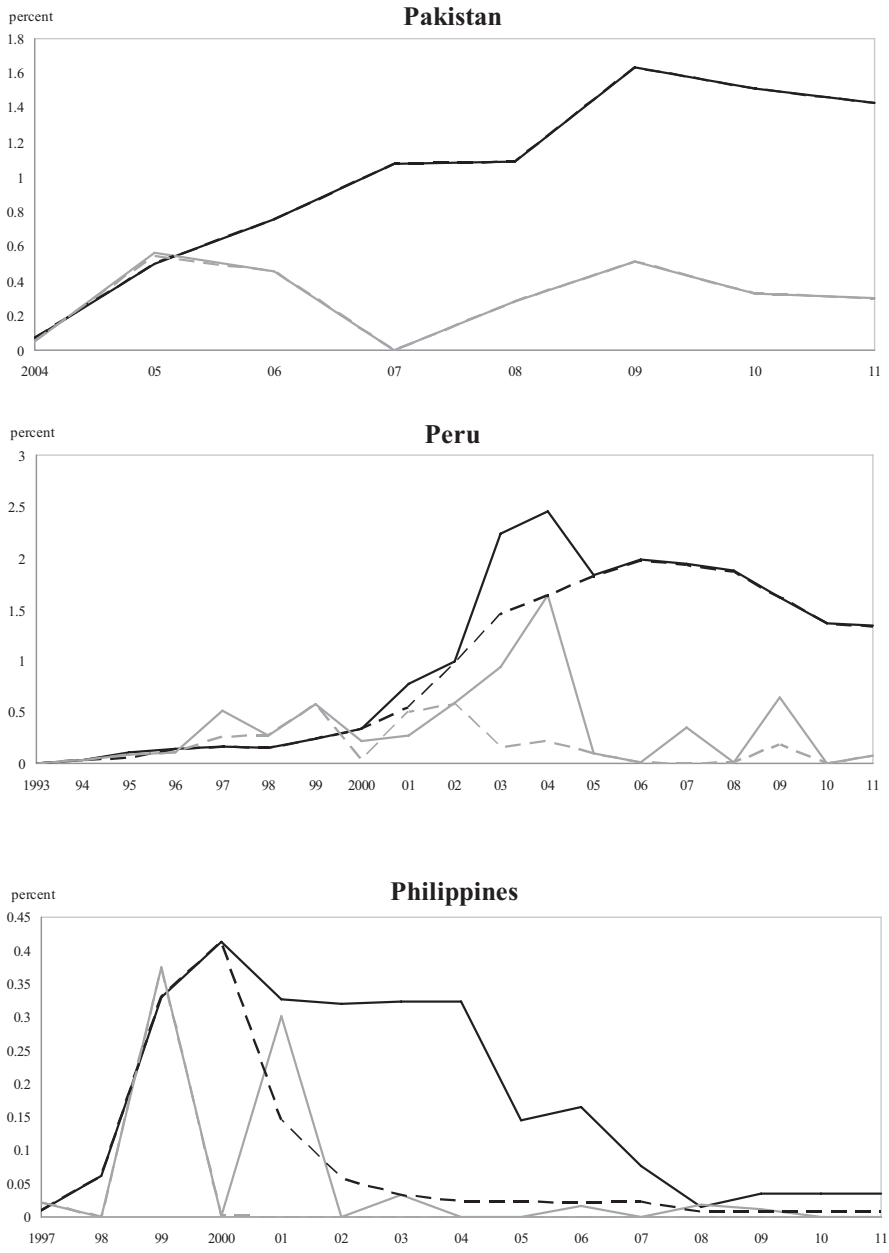


Figure 1 Emerging Economy Imports Affected by TTBs through 2011 (cont.)

a. By Policy

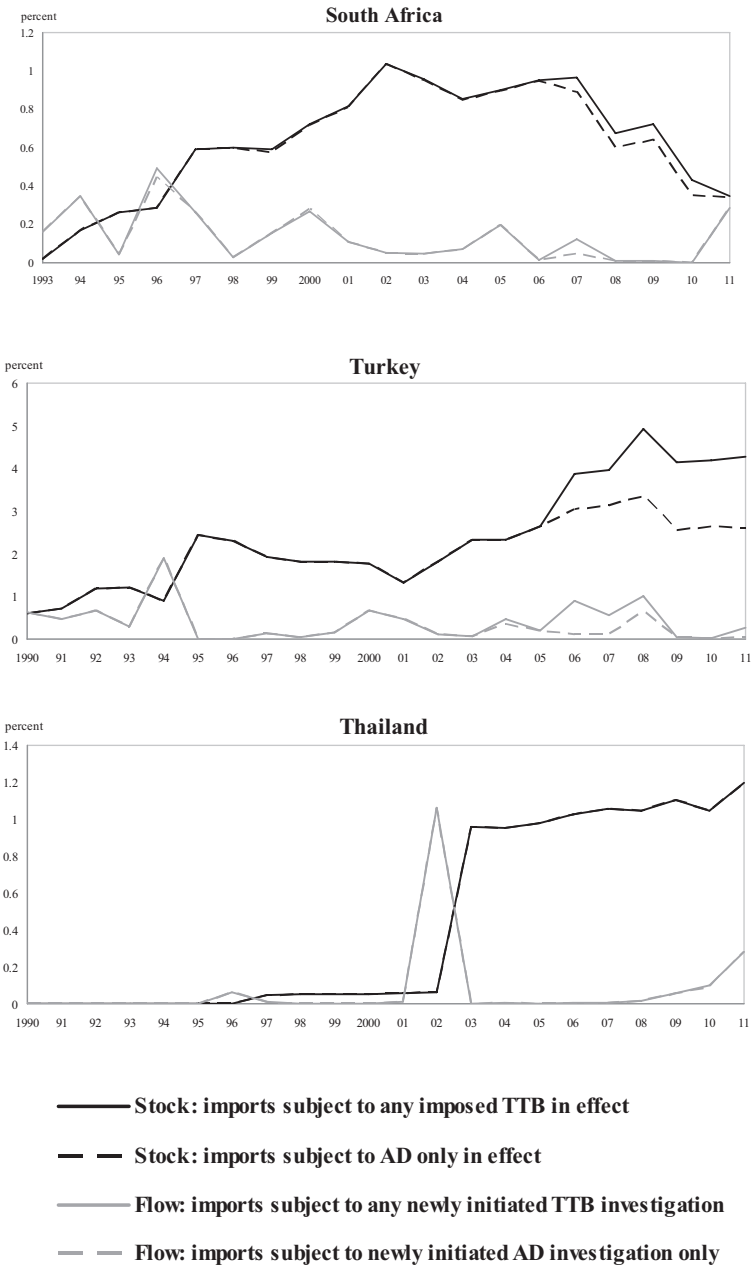


Figure 1 Emerging Economy Imports Affected by TTBs through 2011 (cont.)

b. By Category of Affected Trading Partner

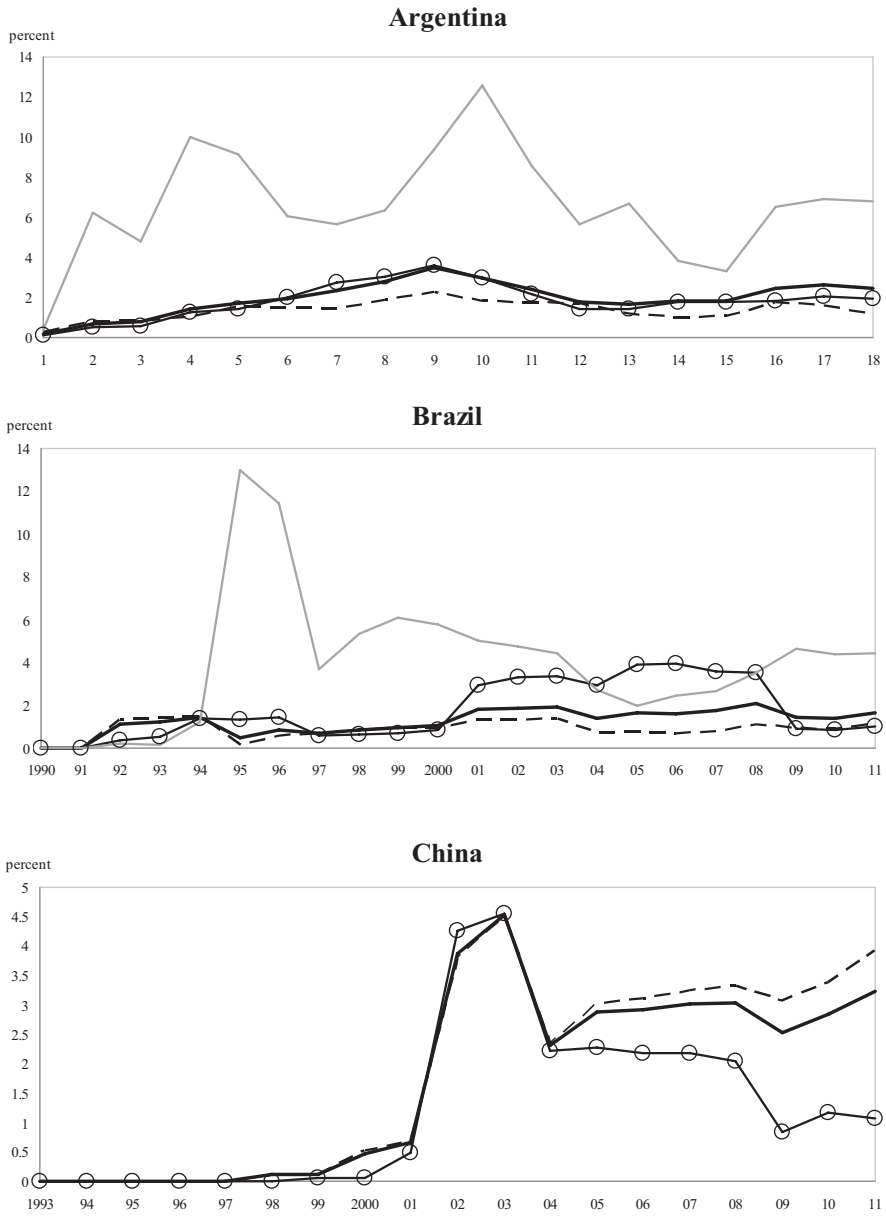


Figure 1 Emerging Economy Imports Affected by TTBs through 2011 (cont.)

b. By Category of Affected Trading Partner

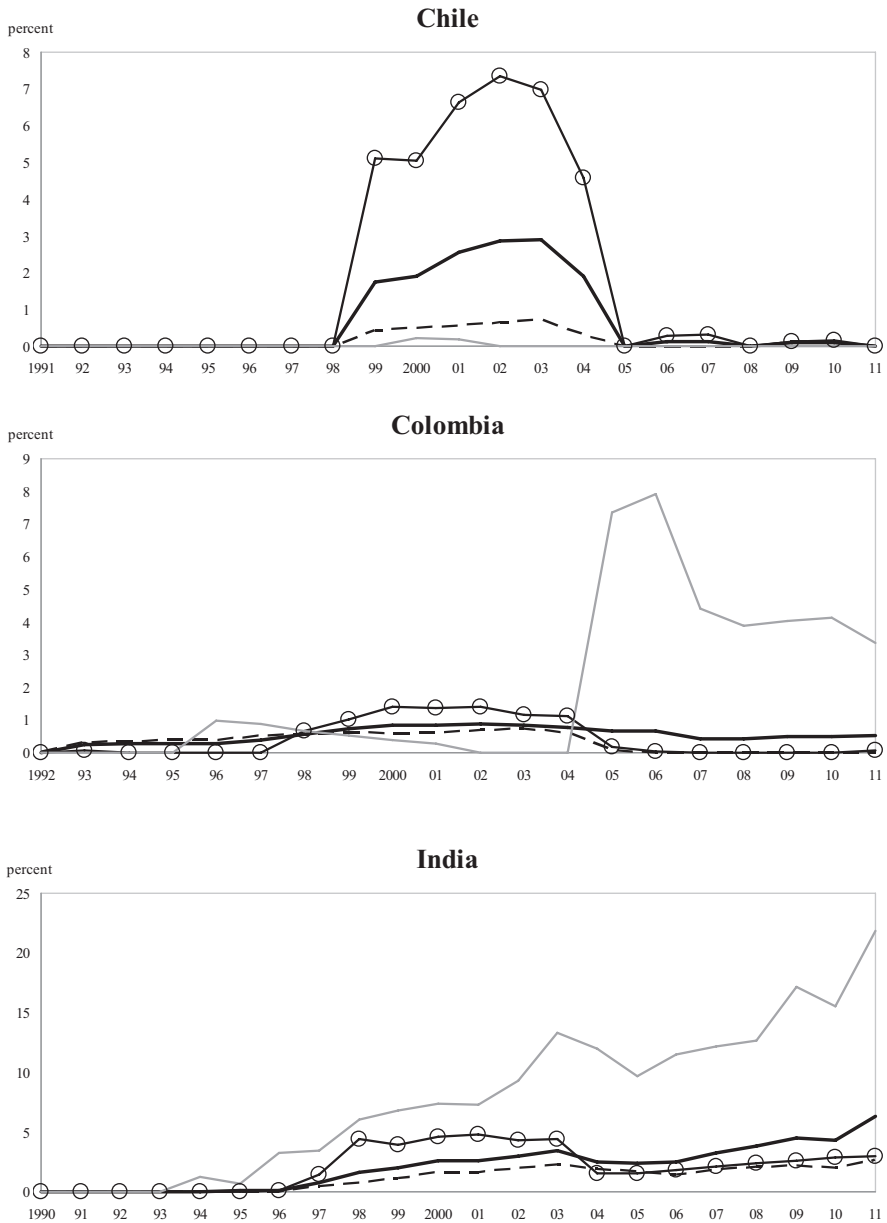


Figure 1 Emerging Economy Imports Affected by TTBs through 2011 (cont.)

b. By Category of Affected Trading Partner

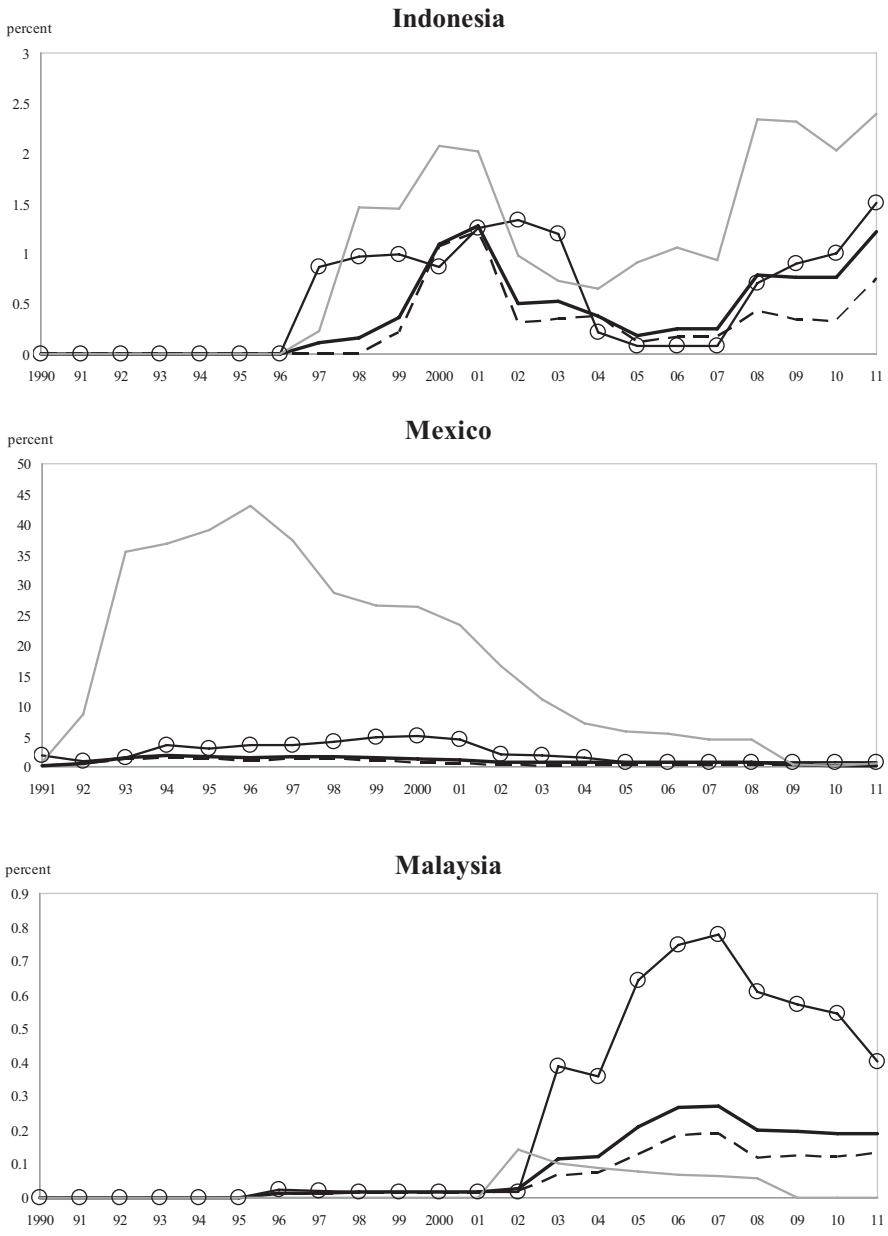


Figure 1 Emerging Economy Imports Affected by TTBs through 2011 (cont.)

b. By Category of Affected Trading Partner

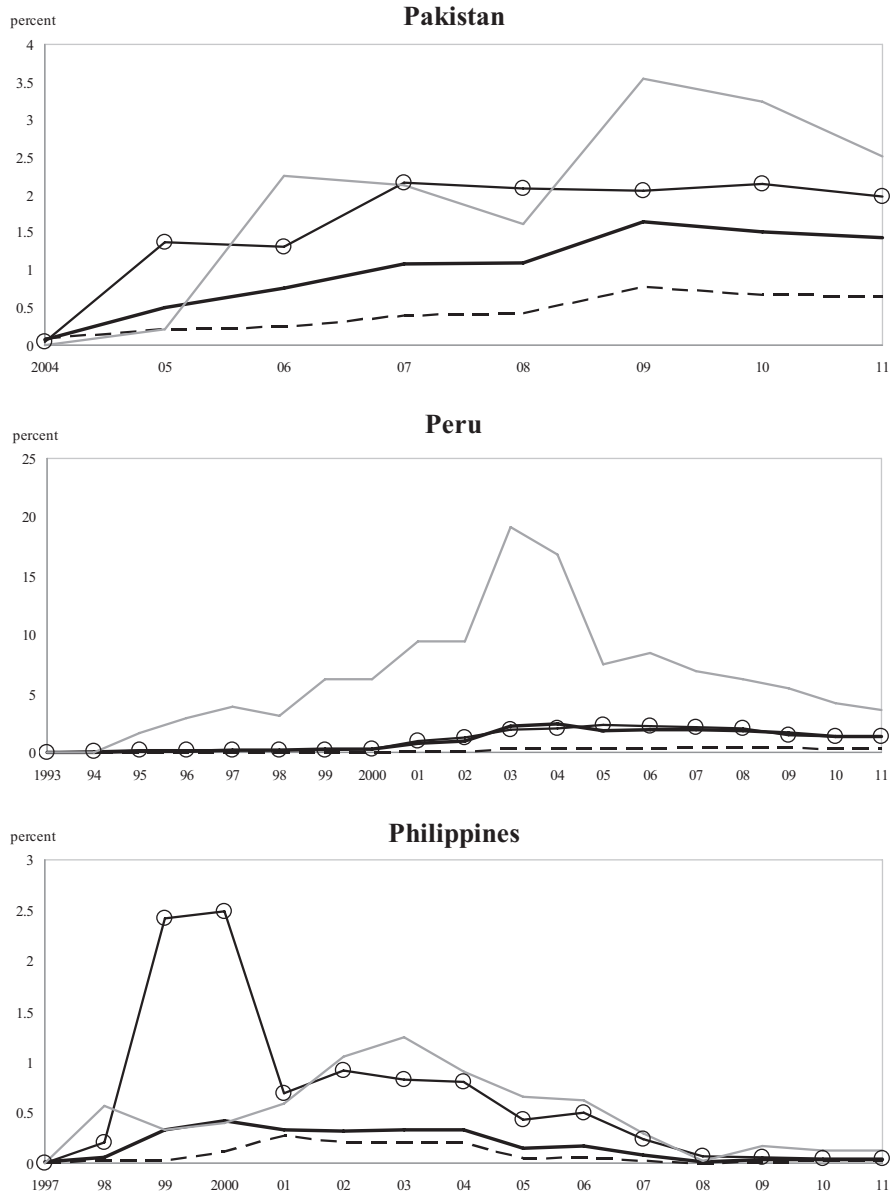
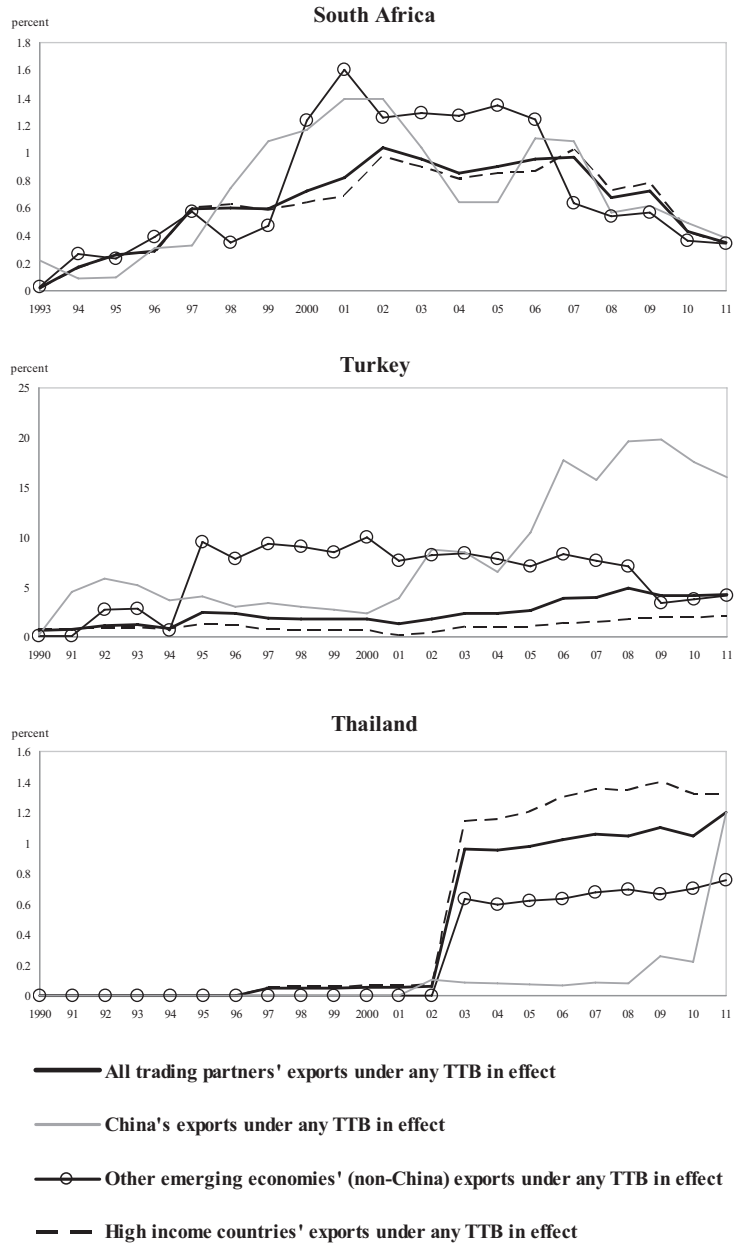


Figure 1 Emerging Economy Imports Affected by TTBs through 2011 (cont.)

b. By Category of Affected Trading Partner



Notes: Shares of nonoil imports, constructed by the author with policy data from Bown (2012b) and trade-weighting with HS-06 import data from UN Comtrade via WITS, following Appendix equation (A2) available in the on-line working paper version (Bown, 2012a). TTB = temporary trade barrier and includes antidumping (AD), countervailing duties, global safeguards and China-specific transitional safeguards.

To interpret, consider the column a panel of Figure 1 for China's use of TTBs. The black lines refer to the 'stock' measures – that is, the share of imports each year subject to any TTB policy (black *solid* line) or the antidumping policy alone (black *dashed* line). The grey lines refer to the 'flow' measures – that is, the share of imports each year subject to a new TTB policy investigation (grey *solid* line) or new investigation under the antidumping policy alone (grey *dashed* line). China began using TTBs in 1997, even before it acceded to the WTO in 2001. Initially, its TTB use each year was small – both the flow and the accumulated stock were less than 1% of imports – and policy use was confined to antidumping so that the dashed and solid lines overlap. In 2002, similar to a number of other policy-imposing economies that year, China initiated a safeguard investigation and imposed a (non-antidumping) TTB over a significant share of imports of steel. Hence, there is both a *spike* in the TTB flow variable in 2002 and a *wedge* between the solid and dashed lines (the difference between all TTBs and antidumping only). By 2003, China's accumulated stock of TTBs covered more than 4.5% of imports. This fell sharply when the safeguard was removed in late 2003, and almost all of China's TTBs since have been confined to antidumping. During the Great Recession, China had a sharp increase in the flow of new TTB investigations (grey solid line) covering nearly 1% of imports in 2009 alone. Nevertheless, while the stock of imports covered by its TTBs (and antidumping in particular) has grown to 3.2% by 2011 – the same information summarized in column (3) and column (4) of Table 1 – the grey lines indicate that the flow of new TTB investigations fell considerably after 2009 to roughly 0.1% of annual imports in both 2010 and 2011.

A number of broad inferences drawn from China are common to other policy-imposing emerging economies in Figure 1, and they illustrate the utility of this graphical representation of the data. Over time, certain emerging economy G20 members have increased considerably the share of imports covered by TTBs. However, information from the 'flow' measures does reveal variation in the *timing* of significant deviations from the basic upward trend of import coverage, including major relative increases in TTBs in Argentina (1996, 2000, 2004, 2009), Brazil (1992–1993), India (1996, 2002, and 2008–2009), Indonesia (1999, 2006, 2011), Mexico (1993), and Turkey (1994, 2000, 2006–2008). Bown and Crowley (2012), for example, use these indicators to document evidence of an important relationship between macroeconomic shocks – such as recessions and exchange rate fluctuations – and the inter-temporal imposition of new import protection through TTBs for these particular policy-imposing economies over 1995–2010. Furthermore, the figure indicates that while antidumping is the dominant TTB policy instrument, there are periods in which the other TTB policies such as

safeguards have also played a significant role for Argentina, Brazil, India, Indonesia and Turkey.

Figure 1 also provides time series information for the first time for a number of emerging economies. While few of the non-G20 emerging economy users of TTBs had a large share of imports covered by TTBs in 2011, the first result of interest is that many went through historical episodes of significant trade coverage. For example, Chile (1999–2004), Colombia (1999, 2005–2006) and Peru (1997, 1999, 2002–2004) each experienced periods in which TTBs covered or threatened to cover more than 2% of imports in a year.[8] Furthermore, while countries like Malaysia, Pakistan and Thailand still had a relatively small share of imports covered by TTBs in 2011, their import coverage was on the same upward trajectory that other policy-imposing countries (e.g., India, Turkey) with similar trends have yet to reverse.

Next, consider the Figure 1 column b panels which describe, for each policy-imposing country, the *trading partner* incidence of the imposed TTBs in effect each year. For ease of exposition, focus again on the panel representing China as the policy-imposing country. First, the solid black line *reproduces* the solid black line from the column a panel as the share of China's imports from *all sources* that are subject to a TTB in effect that year. The other two lines the column b panel characterizes whether the foreign source of the imports was a high-income trading partner or another emerging economy. Every year after 2005, China had TTBs that were imposed over a greater share of its imports from high-income economies (dashed line) than its imports from other emerging economies (circle markers).

However, this particular result for China differs markedly from almost all other policy-imposing emerging economies. By 2011, recall from columns (6) and (7) of Table 1 that six out of the other seven G20 emerging economies and six out of the seven non-G20 emerging economies had TTBs implemented over a greater share of imports from other emerging economies (non-China) than imports from high-income economies. Figure 1 illustrates that this phenomenon has been pervasive over recent years. Furthermore, a comparison of columns (6) and (7) in the top row of Table 1 indicates that once we strip away China as an exporter *and* as an importer, 2.3% of G20 emerging economy imports from other emerging economies was covered by a TTB in 2011, as compared to only 1.7% of their collective imports from high-income trading partners. Aside from China, almost all policy-imposing emerging economies target imports from other emerging countries (non-China) at *higher* rates than they target imports from high-income countries.

[8] Finger and Nogues (2005) present case studies on these and other Latin American economies' use of TTBs as part of broader episodes of import tariff and trade liberalization during the 1990s.

Nevertheless, even more striking for almost all of the other policy-imposing emerging economies (non-China) is the grey solid line in the column b panels in Figure 1. Over a longer time series, this confirms the result summarized for 2011 by column (5) of Table 1: over the first decade of the 2000s, the share of the country's imports from China impacted by its TTBs is almost always larger than the share of the country's overall imports impacted by its TTBs.

3 EMERGING ECONOMY EXPORTERS AND THE INCIDENCE OF FOREIGN-IMPOSED TTBS

Section 2 revealed a number of important pieces of evidence confirming that South-South trade flows are significantly covered by TTBs. First, almost all emerging economies that use temporary trade barrier policies had, in 2011, TTBs in place that covered a larger share of their imports from other emerging economies than their imports from high-income economies. This holds for both their imports from China and their imports from all other emerging economies (non-China). Second, a large share of China's exports to emerging economies was subject to TTBs in 2011. Here, we examine the extent to which this phenomenon extends beyond China to other individual emerging market exporters. We begin by identifying which other emerging markets faced substantial foreign-imposed TTB coverage of their exports as of 2011; we then present an extension of this analysis backward over time.[9]

Consider Table 2, which summarizes information on the exporters most affected by the TTBs in place in 2011; it compares this to the TTB coverage of their exports a decade earlier. The indicators are constructed based on the trade-weighted measure using data on imports and policies imposed by the twenty-four major TTB-using economies covered in Table 1. The top segment of the table contains information on emerging economies affected by foreign-imposed TTBs; entries are ranked by column (1).

[9] While we first identified this issue in Bown (2011), here we make two important measurement improvements. First, we examine the incidence of all TTBs and not just antidumping. Second, we use trade-weighting to better identify the economic importance of the foreign-imposed TTBs.

Table 2 Economies with Significant Exports Subject to Foreign-Imposed TTBs: 2011 versus 2001

		TTB-affected share of exports in 2011 to…				*TTB-affected share of exports in 2001 to…*			
		… All	*… G20 high-income*	*… G20 emerging*	*… Other★*	*… All*	*… G20 high-income*	*… G20 emerging*	*… Other★*
		(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*
Emerging economy exporters		3.0	3.3	3.3	0.7	2.5	2.6	2.9	0.6
1.	Vietnam	6.2	8.1	1.3	<0.1	0.2	0.2	0.4	<0.1
2.	Russia	5.8	6.3	5.5	1.4	7.0	7.6	6.2	1.6
3.	Ukraine	5.7	7.9	1.8	0.7	12.8	12.2	18.8	1.3
4.	China	4.9	4.7	10.8†	1.0	3.2	3.4	4.2	0.2
5.	India	2.5	2.8	2.5	0.5	4.4	5.1	1.8	<0.1
6.	Thailand	2.5	2.7	3.0	0.5	3.2	3.9	1.4	0.1
7.	Pakistan	2.4	1.6	5.3	1.3	7.8	9.1	0.4	<0.1
8.	Mexico	2.1	2.3	0.5	<0.1	1.1	1.1	2.1	0.4
9.	Kazakhstan	1.7	2.8	0.2	36.9	4.1	5.0	2.4	11.4
10.	Indonesia	1.7	1.2	3.4	1.1	3.7	4.6	1.5	0.4
11.	Brazil	1.1	1.5	0.7	<0.1	2.1	1.9	3.4	0.4
12.	Malaysia	0.9	0.9	1.2	0.3	1.2	1.5	0.2	<0.1

		TTB-affected share of exports in 2011 to…				*TTB-affected share of exports in 2001 to…*			
		… All	*… G20 high-income*	*… G20 emerging*	*… Other⋆*	*… All*	*… G20 high-income*	*… G20 emerging*	*… Other⋆*
		(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*
13.	South Africa	0.4	0.3	0.4	1.0	1.0	1.1	0.8	<0.1
14.	Argentina	0.4	0.4	0.2	0.8	3.5	2.2	2.7	10.4
15.	Turkey	0.1	0.1	<0.1	0.3	1.1	1.0	2.4	0.8
16.	*Other emerging*	0.2	0.2	0.4	0.1	0.7	0.6	1.9	0.3
High-income economy exporters		1.6	1.0	2.8	0.4	3.1	4.3	0.8	0.1
1.	South Korea	4.4	3.0	6.2	0.5	2.7	3.6	1.9	0.3
2.	Taiwan, China	2.9	2.9	3.4	0.4	9.6	13.9	0.3	0.3
3.	Japan	2.2	1.5	3.8	1.0	7.1	10.1	1.3	0.2
4.	European Union	1.4	1.4	1.6	0.3	2.0	2.8	0.8	0.2
5.	United States	1.3	0.6	3.1	0.1	0.6	0.7	0.5	0.1
6.	*Other high-income*	0.3	0.2	0.5	<0.1	2.5	3.0	0.6	0.1

Notes: Shares of nonoil exports. TTB = temporary trade barrier and includes antidumping, countervailing duties, global safeguards and China-specific transitional safeguards. Ranked by column (1) within each category of exporting economy. 'All' is the twenty-four policy-imposing economies described in Table 1. ⋆ 'Other' policy-imposing economies includes Pakistan, Peru, Thailand, Colombia, Malaysia, Philippines, Chile, New Zealand, Israel, and Taiwan, China. †To be consistent with Table 1, this does not include exports to Mexico; including exports to Mexico changes the value to 8.1.

Since we are already familiar with China's indicators, begin Table 2 with China as an export target. Column (3) reminds us that 10.8% of China's collective exports to other G20 emerging markets were subject to TTBs in 2011. Overall 4.9% of China's exports to these twenty-four economies in 2011 were subject to TTBs, and this includes 4.7% of its exports to high-income G20 markets and 1.0% of its exports to the category of 'other', which is an aggregation of the ten non-G20 economies listed in Table 1. While targeting China's exports with TTBs in 2011 is not a new phenomenon, the share of its exports covered by TTBs has increased considerably since its WTO accession in 2001, when only 3.2% of its total exports were subject to TTBs.

Table 2 identifies other exporting countries that are particularly affected by foreign-imposed TTBs. Column (1) reveals that Vietnam, Russia and Ukraine have a larger share of 2011 total nonoil exports subject to foreign-imposed TTBs than China. For Russia and Ukraine, this is not a recent phenomenon. While the export coverage in 2011 is high relative to other countries, column (2) indicates that it is actually lower than each country's exporters faced in 2001. Furthermore, unlike China, these three exporters had a larger share of exports to high-income G20 economies subject to TTBs in 2011 than exports to other emerging G20 economies.

Other emerging economies with a sizeable share of exports impacted by foreign-imposed TTBs include India, Thailand, Pakistan, Mexico, Kazakhstan, Indonesia and Brazil – each had more than 1% of total exports subject to foreign-imposed TTBs in 2011. Thailand, Pakistan and Indonesia were like China and had a larger share of their exports to other emerging economies subject to TTBs than their exports to high-income economies. These are examples of other exporting countries for which South-South protectionism is particularly important.

As a final point of comparison, the lowest rows in Table 2 show the impact of TTBs on export coverage of high-income economies. One potential cause for *optimism* for the major emerging economy exporters currently subject to substantial TTB coverage is the experience of Japan and Taiwan, China – two economies from an earlier generation that pursued export-led growth strategies. These two economies each experienced significant *reductions* in their share of exports covered by foreign-imposed TTBs between 2001 and 2011: from 7.1% to 2.2% for Japan and from 9.6% to 2.9% for Taiwan, China.

Figure 2 plots these indicators over a longer time series for the fifteen emerging economy exporters from Table 2. The black solid line plots the share of total exports (to all twenty-four policy-imposing markets) subject to TTBs in each year; the other lines plot the TTB-affected share of exports to high-income G20, emerging G20 and 'other' (ten) policy-imposing trading partners, respectively. Figure 2 reveals one way that China is unique: its overall exports and its exports to each of the three different categories of policy-imposing trading partners have become increasingly subject to additional TTB coverage.

Figure 2 Emerging Economy Exports Affected by Foreign-Imposed TTBs, 1995–2011

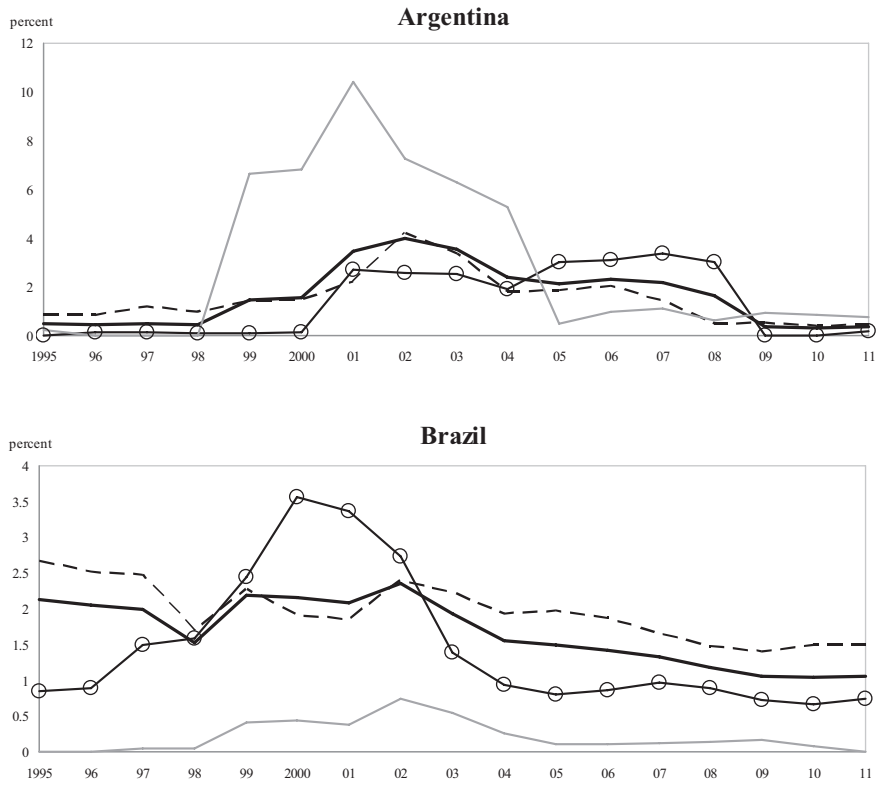


Figure 2 Emerging Economy Exports Affected by Foreign-Imposed TTBs, 1995–2011 (cont.)

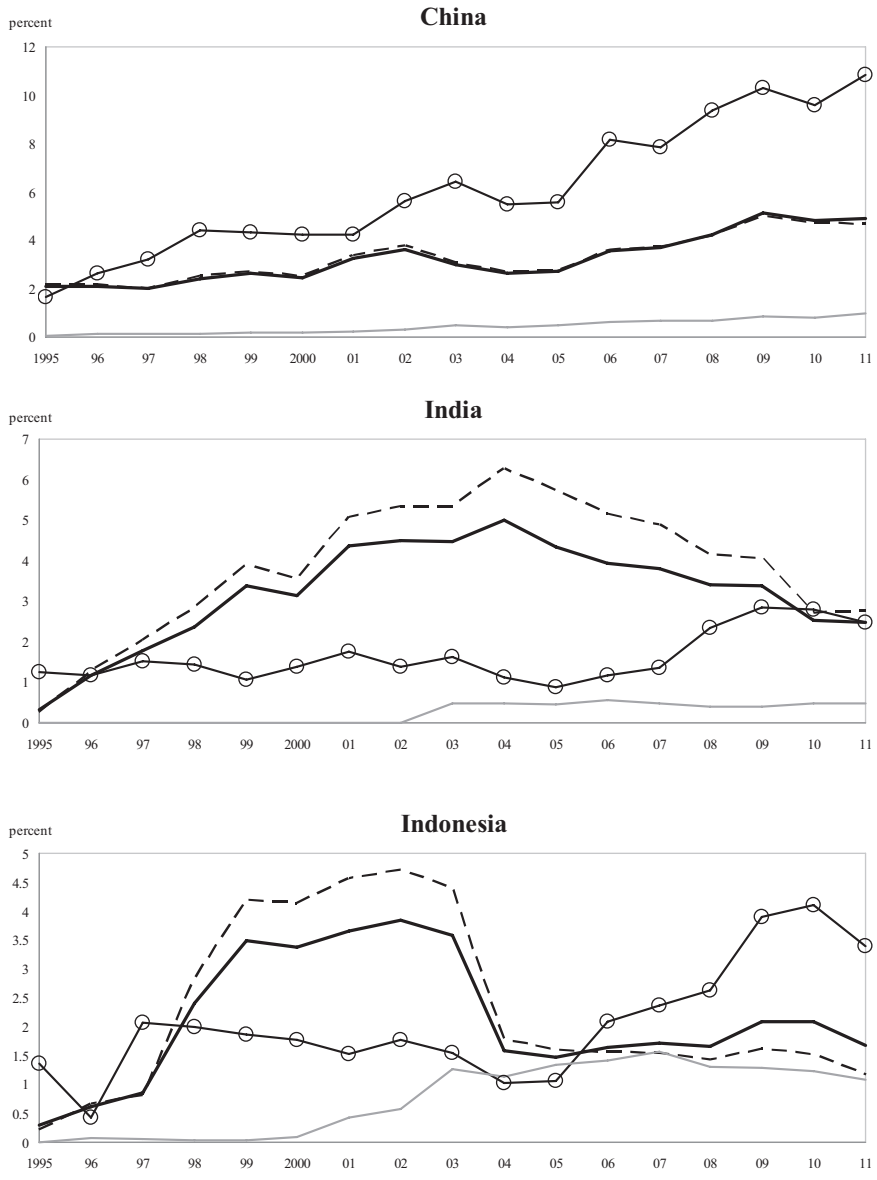


Figure 2 Emerging Economy Exports Affected by Foreign-Imposed TTBs, 1995–2011 (cont.)

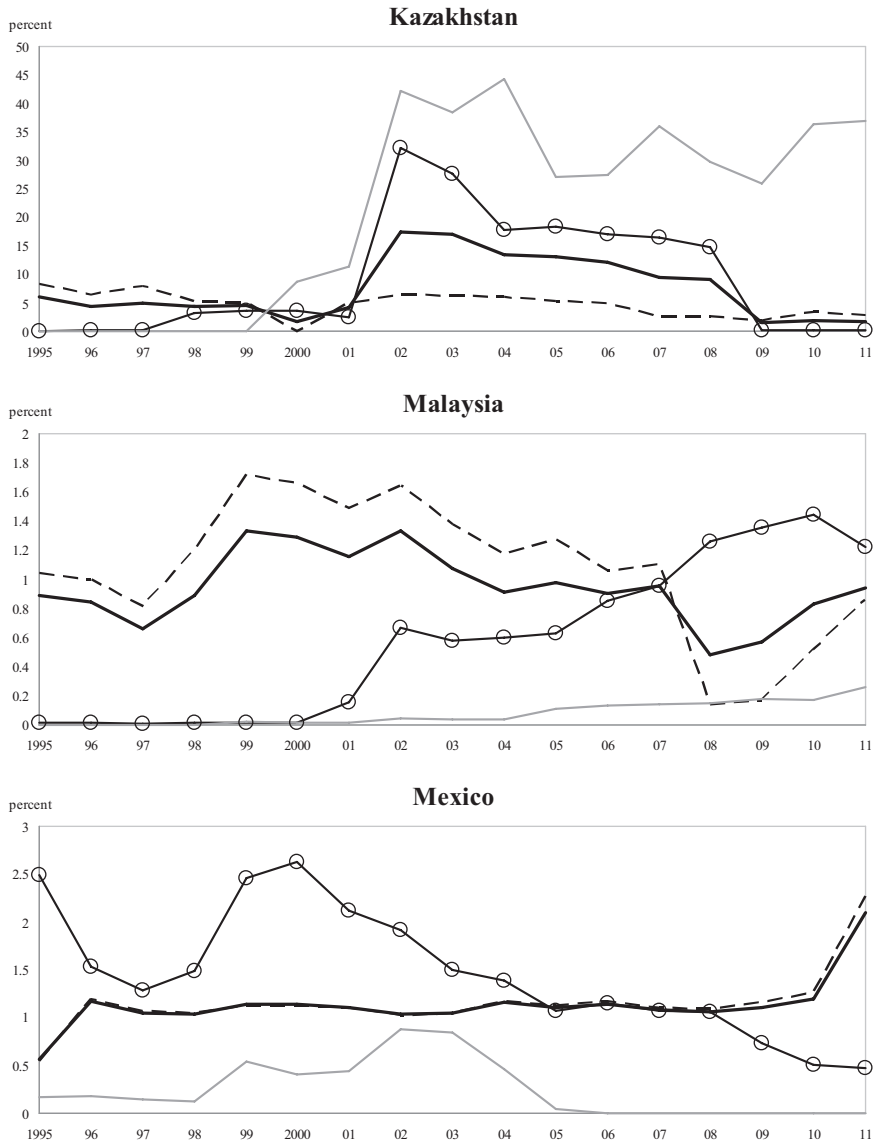


Figure 2 Emerging Economy Exports Affected by Foreign-Imposed TTBs, 1995–2011 (cont.)

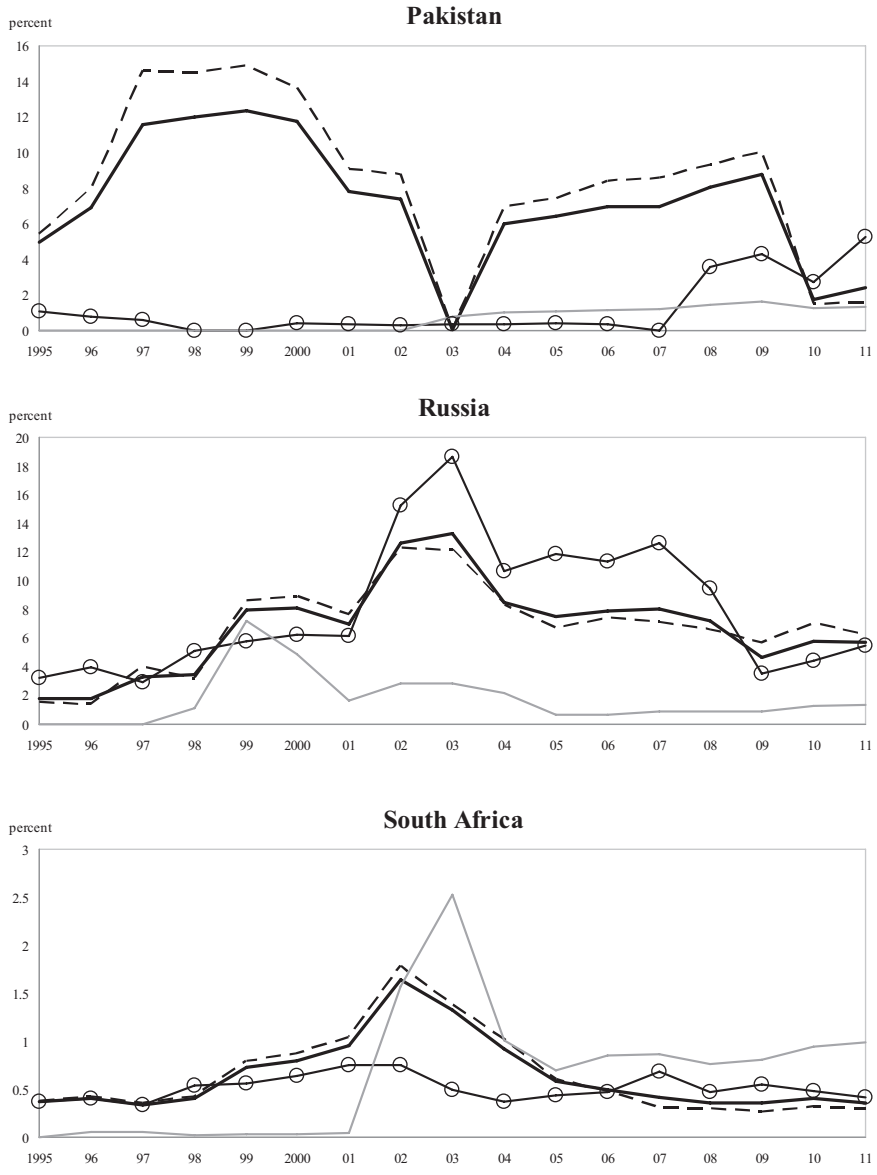


Figure 2 Emerging Economy Exports Affected by Foreign-Imposed TTBs, 1995–2011 (cont.)

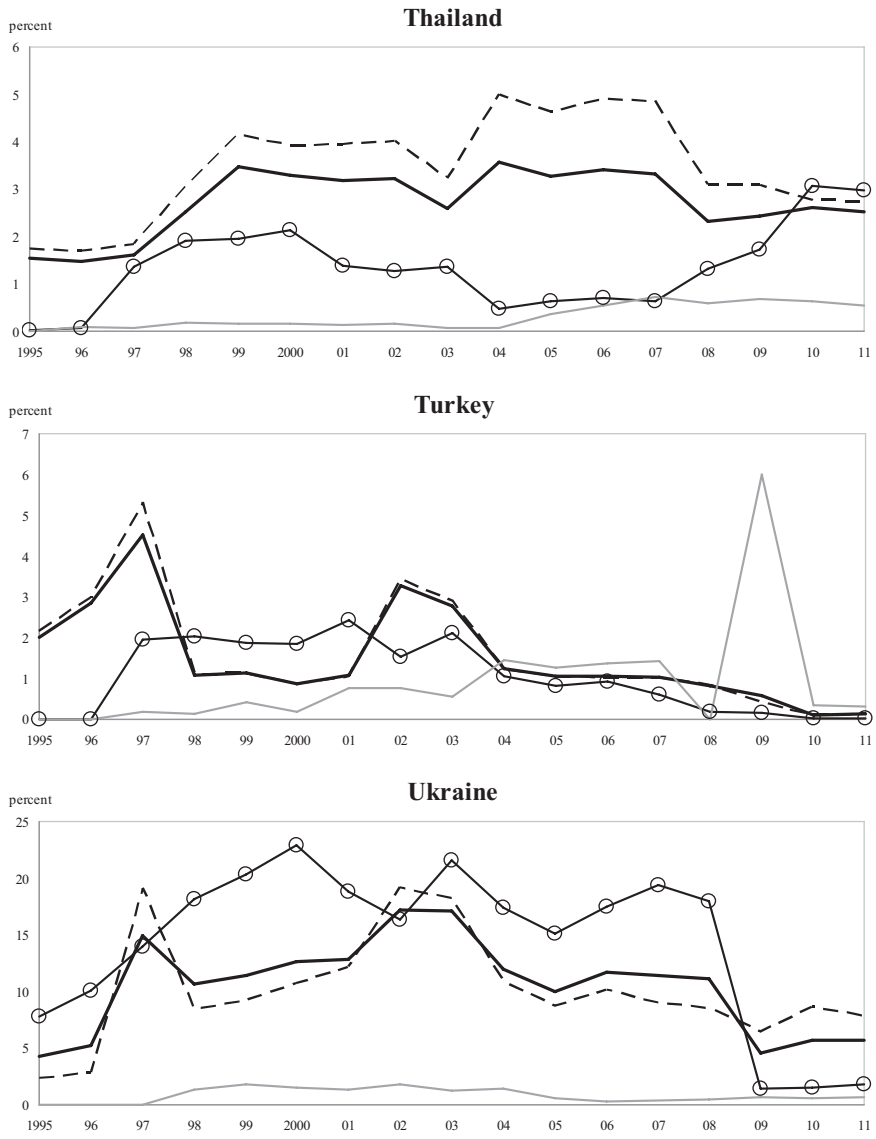
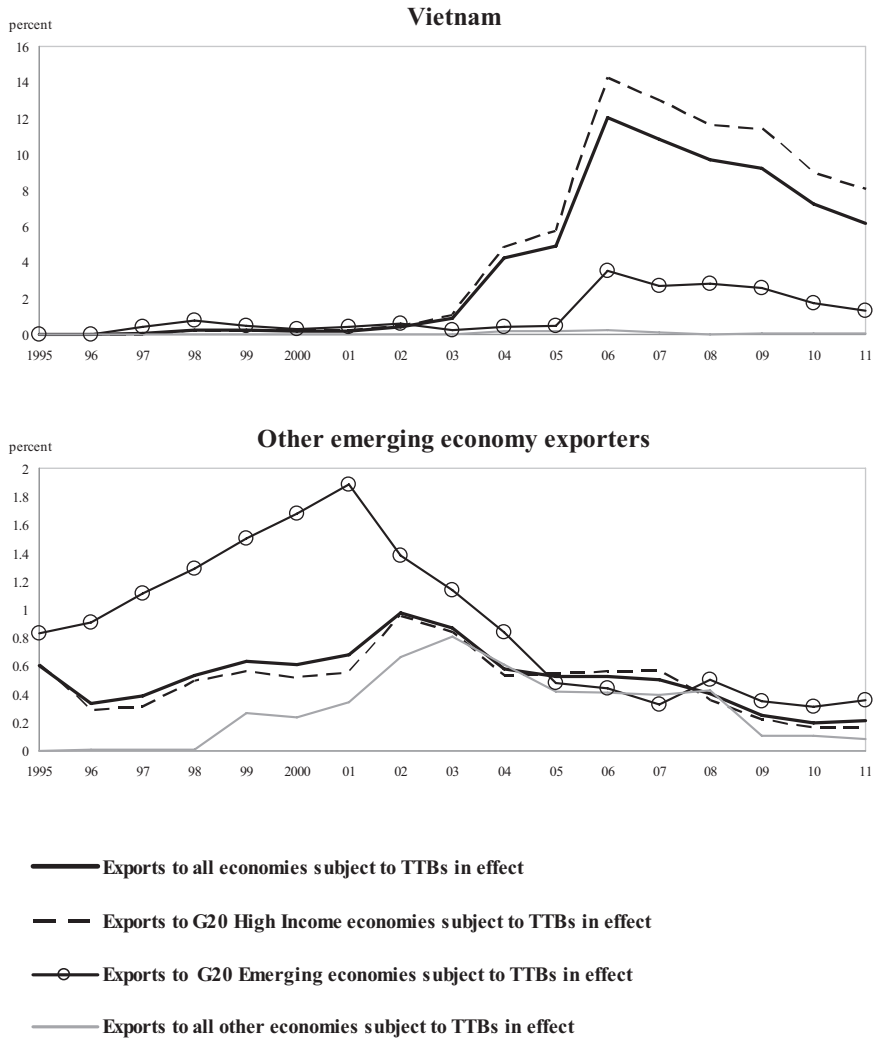


Figure 2 Emerging Economy Exports Affected by Foreign-Imposed TTBs, 1995–2011 (cont.)



Notes: Shares of nonoil exports, constructed by the author with policy data from Bown (2012b) and trade-weighting with HS-06 import data from UN Comtrade via WITS, following Appendix equation (A2) available in the on-line working paper version (Bown, 2012a). TTB = temporary trade barrier and includes antidumping, countervailing duties, global safeguards and China-specific transitional safeguards.

For a number of emerging economy exporters, the TTB coverage of exports by high-income trading partners in the 1990s has been replaced more recently with TTB protection affecting its exports to other emerging economies. Indonesia, for example, faced substantial TTB coverage of its exports to high-income markets after the Asian financial crisis in the late 1990s; since 2006, a larger and growing share of its exports to other emerging markets has become covered by TTBs. Figure 2 reveals exports from India, Malaysia and Thailand facing similar TTB coverage reversals over time.

This result is nevertheless not universal. First, the opposite holds for Brazil, Mexico and Russia. Historically, a greater share of their exports to other emerging economies than exports to high-income economies were covered by TTBs; more recently, the relative increase in exports covered by TTBs has been due to high-income trading partners. Second, some emerging economy exporters that were significant TTB targets in the past were no longer significantly targeted by 2011. For example, Argentina and Turkey each faced episodes in the mid-1990s in which 4%–5% of exports were subject to foreign-imposed TTBs; by 2011, foreign TTBs targeted less than 0.5% of total exports.

To set up the next section, we pause to draw one final inference from the panels in Figure 2. There are many episodes with substantial downward breaks in the data. These indicate instances in which the exporting country had a trading partner(s) *remove* previously imposed TTBs covering a substantial share of its exports. For example, Turkey went from 4.5% of total exports in 1997 being subject to foreign-imposed TTBs to only 1.0% in 1998 as a number of antidumping import restrictions were removed – including European Union TTBs on Turkey's exports of yarn and fibre products. Such breaks remind us that these barriers are temporary as they reveal a sudden foreign market access liberalization facing the exporter – at least with respect to it confronting less TTB policy coverage of its *potential* exports. Nevertheless, none of the indicators presented thus far address whether exports previously confronted by a TTB *actually* resume. The next section turns to this question.

4 THE REMOVAL OF ANTIDUMPING IMPORT RESTRICTIONS: DO EXPORTS RESUME?

The indicators of the previous sections document at least two pieces of important evidence. First, major emerging markets have increased the scope of their imports covered by TTBs. Second, major emerging markets have a sizeable share of their total exports and exports sent to other emerging economies impacted by foreign-imposed TTBs. An important question yet to be addressed is what happens to exports when these TTBs are finally removed? To what extent do exports resume?

4.1 Regression approach and data sample

We use the *Temporary Trade Barriers Database* to construct a baseline sample of TTBs that one of the fourteen member economies of the G20 (listed in Table 1) imposed and removed between 1992 and 2008. Let t be the year that the TTB was first imposed and let T be the year that the TTB was ultimately removed. Given the need for two years of data both prior to t and subsequent to T, we use policy activity from the 1992–2008 period because of constraints imposed by the availability of the HS-06 import data. We also focus on antidumping alone (and not all TTB policies) as it is the most frequently used TTB policy and one for which the decision to impose and remove barriers is undertaken on a trading-partner specific basis.[10]

The approach is to investigate the trade impact associated with a sample of 746 antidumping cases pooled across fourteen policy-imposing G20 member economies. We take information from the *Temporary Trade Barriers Database* regarding when the import restriction was imposed, when it was removed and the product codes associated with the TTB, and we match this to annual HS-06 trade data available from United Nations (UN) Comtrade. We require sufficient time coverage in the trade data so as to trace out ten years of information on the trajectories of exports. Of the 746 observations in the data sample, 399 of the antidumping cases are associated with policies *imposed by* high-income economies, and 347 are associated with policies *imposed by* emerging economies. While we are most interested in the response of emerging market exporters, the 746 observations also include high-income country exporters so as to benchmark results against one particular control group. In all, 352 of the antidumping cases targeted high-income economy exporters, 126 targeted exporters from China and 268 targeted exporters from other emerging economies (non-China).

We examine the trade response question through a descriptive exercise whereby we characterize what happens over time, on average, to export volumes and shares of export markets at various focal points associated with the antidumping imposition and removal process. We employ a simple linear regression framework that takes the form[11]

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[10] We also clean the data set of instances in which a policy-imposing country may have removed an antidumping duty over a particular product h but left in place another TTB over the same product against the same trading partner.

[11] The first half of equation (1) most closely resembles the approach of Prusa (1997, 2001). However, these papers did not consider what happens to exports *after* the removal of the antidumping measure in T, i.e., the second half of equation (1).

$$(1) \qquad Exports_{hijk} = \sum_{l=t-2}^{l=t+2} \beta_l X_l + \sum_{m=T-2}^{m=T+2} \beta_m X_m + \varepsilon_{hijk} .$$

In general terms, let $Exports_{hijk}$ in equation (1) represent country j's exports of TTB-affected product h to policy-imposing country i at year k. We ultimately examine and characterize results based on different definitions of $Exports_{hijk}$, including the log of the real value of bilateral exports and the change in the country j share of the export market for good h in the country i.[12] The covariates X_l and X_m are indicators for the five years around t (the year the TTB was first imposed) and T (the year the TTB was removed), respectively. Finally, we interact X_l and X_m with various sets of indicator variables depending on whether the policy-imposing economy i was high-income or emerging, and we consider different subsamples of data based on whether the exporter j was in a high-income economy, China, or another emerging economy (non-China). Finally, ε_{hijk} is the error term.

4.2 Results

4.2[a] *Do Post-TTB Export Values Reach Pre-TTB Levels?*

Table 3 presents one set of results, in which we define $Exports_{hijk}$ as *ln (1+real exports*$_{\text{hijk}}$*)*.[13] Specification (1) uses the full sample of 746 antidumping cases and ten years of data. Specification (2) uses the subsample of 126 antidumping cases targeting China's exporters, while specifications (3) and (4) use the subsamples of 352 cases targeting high-income exporters and 268 cases targeting other emerging exporters (non-China), respectively. For each of the four specifications, the first column presents information on the average level of exports associated with a given year for antidumping imposed by high-income trading partners i, and the

[12] Appendix A2, available in the on-line working paper version of the paper (Bown, 2012a), includes robustness checks in which we define $Exports_{hijk}$ as export growth and the share of the bilateral export market.

[13] First, we transform the data by adding 1 to real exports so we do not lose observations when taking logs. Application of antidumping could result in product-level exports going to zero, thus dropping observations for which trade flows disappeared would introduce sample bias. Second, we take logs because the distribution of export data is bounded below by zero but includes a handful of outliers at the high end that severely distort the mean, relative to the median. In light of these two issues, Appendix Table A2 in the on-line working paper version of this paper (Bown, 2012a) presents summary statistics which confirm the basic pattern of results when focusing on medians as opposed to means. Third, we use the US consumer price index to deflate the product-level bilateral trade flows from UN Comtrade reported in current US Dollars. Table 4 (discussed below) addresses this potential limitation by reporting estimates from changes in product-level export market shares for which no price deflators are required.

Table 3 The Export Response to Antidumping Imposed by High Income versus Emerging Markets: Real Exports

	$Exports_{hijk}=ln(1+ real\ exports_{hijk})$											
	Full Sample (total AD cases=746)			*Exporter j = China* (total AD cases=126)			*Exporter j = High Income* (total AD cases=352)			*Exporter j = Other Emerging* (total AD cases=268)		
	High income import market i	*Emerging import market i*	*Test*	*High income import market i*	*Emerging import market i*	*Test*	*High income import market i*	*Emerging import market i*	*Test*	*High income import market i*	*Emerging import market i*	*Test*
Year		*(1)*			*(2)*			*(3)*			*(4)*	
t – 2	9.0[a]	7.5[a]	a	9.5 [a]	7.0[a]	a	9.6[a]	8.2[a]	a	8.1[a]	6.8[a]	a
t – 1	9.3[a]	7.7[a]	a	9.8 [a]	7.4[a]	a	9.7[a]	8.3[a]	a	8.6[a]	7.0[a]	a
t = year AD measure imposed	8.9[a]	7.1[a]	a	9.5 [a]	6.9[a]	a	9.3[a]	7.9[a]	a	8.1[a]	6.2[a]	a
t + 1	8.2[a]	6.5[a]	a	8.9[a]	6.2[a]	a	8.8[a]	7.4[a]	a	7.2[a]	5.3[a]	a
t + 2	8.2[a]	6.4[a]	a	9.0[a]	6.3[a]	a	8.8[a]	7.4[a]	a	7.1[a]	5.1[a]	a
T – 2	8.3[a]	6.5[a]	a	9.0[a]	6.9[a]	a	8.9[a]	7.3[a]	a	7.4[a]	5.0[a]	a
T – 1	8.3[a]	6.5[a]	a	9.2[a]	7.0[a]	a	9.0[a]	7.3[a]	a	7.2[a]	5.1[a]	a
T = year AD measure removed	8.6[a]	6.8[a]	a	9.8[a]	7.8[a]	a	9.2[a]	7.5[a]	a	7.5[a]	5.3[a]	a
T+ 1	8.9[a]	7.0[a]	a	10.1[a]	8.0[a]	a	9.3[a]	7.5[a]	a	7.9[a]	5.7[a]	a
T + 2	8.9[a]	7.0[a]	a	10.2[a]	8.2[a]	a	9.2[a]	7.6[a]	a	8.0[a]	5.4[a]	a

	$Exports_{hijk}=ln(1+ real\ exports_{hijk})$											
	Full Sample (total AD cases=746)			*Exporter j = China* (total AD cases=126)			*Exporter j = High Income* (total AD cases=352)			*Exporter j = Other Emerging* (total AD cases=268)		
	High income import market i	*Emerging import market i*	*Test*	*High income import market i*	*Emerging import market i*	*Test*	*High income import market i*	*Emerging import market i*	*Test*	*High income import market i*	*Emerging import market i*	*Test*
Year		*(1)*			*(2)*			*(3)*			*(4)*	
Total observations		7,460			1,260			3,520			2,680	
R^2		0.85			0.90			0.89			0.78	
AD cases by importer *i*	399	347		65	61		182	170		152	116	
Share of AD cases with full export resumption★	64.7	62.0		83.1	85.2		58.8	56.5		63.8	57.8	
Mean years between AD imposed and removed	6.5	5.9		6.8	7.8		6.3	5.6		6.6	5.5	

Notes: Country *j*'s exports of product *h* to policy-imposing country *i* at year *k*. AD=antidumping. ★The definition of an AD case resulting in export resumption is max $\{Exp_{hijT+1}, Exp_{hijT+2}\} \geq$ min $\{Exp_{hijt-1}, Exp_{hijt-2}\}$ where Exp_{hijk} here are defined as $ln(1+ real\ exports_{hijk})$. Superscripts a, b, and c indicate statistical significance at the 1%, 5%, and 10% levels, respectively. '*Test*' is the statistical test for whether the year's estimated coefficient on the high-income import market is statistically different from the coefficient on the emerging import market.

second column addresses antidumping imposed by emerging economy trading partners *i*. The superscripts denote whether average exports that year were statistically different from zero. The third column provides additional information from a *t-test* regarding whether the averages within a year across the two categories of policy-imposing countries are statistically different *from one another*.

Consider Table 3 specification (1) which covers the full sample of data. Overall, average annual exports are always statistically greater than zero, even during the years that the antidumping import restriction is in effect. Furthermore, average annual exports to high-income markets are always higher than exports to emerging markets. More importantly, the time trends across the two categories of policy-imposing countries are the same, and they align with expectations. First, average exports increase considerably between $t-2$ and $t-1$ and then fall beginning when the TTB is imposed in year t, declining again in $t+1$ and $t+2$ while the TTB is in effect. While expected, this result is important as it confirms that the HS-06 import data is sufficiently disaggregated for this context so as to capture the trade-impacts of the antidumping policy which can be applied against imports that are defined at an even more disaggregated level.

Our main results begin by comparing what happens to annual exports once the TTB is *removed* in year T. In specification (1), average exports to both high-income markets and emerging markets increase in year T, and then again in $T+1$ and $T+2$. While exports to high-income markets get closer (8.9 relative to 9.0 or 9.3) than exports to emerging markets (7.0 relative to 7.5 or 7.7), in neither case do average annual export volumes get back to their level before the TTB imposition.

Another way to characterize the average rate of export resumption success is to investigate the share of these antidumping cases that, within two years of the TTB being removed, have export volumes that have grown to be as high as export levels were before the TTB was imposed. In the full sample of specification (1), 64.7% of cases in which the antidumping was imposed by a high-income trading partner result in what we term 'full export resumption'. This is opposed to only 62.0% of cases in which the antidumping was imposed by an emerging economy. Of course, our definition of 'full export resumption' itself is extremely conservative as it only compares post-TTB to pre-TTB levels of real exports; it does not consider projected export growth that might take account of trading partner economic growth or any other increases to import demand over the many years between the policy imposition and removal.

Why do TTB-impacted exports to emerging markets end up, on average, at lower relative levels than TTB-impacted exports to high-income markets? The lowest row of Table 3 allows us to *rule out* one potential explanation. On average, the TTBs imposed by the high-income economies lasted 6.5 years, whereas TTBs imposed by the emerging economies lasted only 5.9 years. We expect it to be

more difficult to resume exports to markets impacted by longer-duration TTBs, ceteris paribus, because of the need to invest additional resources to cover market-specific sunk and fixed costs.

Next consider the results of Table 3 specification (2), which describes the impact of TTB impositions and removals on the subsample of cases impacting China's exports. Relative to the full sample of exporters, in the starting year (*t-2*) China's exports to high-income markets start larger (9.5 versus 9.0) and China's exports to emerging markets start smaller (7.0 versus 7.5). Nevertheless, annual exports associated with TTB impositions trend similarly – China's exports are larger in *t-1* than in *t-2,* and they decline once the TTB is imposed in year *t*, falling again in *t+1* while the TTB is in effect. However, the main distinction is how TTB *removals* affect China's exports. By the time the TTB is removed in *T*, China's average exports have already increased to volumes at or above pre-TTB export levels, and then they continue to grow again in *T+1* and *T+2*. Put differently, 83.1% of antidumping cases in which high-income economies imposed and removed TTBs against China result in 'full export resumption', as do 85.2% of cases in which other emerging economies imposed and removed TTBs against China. These levels are much higher than the averages for all exporters. Finally, the relative success of China's exporters occurs *despite* them facing a much longer-than-average duration of TTBs in effect – 6.8 years for antidumping cases imposed by high-income markets and 7.8 years for antidumping cases imposed by other emerging markets.

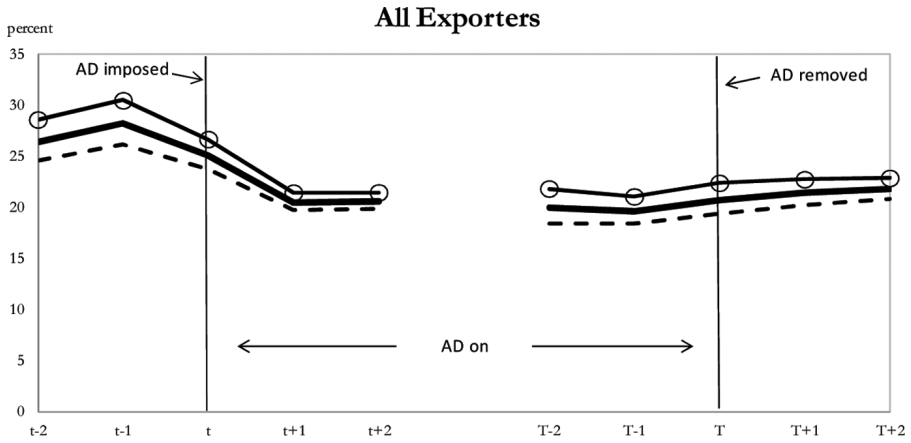
Specifications (3) and (4) of Table 3 describe the impact of TTB impositions and removals on average annual exports from high-income economies and other emerging economies (non-China), respectively. Here, we highlight the other emerging economy (non-China) sample of exporters from specification (4). On average, emerging economy export volumes do not get back to pre-TTB levels regardless of the category of policy-imposing economy, though exports sent to high-income markets get closer (8.0 compared to 8.6) than exports sent to other emerging economies (5.4 compared to 7.0). Furthermore, 63.8% of cases in which antidumping was imposed by high-income economies result in 'full export resumption'. These trends are much less promising for emerging economy exports when the TTBs are imposed by other emerging economies. Only 57.8% of cases result in full export resumption, and the annual volume of exports even by *T+1* or *T+2* is still well below pre-TTB levels. This is especially worrisome, given that emerging country antidumping against exporters from other emerging countries remains in effect for a much shorter duration (5.5 years) than the average.

4.2[b] *Do Post-TTB Export Market Shares Reach Pre-TTB Levels?*

As a basic robustness check, our second approach is to characterize the trade response to TTB impositions and removals by defining as $Exports_{hijk}$ country *j*'s share of total world exports of TTB-affected product *h* to policy-imposing country *i* at year *k*.

Begin with Figure 3, which illustrates the time trend for this variable around the same five-year windows of year *t* (TTB policy imposed) and *T* (TTB policy removed). The first panel suggests the expected pattern of pre-TTB export market shares holds – prior to TTBs being imposed, market shares increase from 26.6% in *t-2* to 28.4% in *t-1*, before falling to 25.2% when the TTB is imposed in *t* and then to 20.7% in *t+1*. On average, starting export market shares are higher for a TTB imposed by an emerging market than those imposed by high-income markets.[14] Finally, as the TTB is removed in *T*, market shares begin to increase slightly. Nevertheless, on average, market shares fail to get back to the pre-TTB level. Overall, less than half of the 746 antidumping cases result in exporters having the full restoration of market shares back to pre-TTB levels within two years of the TTB being removed.

Figure 3 The Export Response to Antidumping Imposition and Removals: Share of the Export Market



[14] The formal regression results associated with Figure 3 are found in Appendix Table A4 of the on-line working paper version of this paper (Bown, 2012a). This particular differential is statistically significant.

Figure 3 The Export Response to Antidumping Imposition and Removals: Share of the Export Market (cont.)

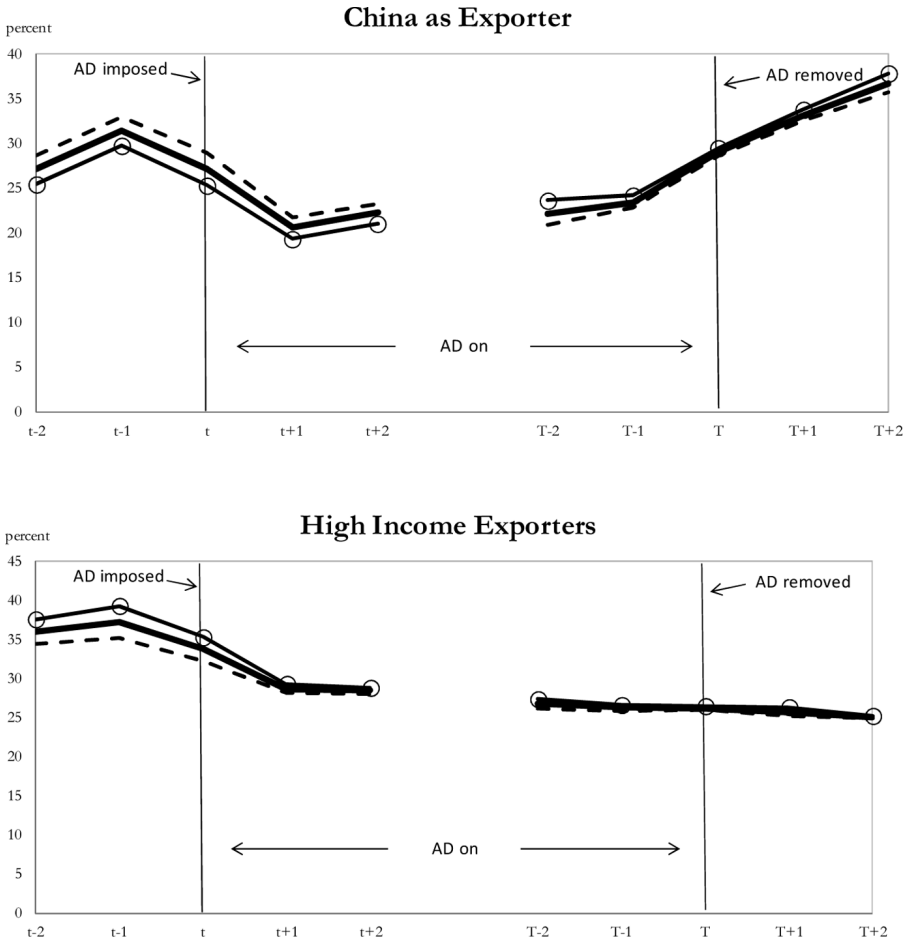
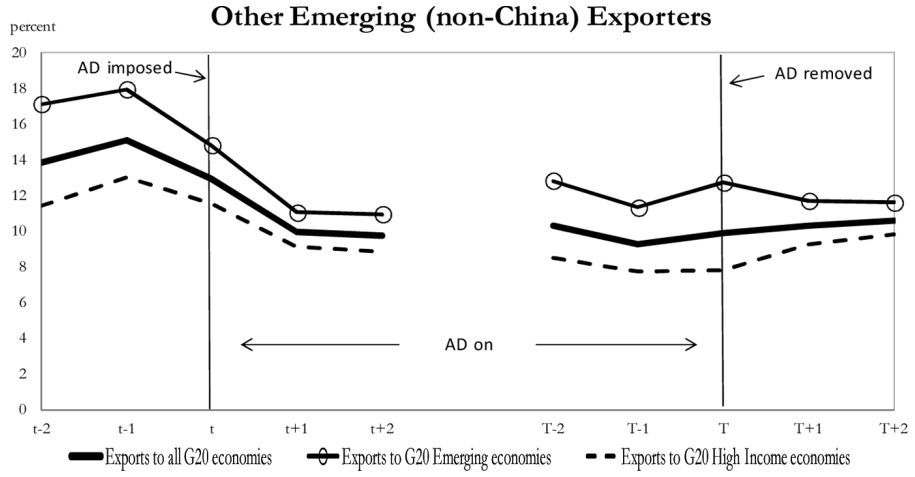


Figure 3 The Export Response to Antidumping Imposition and Removals: Share of the Export Market (cont.)



Notes: $Exports_{hijk}$ defined here as country *j's* share of total world exports of product *h* to policy-imposing country *i* at year *k*, for years *k* around the imposition (year *t*) and removal (year *T*) of country *i's* antidumping import restriction. Constructed by the author with policy data from Bown (2012b) and HS-06 import data from UN Comtrade via WITS.

Next, turn to Table 4, which presents results from a separate specification of equation (1) in which we redefine $Exports_{hijk}$ as the year-to-year *change* in the exporter *i*'s product *h* share of the TTB-imposing economy's import market. We use Table 4 to establish two important results to confirm what is visually apparent in Figure 3.

First, the average response of China's exporters in these antidumping cases is much different than the response of either of the other two categories of exporters. Specification (2) of Table 4 does confirm that China's exporters are experiencing more rapidly growing market shares before the TTB is imposed, and a relatively large reduction in market share in *t* and *t+1*. More importantly, relative to all other exporters, China's exporters are much quicker and more successful at *restoring* their market share once the TTB is removed in *T*. In the year of the removal of the TTB alone (year *T*), China's export share increases by 6.0 percentage points in high-income markets and by 5.3 percentage points in other emerging economies. Market shares in both categories of trading partners increase again by statistically significant amounts in *T+1* and *T+2*. As shown in Figure 3, by *T+2*, China's exporters have market share that is *more than* 2 percentage points above its pre-TTB level in high-income markets and nearly 8 percentage points above its pre-TTB level in other emerging markets. Furthermore, roughly 75% of antidumping cases involving China's exporters result in market share that, within two years, is as high as it was before the TTB was imposed.

Table 4 The Export Response to Antidumping Imposed by High Income versus Emerging Markets: Change in Export Market Share

	Exports$_{hijk}$ = Change in Export Market Share											
	Full Sample (total AD cases=746)			*Exporter j = China* (total AD cases=126)			*Exporter j = High Income* (total AD cases=352)			*Exporter j = Other Emerging* (total AD cases=268)		
	High income import market i	*Emerging import market i*	*Test*	*High income import market i*	*Emerging import market i*	*Test*	*High income import market i*	*Emerging import market i*	*Test*	*High income import market i*	*Emerging import market i*	*Test*
Year		*(1)*			*(2)*			*(3)*			*(4)*	
t – 1	1.6[a]	1.9[b]		4.5[a]	4.3[b]		0.7	1.7		1.6[a]	0.8	
t = year AD measure imposed	-2.6[a]	-3.8[a]		-4.2[a]	-4.5[b]		-2.8[a]	-4.0[a]		-1.6[a]	-3.1[a]	
t + 1	-4.0[a]	-5.2[a]		-7.3[a]	-6.0[a]		-4.1[a]	-6.0[a]		-2.4[a]	-3.8[a]	
t + 2	0.1	0.0		1.6	1.7		-0.1	-0.5		-0.3	-0.1	
T – 1	-0.1	-0.8		1.9	0.6		-0.3	-0.7		-0.8	-1.5	
T = year AD measure removed	1.0[b]	1.3[c]		6.0[a]	5.3[a]		0.1	-0.1		0.1	1.4	
T+ 1	0.9[b]	0.3		4.1[a]	4.3[b]		-0.7	-0.1		1.5[a]	-1.0	b
T + 2	0.6	0.1		2.9[b]	4.1[b]		-0.2	-1.1		0.6	-0.1	

	$Exports_{hijk}$ = Change in Export Market Share											
	Full Sample (total AD cases=746)			*Exporter j = China* (total AD cases=126)			*Exporter j = High Income* (total AD cases=352)			*Exporter j = Other Emerging* (total AD cases=268)		
	High income import market i	*Emerging import market i*	*Test*	*High income import market i*	*Emerging import market i*	*Test*	*High income import market i*	*Emerging import market i*	*Test*	*High income import market i*	*Emerging import market i*	*Test*
Year		*(1)*			*(2)*			*(3)*			*(4)*	
Total observations		5,968			1,008			2,816			2,144	
R^2		0.03			0.11			0.03			0.03	
AD cases of importers	399	347		65	61		182	170		152	116	
Share of AD cases with full export resumption★	45.4	48.7		72.3	77.0		33.0	35.3		48.7	53.4	
Mean years between AD imposed and removed	6.5	5.9		6.8	7.8		6.3	5.6		6.6	5.5	

Notes: The annual change in country *j*'s share of total world exports of product *h* to policy-imposing country *i* at year *k*. AD=antidumping. ★The definition of an AD case resulting in export resumption is $\max\{Exp_{hijT+1}, Exp_{hijT+2}\} \geq \min\{Exp_{hijt-1}, Exp_{hijt-2}\}$, where Exp_{hijk} here is the *level* of export market share. Superscripts a, b, and c indicate statistical significance at the 1%, 5%, and 10% levels, respectively. *'Test'* is the statistical test for whether the year's estimated coefficient on the high-income import market is statistically different from the coefficient on the emerging import market.

Second, the export response of the other emerging economies reported in Table 4 specification (4) is not so promising. Whereas other emerging economy exports to high-income markets increase market share by 1.5 percentage points the year after the TTB removal (*T+1*), these exporters continue to lose another percentage point of market share in emerging economy import markets in *T+1*. The differential in the emerging economy export response across the two categories of import markets is statistically significant.

This last result, alongside the results presented in Table 3, highlights a final concern regarding South-South protectionism. Not only do more emerging economy exporters have an economically sizeable share of their exports impacted by TTBs imposed by other emerging economies, but also such barriers may have effects that long outlive the duration of the imposed barrier. For even once the *temporary* barriers are removed, emerging economy exporters experience greater relative difficulty in *resuming* their exports – whether measured in volumes or in market shares – to other emerging economy trading partners.

5 CONCLUSIONS

Given the increasing relevance of South-South protectionism, this paper investigates the export response to removals of import protection under antidumping. We provide evidence that China's exporters respond quickly and aggressively to the market access opening embodied in the removal of such import restrictions. Nevertheless, this response differs substantially from the experience of *other* emerging economy exporters. In particular, when the import protection had been imposed by another emerging economy trading partner, the emerging economy export response is quite slow and weak.

This evidence raises a number of questions for future research. First and foremost is a better understanding of the potential source underlying the heterogeneous performance of exporting firms across different countries. Does South-South trade fail to resume because of particular attributes of the impacted products that emerging economies are more likely to export? Is it associated with features of the applied policy – for example, the size of the antidumping duty, or whether it was imposed as a price undertaking – that has just been removed? Are emerging economies scared off by the antidumping experience and less likely to re-invest in the market specific costs? Is the response affected by differences as to whether the exporter was originally able to 'deflect' trade (Bown and Crowley 2007, 2010) to third markets in response to the imposed antidumping barrier?

Understanding the causes is critical for any potential policy response. Nevertheless, the importance of this issue is only likely to increase given global economic trends. As emerging markets continue to make outsized contributions to

global economic growth and exporting firms reorient trade flows toward their markets in the face of global rebalancing, political-economic pressure to impose economically important import protection through TTBs to deal with the adjustment pressure increases. While the future may also (hopefully) be characterized by an increasing number of TTB *removals*, the long-run costs of TTBs relative to some of the proposed benefits of including such policy flexibilities in cooperative, but self-enforcing trade agreements (Bagwell and Staiger, 1990; Bown and Crowley, forthcoming) may require a re-examination if such removals fail to result in the resumption of exports.

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