

The Great Recession and Import Protection



The Role of Temporary Trade Barriers



THE WORLD BANK

edited by Chad P. Bown

The Great Recession and Import Protection: The Role of Temporary Trade Barriers

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CHAD P. BOWN

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USA: Evolving Trends in Temporary Trade Barriers

THOMAS J. PRUSA¹

1 INTRODUCTION

The USA has long been among the most active seekers of contingent protection. This was true in the 1980s and 1990s and remains true in the first decade of the 2000s. While other policies such as ‘buy American’ provisions and domestic content rules have received considerably more press attention during the economic crisis of 2007–9, the simple truth is that contingent trade policies remain the primary means of changing the relative cost and/or availability of imports. Under WTO rules, contingent protection policies like anti-dumping, CVDs, China safeguards and global safeguards should be applied for a limited duration.² Consequently, the term ‘temporary trade barriers’ (TTBs) is a particularly apt description of the policies.

In this chapter the trends in US TTB activity since 1990 are discussed. In order to provide a broad perspective on the issue, the trends are examined using several different metrics. We begin with the traditional case metric. However, Bown (2011b) argues that, for many questions, a product metric provides more insight into the trends and thus both unweighted and trade-weighted product metrics will be used.

These findings indicate that US use of TTBs is evolving. Some of the stylised facts of the past are no longer true. Although the USA continues to be a heavy user of TTBs (as compared with other countries), the number of new TTBs sought by US industries has fallen markedly since 2004. Over 2005–9, the number of new requests for TTBs (case metric) by US industries has fallen by about 60% compared with the late 1990s.

This decrease is especially noteworthy in light of the sharp decline in US economic activity in 2007–9, a development that one would have expected to

¹Department of Economics, New Jersey Hall, Rutgers University, 75 Hamilton St, New Brunswick, NJ 08901-1248, USA. Email: prusa@econ.rutgers.edu.

²I discuss what is meant by ‘limited duration’ later in the chapter.

produce increased calls for protection.³ Interestingly, using any of the three metrics for TTB activity, little evidence is found that the 2007–9 recession spurred a surge in US protectionism, or at least protectionism in the form of TTBs (Evenett (2010) presents evidence that other forms of protection have increased).

The current level of TTB activity for the USA is even more striking from a longer-run perspective. During 2006–10, the US initiated fewer cases than during any five-year span since 1960.⁴ In fact, the two years with the fewest new TTB petitions, 2006 and 2010, have both occurred in this period.

The decline in new TTB activity, however, does not indicate that the USA has turned its back on TTBs. The USA continues to have a large stock of products under existing TTB orders. It seems that the USA is now far more reluctant to remove existing orders than in the pre-Uruguay Round period. In this sense, US TTBs are more onerous than those imposed previously. For example, this study finds that 75% (respectively, 90%) of US TTB orders were removed in the 1980s within five (respectively, ten) years; since 1995 only about 25% (respectively, 50%) of TTB orders were removed within five (respectively, ten) years.

This trend in longer duration is seen in both anti-dumping and CVD orders. Temporary trade barrier measures are far less likely to be removed (or ‘sunset’ as it is often termed) now than in the past. These trends are particularly noteworthy since the Uruguay Round agreement included a mandatory sunset provision for TTBs. Clearly, what was negotiated and what has happened in practice are two different things.⁵ The findings suggest that, in the USA, the term *temporary* trade barrier means something different today from what it did previously. Perhaps the term ‘semipermanent’ trade barrier is a more accurate description. It is certainly debatable whether the term ‘temporary’ is an accurate description when a trade barrier is imposed for 20 years.

At least equally as concerning is the discovery that the increased duration of TTBs is especially felt by developing countries. In the post-Uruguay Round period, at the initial sunset review stage, approximately 40% of anti-dumping measures against developed countries are revoked as compared with fewer than 25% of measures against developing countries. The difference between developed and developing countries is even starker for CVD measures. About 10% of CVD measures against developing countries are revoked at the initial review versus 40% of CVD measures against developed countries.

What do these trends mean for the stock of TTBs? The reduced flow of new TTBs should result in a smaller stock of TTBs. On the other hand, longer

³Levchenko *et al* (2010) provide evidence that the reduction in trade relative to overall economic activity in the 2007–9 period was far larger than in previous downturns. Their findings might partially explain why there was not a surge in contingent protection.

⁴Comprehensive data on worldwide use of anti-dumping prior to 1980 are not available (Bown 2010a; WTO 2010). The statistics presented in Irwin (2005) suggest that the USA has probably been a leading anti-dumping user since the 1950s.

⁵These findings are consistent with those in Moore (1999, 2002).

duration of existing TTBs means less attrition in existing TTBs and this, in turn, should increase the stock of TTBs. Using either the unweighted measure or trade-weighted measure, the two effects are found to essentially offset each other; as a result, the stock of US TTBs is far more stable than the flow.

There have also been striking developments to the pattern of who is targeted by US TTBs. In the 1980s and 1990s, the majority of TTBs was directed against imports from developed countries. Historically, somewhere between one-half to two-thirds of both the flow and the stock of TTBs were against developed countries. This is no longer the case. By 2009, only about one-third of the US *stock* of TTBs was against developed countries. The change in the flow of TTBs is even more noticeable: more than 80% of the *flow* of TTBs is against developing countries.

While China is the main reason for the shift, China alone does not explain the changing pattern. Even if China were excluded, there would still be a marked increase in the share of US TTBs directed against developing countries. Non-China developing countries accounted for about half of US TTBs by 2009; in comparison, in the mid-1990s, non-China developing countries accounted for about one-third of US TTBs.

Although developing countries are getting greater attention, China is easily the major target of US TTBs. As is the case for many US trade policy issues, China looms large in US TTB activity. With respect to the stock of TTBs, the USA now has more TTBs in effect against China than against all developed countries taken together. China also dominates the flow of new TTBs.

When one accounts for the fact that anti-dumping and CVD protection is often sought against multiple suppliers in a single investigation (*ie* the US industry alleges unfair behaviour against more than one import supplier), it becomes apparent that the attention paid to China is even more intense. In 2006–10, China was involved in about 85% of anti-dumping and CVD investigations. In contrast, in the late 1990s, only about one-quarter of anti-dumping investigations involved China.

The distribution of TTBs by industry is also examined. Not surprisingly, the steel industry dominates US activity throughout the period, consistently accounting for 30–50% of TTBs. The value of the trade-weighted measure of TTB protection is most apparent when examining the pattern of TTBs by industry. When the long-standing Canadian softwood lumber dispute was resolved, the wood product industry went from roughly 20% of all imports subject to TTBs to having less than 5% subject to TTBs. By contrast, when duties were imposed on over \$1 billion of warm-water shrimp, the share of all seafood imports covered increased dramatically.

The final section of the chapter considers the impact of the one instance in which the USA levied protection under the China safeguard provision—the 2009 dispute involving Chinese exports of passenger and truck tyres. This has been one of the most widely publicised TTB during 2005–9, garnering significant press attention both in the USA and in China. While Chinese volume

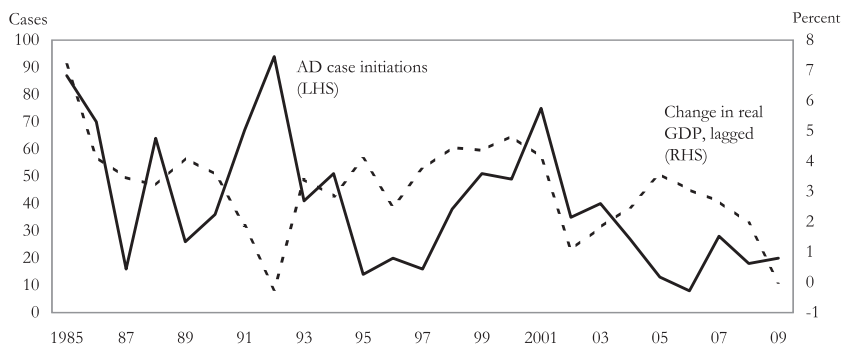


Figure 2.1: US anti-dumping cases initiated and change in real GDP.

Source: author's calculations using *Temporary Trade Barriers Database* (Bown 2010a) and US Bureau of Economic Analysis (2010).

and market share had grown in the years prior to the case, China was just one of many countries supplying tyres to the USA. In such circumstances, the country-specific nature of the China safeguard provision is likely to hinder any real change in overall trade flow.

Due to space limitations and because it is rarely invoked, global safeguards are not discussed here.⁶ Readers interested in US use of global safeguards should consult Bown (2004, 2011b).

2 CONTEXT FOR CURRENT TRENDS: THE 2007–9 RECESSION

The recent US recession was quite severe by historical standards. The 4.1% peak-to-trough fall in US GDP was greater than any recession since the end of World War II. The 2007–9 recession was certainly far larger than any recession since accurate statistics have been kept on TTBs. For instance, peak-to-trough GDP fell by about 2.7% in the early 1980s recession, by about 1.4% during the early 1990s recession, and by about 0.3% in the 2001 recession.

Knetter and Prusa (2003) show that the flow of new TTB cases is counter-cyclical; typically, TTB activity increases (respectively, decreases) during economic downturns (respectively, expansions). Figure 2.1 depicts this general relationship using anti-dumping cases. In the figure, the number of new anti-dumping cases (solid line) initiated in each year is plotted along with the

⁶The USA did not initiate any global safeguards during the 2008–9 economic crisis. In fact, in the first decade of the 2000s there was only a single global safeguard case and that was in 2001. While that case (steel) was broad, received heavy press coverage and resulted in a WTO dispute, the trade impact was muted for several reasons: the largest volume products and suppliers were already covered by existing anti-dumping and countervailing orders; the order was only in place for 18 months; and over 700 product exemptions were granted (Bown 2004).

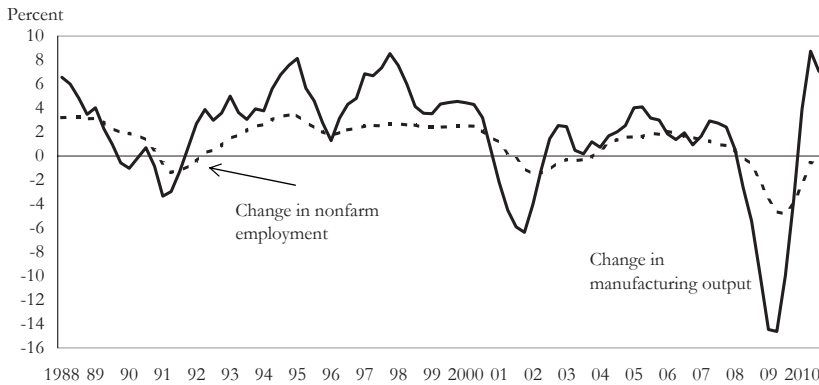


Figure 2.2: *Percentage change in US manufacturing output and non-farm employment.*

Source: US Bureau of Economic Analysis (2010).

lagged change in real GDP (dashed line). The negative correlation between economic activity and the flow of anti-dumping cases is most clearly seen during the recessions in the early 1980s, early 1990s and early 2000s, during which there were large increases in TTB activity (the global safeguard cases triggered by the recessions in the early 1980s and 2000s is not captured in the figure). By contrast, the significant decrease in GDP in 2007–9 was met with only a modest increase in US TTB activity.

Other measures of economic activity reinforce the finding that the level of TTB activity during 2008–9 is quite modest. Figure 2.2 depicts two common measures of US macroeconomic performance, the annual percentage change in manufacturing output and the percentage change in non-farm employment. As can be seen from the figure, the drop during 2008–9 in both measures was deeper than the declines during the 1991 and 2001 downturns. The fall in manufacturing output during the 2007–9 recession was more than twice as large as the 2001 recession and more than three times as large as the early 1990s recession. Only during the recession of the early 1980s has the unemployment level approached the 2007–9 recession's 10%+ level; notably, during the early 1980s recession, there was a large surge in anti-dumping and CVD investigations.

The performance of the steel sector, perennially the heaviest TTB-using industry, further buttresses the view that conditions in 2007–9 were ripe for a surge in TTB activity. In Figure 2.3, steel industry production is shown. Steel output fell by more than 50% during the 2007–9 recession, from a monthly output of over 9 million tons to about 4 million tons. Given a drop of this magnitude, it is not surprising that numerous steel-making facilities were shuttered or operated at unprofitably low rates (Uchitelle 2009). In the previous three downturns, 1982–3, 1991, and 2001, the steel industry used the



Figure 2.3: US raw steel production (quarterly).
 Source: American Iron and Steel Institute (2010).

recession to justify their need for TTBs. Yet that is not what occurred in the 2007–9 recession.

Given historical TTB trends, one would have expected the 2007–9 recession to have spurred a significant increase in US TTB activity in 2008–9. US anti-dumping and CVD activity did increase—from 8 anti-dumping initiations in 2006 to 20 in 2009, and from 3 CVD initiations in 2006 to 14 in 2009. Yet this level of activity is quite modest by historical standards. In 1992 there were 94 anti-dumping initiations and in 2001 there were 75 anti-dumping initiations. In fact, the current level of TTB is more akin to the level of activity during previous periods of robust economic activity. Given the severity of the 2007–9 recession, the modest increase in TTB activity is surprising and one of the major findings of this chapter.

This finding will be returned to at various times in the chapter. The fact that US TTBs did not return to previous recessionary levels is important. No matter whether TTBs are measured using a case metric, product metric or trade-weighted metric, there is little evidence that the 2007–9 recession spurred a significant increase in TTB activity. In the final section of the chapter some possible explanations are offered as to why TTBs did not surge during the 2007–9 recession.

3 PATTERNS IN US TEMPORARY TRADE BARRIERS: CASE METRIC

3.1 General Discussion

With this backdrop, let us take an extended look at US TTB activity. In this section, the traditional case metric is used. This metric has several advantages.

First, it is consistent with how the USA and the WTO report TTB activity. Second, it is the most convenient metric for a long-run perspective on TTB activity; given changes in product code definitions, it is quite difficult to construct long time series using the product metric. On the other hand, as discussed in the next section, the case metric also has some weaknesses: most notably, the case metric treats a relatively small case (*eg* plastic shopping bags) the same as a very large case (*eg* warm-water shrimp). If the type and size of cases vary over time, the case metric will not adequately capture the changing impact of TTBs on imports.

Tables 2.1 and 2.2 give statistics on anti-dumping and CVD activity since 1990 using the case metric. The data are drawn from Bown (2010a). The tables report activity against developed countries, developing countries, China, and, finally, all targets (total cases). The number of cases initiated each year from 1990 to 2009 is listed.⁷ The tables also report the number of measures taken, which are the cases that result in duties being levied. Finally, in the last column of each table, the number of conducted investigations is reported. The term ‘case’ refers to each individual country involved (*eg* warm-water shrimp from Thailand, warm-water shrimp from China) and ‘investigation’ refers to the set of countries involved (*eg* warm-water shrimp from all source countries). A single investigation often involves multiple countries. On average, a typical anti-dumping or CVD investigation involves two or three countries.⁸

As shown in Table 2.1, between 1990 and 2009 there were 741 anti-dumping cases. Of these, 346 resulted in imposed measures. Table 2.2 gives similar statistics for CVD disputes: there were 187 CVD cases, 82 of which resulted in measures. Put differently, over the entire period, about 45% of anti-dumping and CVD cases resulted in measures.

Figure 2.4 depicts the flow of new anti-dumping and CVD activity (petitions) using the case metric and provides visual evidence of the cyclical nature of TTB filing patterns. Both anti-dumping and CVD cases increased significantly during the economic slowdown in 1991–2 and 2001–2. As discussed above, there was only a modest uptick in activity in the 2007–9 recession.

Tables 2.1 and 2.2 also list the number of measures in effect during each year. If more measures are revoked than imposed in a given year, then the aggregate number of measures in effect will fall. For example, as shown in Table 2.1, the USA had 269 anti-dumping measures in effect during 2000 and 248 measures in effect during 2001. The USA imposed 28 new anti-dumping

⁷One caveat when looking at the annual numbers is that investigations typically take 11–14 months, so usually the measure will not be taken until the following calendar year. This makes it quite possible that more measures can be imposed in a given year than new cases initiated.

⁸Distinguishing between a case and an investigation has little impact on the later discussion in this chapter. Nevertheless, it can be important for other questions, such as, for example, Hansen and Prusa’s (1996) study of cumulation and Bown and Crowley’s (2007) study of trade depression, diversion and deflection.

Table 2.1: US anti-dumping activity (by case), 1990–2009.

	Developed				Developing				China				Total cases			
	Cases initiated	Measures		Cases initiated	Cases initiated	Measures		Cases initiated	Cases initiated	Measures		Cases initiated	Cases initiated	Measures		Total number of investigations
		Taken	In effect			Taken	In effect			Taken	In effect			Taken	In effect	
1990	16	11	100	12	3	47	8	7	11	36	21	158	18			
1991	30	6	110	31	9	50	6	3	19	67	18	179	24			
1992	62	24	116	27	12	57	5	3	21	94	39	194	25			
1993	16	6	140	18	7	70	7	4	24	41	17	234	20			
1994	17	7	144	22	13	75	12	7	28	51	27	247	23			
1995	7	5	141	5	2	86	2	1	33	14	8	260	9			
1996	5	2	140	9	4	85	6	6	34	20	12	259	13			
1997	12	5	138	4	3	88	0	0	39	16	8	265	7			
1998	19	11	139	18	9	92	1	1	39	38	21	270	12			
1999	22	11	145	22	6	97	7	4	40	51	21	282	19			
2000	19	9	139	23	17	88	7	5	42	49	31	269	12			
2001	31	11	110	36	13	93	8	4	45	75	28	248	21			
2002	11	3	118	15	2	104	9	7	46	35	12	268	15			
2003	12	2	119	18	7	102	10	7	53	40	16	274	20			
2004	7	4	120	14	7	108	6	5	59	27	16	287	12			
2005	5	2	115	4	3	110	4	3	62	13	8	287	8			
2006	1	0	87	3	0	102	4	2	59	8	2	248	5			
2007	10	5	75	6	4	93	12	12	61	28	21	229	14			
2008	2	1	71	5	4	94	11	10	72	18	15	237	12			
2009	0	0	72	8	3	96	12	2	81	20	5	249	13			
Total	304	125	—	300	128	—	137	93	—	741	346	—	302			
Share (average)	41%	36%	29%	40%	37%	39%	18%	27%	33%	—	—	—	—			
Success rate	—	41%	—	—	43%	—	—	68%	—	—	47%	—	—			

Share denotes average end-of-period share for 'measures in effect'.

Source: author's calculations using *Temporary Trade Barriers Database* (Bown 2010a).

Table 2.2: US countervailing activity (by case), 1990–2009.

	Developed			Developing			China			Total cases			
	Cases initiated	Measures		Cases initiated	Measures		Cases initiated	Measures		Cases initiated	Measures		
		Taken	In effect		Taken	In effect		Taken	In effect		Taken	In effect	
1990	2	0	18	5	2	46	0	0	0	7	2	64	4
1991	3	2	17	8	3	46	1	0	0	12	5	63	9
1992	32	13	17	12	6	46	1	0	0	45	19	63	9
1993	2	1	30	4	0	52	0	0	0	6	1	82	3
1994	5	2	30	2	0	51	0	0	0	7	2	81	5
1995	1	1	30	1	1	51	0	0	0	2	2	81	1
1996	1	0	27	0	0	23	0	0	0	1	0	50	1
1997	4	1	26	2	0	22	0	0	0	6	1	48	3
1998	9	5	27	4	1	20	0	0	0	13	6	47	7
1999	5	4	32	10	2	17	0	0	0	15	6	49	5
2000	5	4	31	6	6	15	0	0	0	11	10	46	4
2001	9	4	23	6	2	20	0	0	0	15	6	43	8
2002	5	2	30	0	0	22	0	0	0	5	2	52	5
2003	0	0	32	6	2	22	0	0	0	6	2	54	5
2004	1	0	32	3	0	24	0	0	0	4	0	56	3
2005	0	0	29	2	2	24	0	0	0	2	2	53	1
2006	1	0	20	1	0	21	1	0	0	3	0	41	1
2007	0	0	12	0	0	19	7	7	0	7	7	31	7
2008	0	0	10	1	1	19	5	5	7	6	6	36	6
2009	1	0	9	3	1	20	10	2	12	14	3	41	12
Total	86	39	—	76	29	—	25	14	—	187	82	—	99
Share (average)	46%	48%	22%	41%	35%	49%	13%	17%	29%	—	—	—	—
Success rate	—	45%	—	—	38%	—	—	56%	—	—	44%	—	—

'Share' denotes average end-of-period share for 'measures in effect'.

Source: author's calculations using *Temporary Trade Barriers Database* (Bown 2010a).

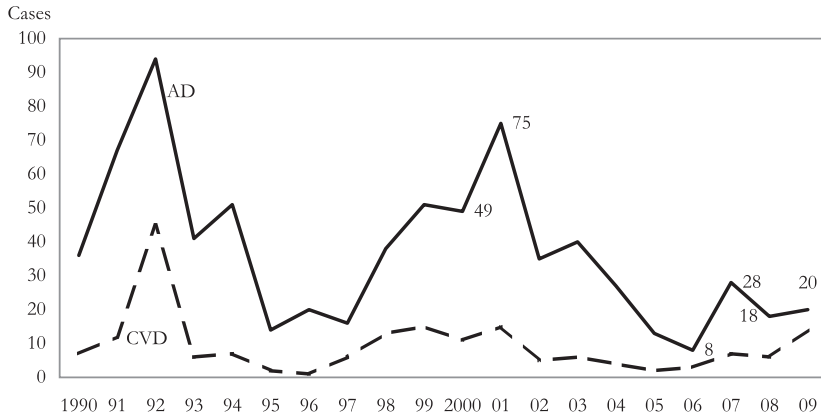


Figure 2.4: US anti-dumping and CVD case initiations.

Source: author's calculations using *Temporary Trade Barriers Database* (Bown 2010a).

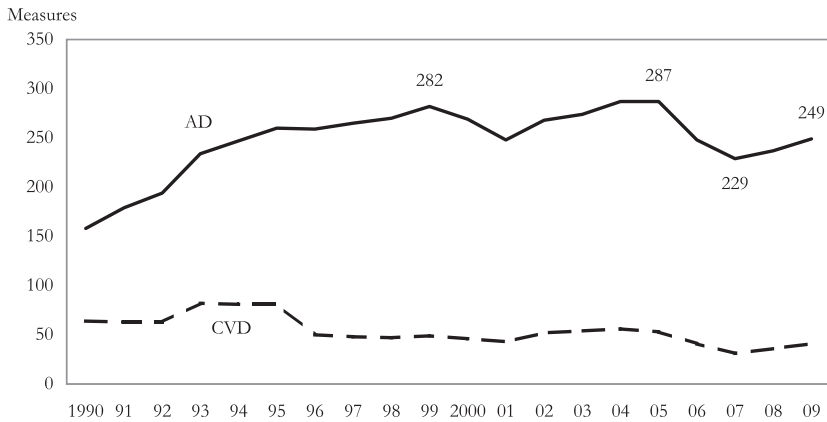


Figure 2.5: US anti-dumping and CVD measures in effect.

Source: author's calculations using *Temporary Trade Barriers Database* (Bown 2010a).

measures in 2001. This implies that 49 anti-dumping measures were ‘sunsetted’ in 2001.

When using the case metric, ‘measures in effect’ give the stock of TTB activity. The trends are depicted in Figure 2.5. As can be seen from the figure, there have always been far more anti-dumping measures than CVD measures, but the differential has grown since 1990. Countervailing duty measures have declined modestly, while anti-dumping measures have grown significantly over the period, and, consequently, the relative importance of the two TTBs

has widened: in 1990 the ratio of anti-dumping to CVD measures was 3:1 and by 2009 it was 5:1.

Figure 2.5 also provides some evidence of the impact of the inclusion of the mandatory sunset provision in the Uruguay Round. In the first two years of its use (1999–2000), mandatory sunset reviews had an appreciable impact on measures in effect; the USA revoked almost 100 orders.⁹ Since that initial trove of sunset cases, however, the USA has been disinclined to remove orders (Moore 1999, 2002). This issue will be returned to in Section 6.

The number of CVD measures in effect has been relatively stable. As seen in Figure 2.5, CVD measures declined in the mid-1990s but have since remained nearly constant at 40–50 measures in effect. The impact, if any, of mandatory sunset reviews is not seen in the stock of CVD measures. Table 2.2 reveals that the main development with respect to CVDs is the decrease in the flow. About one-tenth as many CVD cases were initiated during 2000–2009 as during the 1980s.

3.2 Target Countries

It is also interesting to examine TTB patterns after dividing the target countries into development groupings: developed, developing (not including China), and China. China is separated from other developing countries because of the intense trade scrutiny to which it is subject within the USA. There are several important insights gleaned by looking at the targets by development status.

First, developed countries were targeted far less frequently by either anti-dumping or CVD actions over the 2000s relative to the preceding two decades. In the 1980s, about two-thirds of US anti-dumping and CVD cases targeted developed countries. The share of cases targeting developed countries fell throughout the 1990s and even more dramatically over the first decade of the 2000s. Since 2004, the number of cases brought against developed countries has dropped sharply; during 2005–9, fewer than ten cases in any year were aimed at developed countries. Averaging over the 1990–2009 period, 42% of the initiated cases targeted developed countries, but over 2005–9, only 20% of the cases targeted developed countries. The decline in cases brought against developed countries is even sharper for CVDs. Over 2003–9, only three CVD cases involved developed countries and none resulted in measures. By the end of 2009, only nine CVD measures were in effect against developed countries.

Second, the trends against developing countries are more stable. For most of the period, about 40% of US anti-dumping and CVD cases have targeted developing countries.¹⁰ The total number of anti-dumping and CVD measures

⁹Moore (1999) points out that the majority of the initial trove of sunset orders involved measures that had been in place for more than 10 years.

¹⁰There is more volatility in the CVD trends due to the relatively small number of cases in any one year.

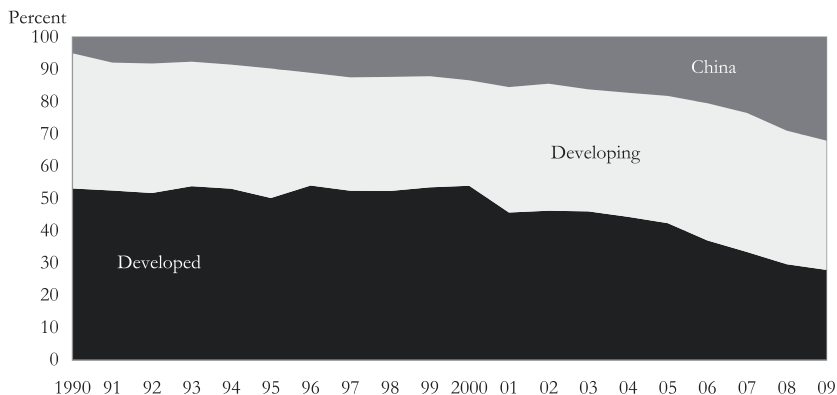


Figure 2.6: Share of US anti-dumping and CVD measures, by development status (and China).

Source: author's calculations using *Temporary Trade Barriers Database* (Bown 2010a).

in effect against developing countries has also remained fairly stable during the 1995–2009 period, with 90–100 anti-dumping measures and 20–25 CVD measures in effect in most years.

Third, and very importantly, China has emerged as the single most prominent target of US TTBs over the 2000s. Table 2.1 indicates that the absolute number of anti-dumping cases brought against China is about the same over the 2000s as during the 1990–1995 period. However, given that the number of TTBs targeting all other countries has fallen so sharply, China has emerged as the leading target. In a sense, other targets have taken two steps back while China stood still.

Perhaps the most startling statistic is the growth in the number of measures in effect against China. Over the first decade of the 2000s, the number of US anti-dumping measures in effect against China's exporters increased from 40 to 81. As a result, as of 2009, a full one-third of all US anti-dumping measures in effect are against China.

In addition, China now finds itself under unprecedented CVD scrutiny. Prior to 2007, no US CVD case against China had ever successfully resulted in a measure. This is largely because the US rules made it impossible to levy a CVD against a non-market economy. In 2007, the USA changed its rules and broadened its interpretation of CVDs. Under the new rules, CVDs could be levied on non-market economies like China. Subsequent to this rule change, a remarkable 23 of 30 US CVD cases have involved China.

Figure 2.6 depicts the yearly share of anti-dumping and CVD measures in effect, grouped by development status. The figure highlights the growing importance of China. As can be seen from the figure, over 1990–2009, developing countries accounted for about 40% of all measures. The big difference

Table 2.3: *US contingent protection against China (number of cases).*

	Cases initiated (%)	China involved (%)	Only China (%)
(a) China's share of US anti-dumping actions			
1980s	4	7	4
1990-94	13	34	16
1995-99	12	27	15
2000-04	18	50	21
2005-09	49	83	42
	Cases initiated (%)	China involved (%)	Only China (%)
(b) China's share of US CVD actions			
1980s	0	1	0
1990-94	3	7	7
1995-99	0	0	0
2000-04	0	0	0
2005-09	72	85	78

Source: author's calculations using *Temporary Trade Barriers Database* (Bown 2010a).

is the diminished role of developed countries and the growing role of China. By the end of the sample period, China accounts for almost one-third of all TTB measures in effect.

While the above trends indicate the growing prominence of China for US TTBs, the focus on China is arguably even greater. As mentioned above, often domestic industries initiate cases against multiple import sources and these cases are almost always considered within a single investigation. While China accounts for a large share of cases, its influence on investigations is even greater. Consider the information in Table 2.3. In panel (a), information for anti-dumping cases is tallied and, in panel (b), CVD cases are considered.

In the first column of panel (a), China's share of anti-dumping cases is reported. China accounted for less than 20% of anti-dumping cases up until 2004. During 2005-9, however, China's share jumped to almost 50% of all cases. Yet, as is argued by Bown (2010b) and Prusa (2010), this statistic does not capture the true extent to which China dominates the action. In the second column, the fraction of *investigations* where China was involved is given. China has been a major target since the early 1990s. From 1990-1999, China was involved in no more than one-third of all anti-dumping investigations. During 2000-2004, China's anti-dumping participation rate jumped to 50%. A remarkable 82% of anti-dumping investigations have involved China since 2005. In the final column, the fraction of investigations that involve only China

is reported. Amazingly, over 40% of US investigations target only China. The ascent of China is even more startling for CVDs (panel (b) in Table 2.3). China went from zero CVD activity prior to 2005 to account for 85% of all CVD investigations in 2005–9. To a large extent, US TTB policies have become ‘stop China’ policies.

4 PATTERNS IN US TEMPORARY TRADE BARRIERS: PRODUCT (HS-06) METRIC

4.1 *General Discussion*

An issue with the case metric is that it treats each case the same. It does not allow the scope to vary by case. For example, under the case metric, five small cases would be considered to have five times the impact of one large case, even if the one large case covered billions in imports and the small cases involved a few million dollars of imports. Thus, it may be desirable to use a metric that captures the size of each case. Bown (2011b) argues that this ‘better’ measure can be computed using information on the products involved.¹¹ For more than 20 years the USA has used the Harmonized System to classify imports. These codes are reported for every TTB case and define the products involved in each dispute.

The advantages of the product measure are two-fold. First, cases rarely involve a single-tariff-line item. A case almost always involves a number of tariff lines. As a result, the scope of a case can be measured by the number of HS products involved (*ie* an unweighted measure of products). Second, the dollar value of trade varies by product. Therefore, the breadth of trade affected by a case may be more accurately measured by the value of trade involved (*ie* a weighted measure of products).

As discussed in Chapter 1 by Bown, constructing a trade-weighted metric is not a trivial task since subject imports fall as a result of the measures. Suppose, for example, that US TTBs completely eliminate subject imports. Since no trade value is measured, a trade-weighted measure of TTBs would imply that no trade is covered by TTBs; given what actually happened, this would be an odd interpretation of TTBs. Instead, here we follow Bown’s (2011b) approach and create a measure that adjusts for the trade distortion created by the TTB. Interested readers should consult Chapter 1 for a full discussion of how the trade-weighted product measure is computed.

Despite the product metric’s advantages, there are two drawbacks. Both highlight the difficulty in creating accurate time-series trends with the product metric. First, the Harmonized System was only implemented in 1989. While attempts have been made to concord the Harmonized System with the old

¹¹Until relatively recently, such product information was not available but this information is now publicly available in Bown (2010a).

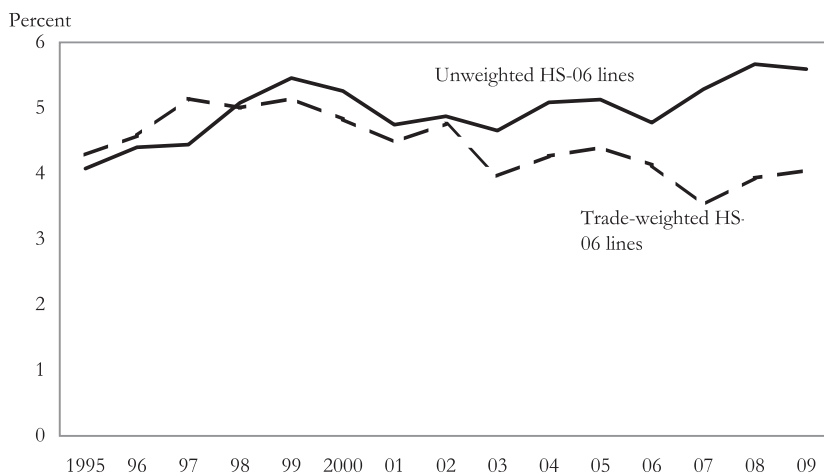


Figure 2.7: *Percentage of HS-06 lines under US anti-dumping/CVD measures (all suppliers).*

Source: author's calculations using *Temporary Trade Barriers Database* (Bown 2010a) and Comtrade.

tariff system, the reality is that measurement error becomes a serious concern if the product measure uses pre-1989 cases. As a result, only measures since 1989 are considered. Consequentially, because TTBs prior to 1989 have been excluded, my product metric will understate the true trade coverage of TTBs. This is likely to be especially problematic prior to the mid-1990s. It becomes less of a concern by the mid-to-late-1990s as more and more of these pre-1989 TTBs were revoked. Consequently, in an attempt to reduce the impact of these pre-1989 codes, results are reported using HS-06 metrics only from 1995. Second, the Harmonized System has undergone regular revisions since it was instituted. As a result, the codes for about one-third of the products have changed since 1990. While an attempt is made to control for these product code changes, some lost coverage is inevitable. In an attempt to balance the desire to use disaggregated data with a desire to minimise the number of code changes, the decision was made to use the HS-06 level to measure products.¹²

With these caveats in mind, let us now turn to examination of TTBs using the product metric. In Figures 2.7-2.9, unweighted and trade-weighted measures are presented. Figure 2.7 summarises the overall trends. In this figure,

¹²In most cases the products are identified at the eight-digit or ten-digit level. I opt to do my analysis at the six-digit level because doing so reduces the number of product code changes over time. Code changes occur more frequently at more disaggregated levels. Given that I report the fraction of imports subject to TTBs rather than the absolute level of imports subject to TTBs, I believe the cost of performing my analysis at the higher level of aggregation to be small.

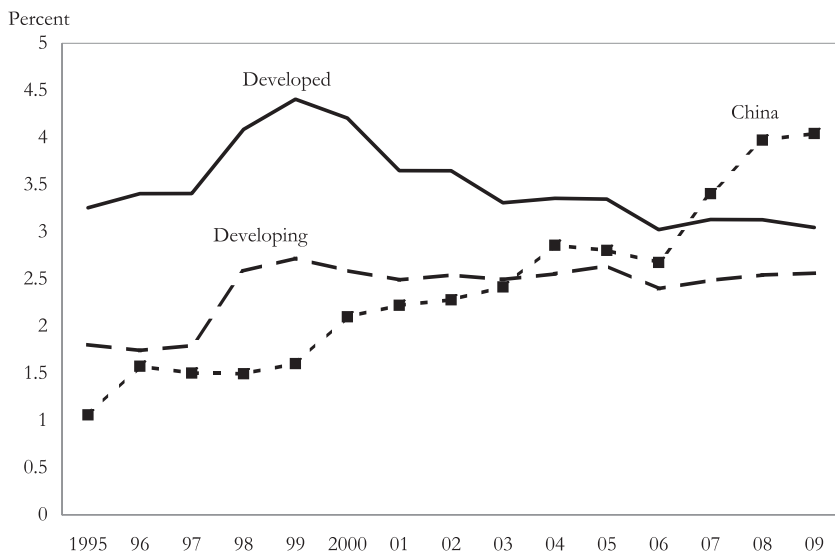


Figure 2.8: Percentage of HS-06 lines under US anti-dumping/CVD measures by development status (and China).

Source: author's calculations using *Temporary Trade Barriers Database* (Bown 2010a) and Comtrade.

the dashed line depicts the fraction of HS-06 products (unweighted) subject to anti-dumping/CVD orders; the solid line illustrates the fraction of HS-06 import *value* subject to anti-dumping/CVD orders. In terms of the overall picture, the two measures are broadly consistent: both measures indicate that 4–6% of all US imports are subject to TTBs. However, the two metrics differ when it comes to the trends in TTB coverage. The unweighted metric indicates that TTB coverage has increased fairly consistently over 2003–9, and especially over 2006–9. On the other hand, the weighted metric implies that TTB protection has fallen since 2003 and has only risen modestly in 2007–9. The difference in the trends reflects the impact of the removal of TTBs on several large import-value products such as galvanized sheet steel and softwood lumber.

4.2 Unweighted Measure

Figure 2.8 partitions the subject countries by development status. In Figure 2.8, the products covered are measured relative to the entire universe of products (*eg* the number of Chinese products subject to TTBs relative to all US imports of all products from China, the number of developed country products subject to TTBs relative to all US imports from developed countries, *etc*).

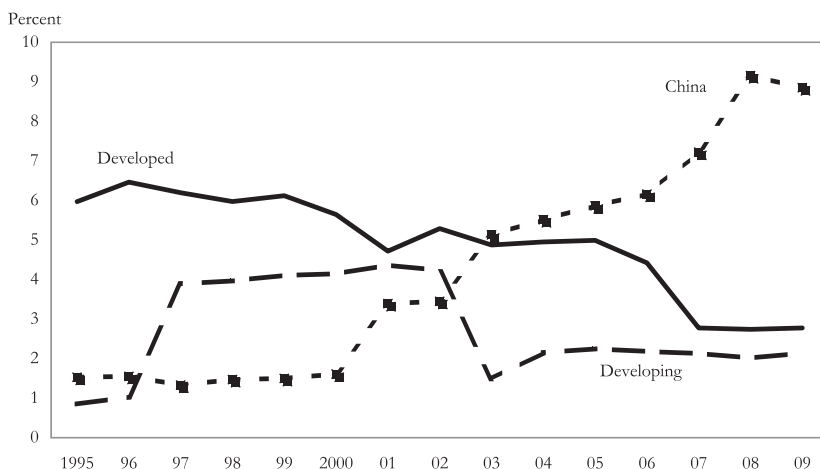


Figure 2.9: Percentage of import value under US anti-dumping/CVD measures by development status (and China).

Source: author's calculations using *Temporary Trade Barriers Database* (Bown 2010a) and Comtrade.

Figure 2.8 echoes the trends found using the case metric. First, TTBs against developed countries peaked in about 1998 (solid line) and declined thereafter. At the peak, about 4.5% of imported products from developed countries were subject to US TTBs. Beginning in 1998, the USA conducted its initial trove of sunset determinations, and these early sunset reviews involved a large share of products from developed countries. As is shown by the figure, these revocations resulted in a big decline in TTB coverage. The reduced flow of new TTBs over the 2000s resulted in the coverage ratio steadily declining to about 3% by 2009. Second, TTBs against developing countries (dashed line) rose in the mid-1990s but have remained quite stable at about 2.5% for more than a decade. Third, TTB coverage against China has nearly quadrupled over the 1995–2009 period. In 1995 about 1% of China's products were subject to TTBs; by 2009 China's TTB coverage had risen to more than 4%. As can also be seen when using the case metric, when it comes to TTBs, China is 'wearing the bull's-eye'.

4.3 Trade-Weighted Measure

Figure 2.9 is similar to the previous figure but relies on the trade-weighted metric. While the trends are consistent across the two metrics, the changing incidence of TTBs is much starker under the trade-weighted metric. Using the unweighted metric (Figure 2.8), developed countries' TTB coverage fell from about 4.5% to 3% by 2009. Using the trade-weighted metric (Figure 2.9), developed countries' TTB coverage fell substantially faster, from about 6%

Table 2.4: *Distribution of new US anti-dumping/CVD TTB initiations (case basis, flow).*

	1990-1994 (%)	1995-1999 (%)	2000-2004 (%)	2005-2009 (%)	2007-2009 (%)
Animal and animal products	0.7	4.9	5.3	0.0	0.0
Vegetable products	1.3	3.5	3.3	0.0	0.0
Foodstuffs	1.6	8.3	4.1	3.2	0.0
Mineral products	5.9	0.0	1.2	0.0	0.0
Chemicals and allied industries	17.4	4.9	16.3	24.2	27.0
Plastics/rubbers	1.3	11.1	9.0	8.4	10.8
Wood and wood products	3.0	0.0	1.6	11.6	6.8
Textiles	5.3	2.1	0.0	6.3	5.4
Stone/glass	0.0	0.0	0.8	2.1	2.7
Metals	48.4	55.6	50.6	30.5	29.7
Machinery/electrical	4.9	6.3	3.7	8.4	10.8
Transportation	6.3	1.4	0.8	0.0	0.0
Miscellaneous	3.9	2.1	3.3	5.3	6.8

Source: author's calculations using *Temporary Trade Barriers Database* (Bown 2010a).

to under 3%. The difference is even more pronounced for China. Using the unweighted metric, China's TTB coverage rose from about 1% to 4% by 2009. Under the trade-weighted metric, China's TTB coverage rose from about 1.5% to about 9%.

Taking the two figures together, not only are a very large number of products from China under TTB protection, but as compared with other countries, the TTBs against China (on average) involve larger trade volume than those against other countries.

5 INDUSTRY PATTERNS

Next, let us turn to the question of whether the US industries seeking TTB protection have changed over 1990-2009. We begin by examining the flow of TTBs. In Table 2.4, I use the case metric and report each industry's share of new cases as five-year averages.¹³ What is remarkable is how TTB activity is dominated by just a few industries. Very few cases involve food, vegetables, minerals and textiles.

As can be seen from the table, in every subperiod the US steel industry has been the leading seeker of TTB protection. The steel industry was a particularly heavy user during the 1995-2004 period when a large number of

¹³Reporting annual filings would produce extremely volatile patterns from year to year.

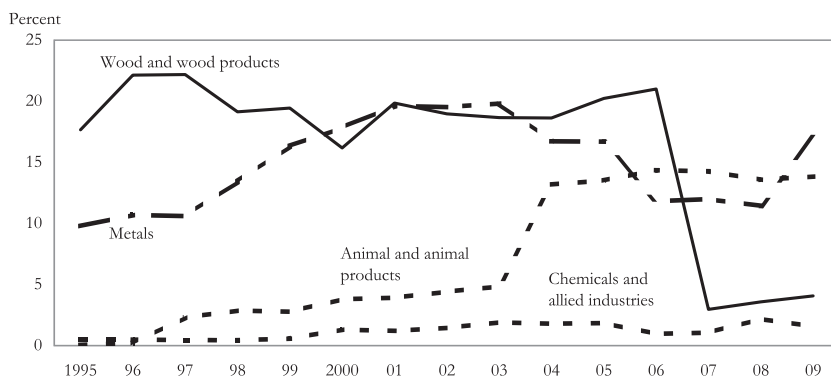


Figure 2.10: Percentage of import value under US anti-dumping/CVD measures by industry.

Source: author's calculations using *Temporary Trade Barriers Database* (Bown 2010a) and Comtrade.

firms went through bankruptcy and restructuring. In this ten-year period the industry accounted for more than half of all TTB cases. Throughout the entire 1990–2009 period, chemicals and plastics were the second and third most active industries, respectively.

Filings during the 2007–9 period are also reported in order to examine whether there is any evidence that the recession spurred a significant change in the industry filing patterns. The short-answer is ‘no’. The same handful of industries that account for most US TTB activity prior to the crisis are the same industries that account for most TTB activity during the recession.

The stock of TTBs is probably a more revealing metric when considering industry patterns of protection. The lack of new TTB requests (small flow) for a given industry may simply reflect that it already has a large fraction of its import competition subject to TTBs; this pre-existing coverage will be evident when looking at the stock measure. When examining the stock of TTBs by industry, the trade-weighted product metric is used to compute the fraction of each industry’s trade value subject to TTBs. The results are given in Figure 2.10 and Table 2.5.

First, consider that, across all industries and suppliers, the USA has about 4–5% of total imports subject to TTBs (see Figure 2.7 and Table 2.5). The average misrepresents the impact at an industry level. For example, the steel industry’s persistent use of TTBs has resulted in large coverage. For much of the period, the steel industry had more than 15% of all competing imports subject to TTBs. The industry’s coverage peaked at almost 20% during the steel crisis of 1999–2002.¹⁴ It should be noted that a large fraction of steel

¹⁴Temporary trade barrier coverage would be even larger in 2002–3 if the trade effects of the steel safeguard action had been included.

Table 2.5: *Trade impact of US anti-dumping/CVD measures in effect (trade-weighted).*

	1995-99 (%)	2000-2004 (%)	2005-2009 (%)	2007-2009 (%)
<i>All suppliers</i>	4.9	4.5	4.0	3.8
<i>By development status</i>				
Developed	6.1	5.1	3.6	2.8
Developing	2.9	3.3	2.1	2.1
China	1.5	4.1	7.5	8.4
<i>By industry</i>				
Animal and animal products	1.7	6.2	13.9	13.9
Vegetable products	0.7	1.2	0.9	0.4
Foodstuffs	2.6	3.8	6.5	6.5
Mineral products	3.1	2.8	2.5	2.6
Chemicals and allied industries	0.5	1.6	1.5	1.6
Plastics/rubbers	5.3	3.1	3.9	5.1
Wood and wood products	20.1	18.4	11.7	3.5
Metals	12.3	18.5	13.4	13.0
Machinery/electrical	6.8	4.2	2.5	2.6
Transportation	3.9	3.6	4.6	4.9

Source: author's calculations using *Temporary Trade Barriers Database* (Bown 2010a) and Comtrade.

trade is intra-firm trade; one would not expect this trade to be threatened with TTBs. Hence, the industry's TTB coverage on non-affiliated trade is even more impressive. For instance, if one-third of US steel imports is intra-firm trade, then 30% of all unaffiliated imports are covered by TTBs.

Second, other industries have experienced large changes in their stock of imports subject to TTBs. Until 2006, the wood and wood products industry had about 20% of its import competition subject to TTBs. Despite the fact that this industry filed few cases over the period (Table 2.4) it was able to maintain TTBs on a large share of its competition. This was possible because softwood lumber dominates US wood imports and Canada accounts for nearly all of US softwood lumber imports. For this industry, a single dispute against a single supplier can create high coverage. The USA and Canada litigated this dispute for over 20 years. Given the amount of trade involved, neither side was willing to compromise. Finally, after numerous North American Free Trade Agreement (NAFTA) panel and WTO appellate body decisions, the US and Canada agreed to settle the dispute in 2006. The USA revoked the CVDs on softwood lumber and Canada agreed to limit how much softwood lumber it would export to the USA. As can be seen from Table 2.4, the removal of this order reduced the coverage ratio from over 20% to below 5%.

The 'animal products' industry makes for an interesting comparison with the wood industry. Akin to the wood products industry, the animal and animal products industry has not filed a large number of TTB cases (Table 2.4). However, the cases that have been pursued have been large. Most notably,

in 2004 the USA imposed anti-dumping duties on shrimp from six developing country suppliers, resulting in over \$2 billion of trade to be covered in a single TTB. This single case increased industry coverage from about 5% to about 14%.

6 DURATION OF TEMPORARY TRADE BARRIERS

The length of the period that measures remain in effect is vital for understanding the protection afforded by US TTBs. A mandatory sunset provision for anti-dumping and CVD measures was included in the Uruguay Round because developing countries were frustrated by the challenge involved in getting orders removed.¹⁵ As part of the grand bargain to conclude the Uruguay Round, developing countries were able to insert language that required a mandatory sunset review for each TTB every five years. As Moore (1999, 2002) discusses, some users interpreted the language to mean that TTBs were to be removed after five years, while others, including the USA, interpreted the provision to mean that only a mandatory sunset *review* was required. Under US law, the presumption is that the order will be removed unless doing so would lead to a resumption of unfair trade and injury.

The extent to which the new provision matters depends on the basis for determining the likelihood of resumed unfair trade and injury. Moore (1999, 2002) documents that the US procedures make revocation via the sunset review a difficult proposition. With respect to the question of whether there would be a resumption of unfair trade if the order was removed, Moore documents that the USA has *always* found that there would be a return to unfair trading. In every case, no matter how long the order has been in effect, no matter how much evidence administrative reviews have revealed about the changed pricing, the USA always concludes that the affected countries will trade unfairly. With respect to the recurrence of injury, the USA has become far more hesitant to remove orders as it has gained more experience with sunset reviews. In the initial set of reviews covering measures that were in place prior to the 1995, the USA revoked about 50% of the orders.¹⁶ Once these transition orders were finished, the USA adopted a much harder line towards revocation. Only about one-third of the post-Uruguay Round cases have been revoked.

¹⁵While a higher proportion of cases were brought against developed countries pre-1990, developing countries pushed the sunset provision. To begin with, many of the TTB cases brought against developed countries in the 1980s were 'settled'. Second, the accounting requirements to obtain TTBs were particularly difficult for developing countries to master. Hence, developing countries felt that there was a lot to gain by mandatory sunset reviews.

¹⁶Some of these transition orders were so old that there was no domestic interest in continuing them.

The duration of TTBs is quantified by computing the number of measures that are revoked as a fraction of the total number of measures that are in effect each month/year. Each measure's key calendar dates (date the measure went into effect and date of revocation) are converted into a duration basis. For instance, a measure that went into effect in January 2000 and was revoked in January 2005 would have a duration of 60 months.

Statistically, duration is estimated using the non-parametric Kaplan-Meier survival function. In Figures 2.11 and 2.12, the survival estimates for anti-dumping and CVD measures, respectively, are reported. Both figures are based on the case metric. First, considering panel (a) of each figure, three lines have been graphed: the grey dashed line is the survival experience for cases filed pre-mandatory sunset, the black dashed line is the survival experience for transition cases, and the solid line is the survival experience for cases initiated post-mandatory sunset reviews. Note that these figures use TTB information on cases prior to 1990. Because the case metric is used for the duration analysis, we are not hindered by the fact that the Harmonized System codes are unavailable for these early cases.

The lines depict the fraction of cases that survive through a given time period. As seen, within 36 months, more than half of both anti-dumping and CVD cases during the pre-Uruguay Round period were revoked (grey dashed line). By contrast, in the post-Uruguay Round period, less than 10% were revoked (*ie* more than 90% were still in effect). In the pre-mandatory sunset era, cases ended more or less continuously. In the post-Uruguay Round period, the survival curve is almost constant until the sunset review, and then it drops sharply. About 25–33% of initial sunset reviews result in the order being revoked.¹⁷ In the post-Uruguay Round period, almost all revocations occur during the sunset review.

Mandatory sunset reviews appear to have had two effects on the removal of orders. First, it appears that foreign firms do not seek to have the orders removed via demonstrating multiple years of zero margins. This is not that surprising given the large expense associated with each administrative review. Also, given that the probability of revocation is small (zero unless several prior reviews already demonstrated zero margins), foreign firms seem to have decided to preserve resources for the sunset review.¹⁸

To get a sense of why they might do so, suppose a TTB was imposed on three firms exporting from a given target country. Each administrative review can cost *each* firm over \$1 million. Thus, if all three firms were to pursue an administrative review sunset, they could jointly spend \$9 million. By contrast,

¹⁷Due to the time required for the sunset review investigation, the initial sunset review often occurs between 60 and 72 months after the initial order is imposed.

¹⁸The foreign firms' reluctance to pursue administrative reviews is also possibly due to the 'zeroing' procedures used by the Department of Commerce. We could see more effort on administrative reviews once the USA changes its zeroing policy (Bown and Prusa 2011).

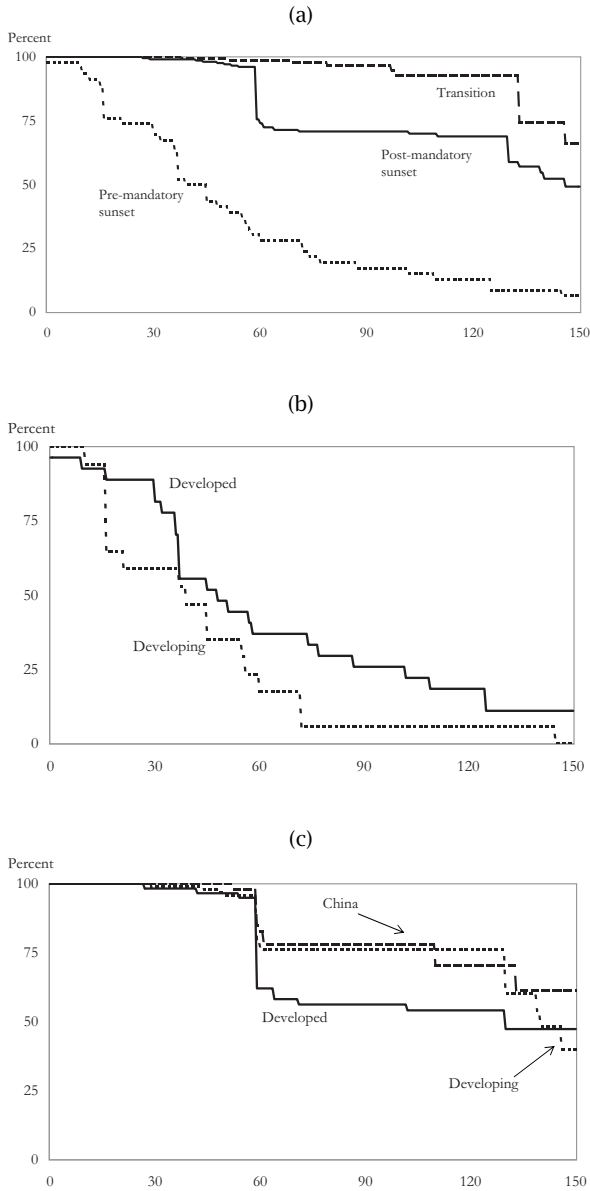


Figure 2.11: Percentage of US anti-dumping measures in effect by duration (in months): (a) pre- versus post-mandatory sunset review clause; (b) developed versus developing countries (pre-mandatory sunset); (c) developed versus developing countries and China (post-mandatory sunset).

Source: author's calculations using *Temporary Trade Barriers Database* (Bown 2010a).

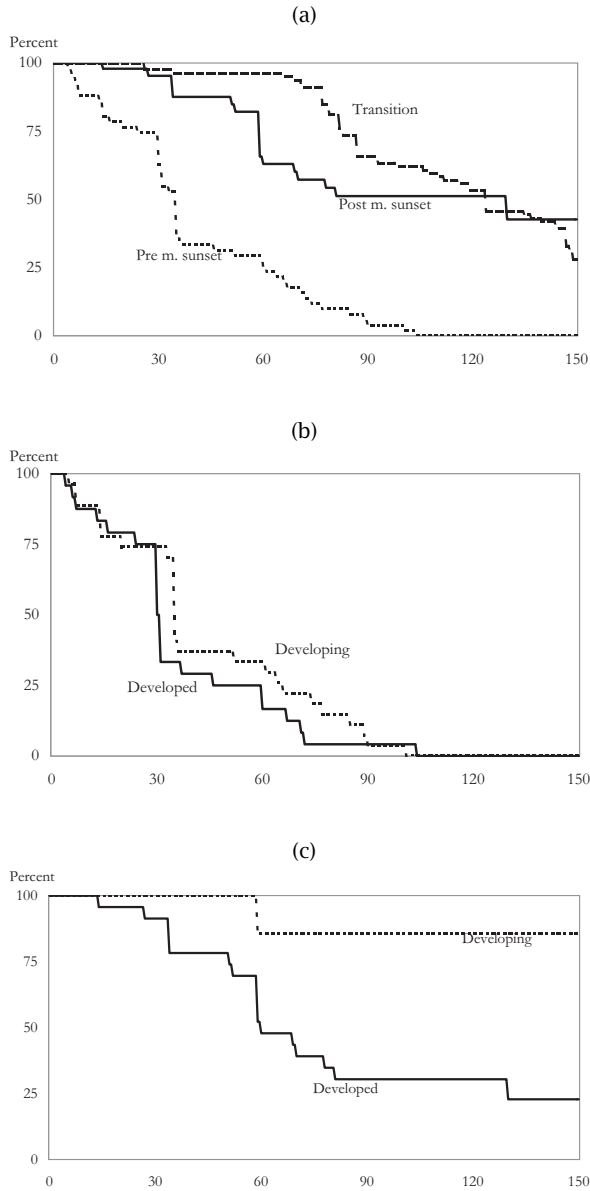


Figure 2.12: Percentage of US CVD measures in effect by duration (in months): (a) pre-versus post-mandatory sunset review clause; (b) developed versus developing countries (pre-mandatory sunset); (c) developed versus developing countries (post-mandatory sunset).

Source: author's calculations using *Temporary Trade Barriers Database* (Bown 2010a).

pursuing a sunset review is a decision common to all three firms and would likely be jointly funded. A sunset review might cost a total of \$1 million, about one-ninth the cost of the sunset via the administrative review process.

Second, if countries thought the Uruguay Round's sunset review language would appreciably lower the duration of anti-dumping and CVD orders, they were mistaken. The US implementation of sunset review has produced the opposite effect—measures are now in place longer than they were pre-Uruguay Round. That is, the fraction of measures revoked in two, three, four and five years in the pre-Uruguay Round era far exceed the fraction of measures revoked by four years in the post-Uruguay Round era.

In panels (b) and (c) of Figures 2.11 and 2.12, developed and developing countries' sunset experiences are compared. In panel (b), the duration of orders prior to mandatory sunset is examined. In this period there were sufficiently few cases brought against China that the decision was made not to report China separately. Both Figure 2.11 (anti-dumping) and Figure 2.12 (CVDs) show that, in this early period, developed and developing countries had very similar experiences. The two survival curves are very similar. A log-rank test of equality of the curves cannot reject that they have the same survival experience.

A very different story emerges for the post-Uruguay Round period. Temporary trade barriers against developing countries are far longer lived than those against developed countries. With anti-dumping, developed and developing countries have a similar experience during the first five years. However, at the initial sunset review stage about 40% of measures against developed countries are revoked as compared with less than 25% of measures against developing countries. Moreover, the difference persists for years. About as many cases are revoked against developing countries after 11 years as are against developed countries after 5 years. This is a remarkable result that is especially surprising given that it was developing countries that pushed hardest for mandatory sunset. This observation can be made from Figure 2.11(c), where China is separated from other developing countries as the activity against China becomes significant in the mid-1990s.

The difference between developed and developing countries is even starker when CVDs are considered. As can be seen from the figure, US CVDs imposed against developing countries are rarely revoked. The data indicate that more than 90% of measures against developing countries remain in effect after the initial review. By contrast, measures against developed countries have been removed fairly consistently throughout the period. By year five about 40% of the orders have been removed, and by year ten about 75% of the orders have been removed. The gap in duration is large.

The difference in duration is a serious issue for developing countries. The data indicate that the USA is much more likely to keep an order in place against a developing country than it is against a developed country. This policy issue certainly warrants further analysis.

7 CHINA SAFEGUARD ON PASSENGER AND TRUCK TYRES

Arguably the most publicised TTB during the 2008–9 crisis involved automobile and light-truck tyres imported from China under the ‘China safeguard’ statute. Prior to the tyre case, US industries had filed six China safeguard petitions between 2002 and 2009. None had resulted in measures being taken. In each case the USA decided that either the imports from China were not a cause of injury to the US industry or that the costs of protection (greater tensions with China, consumer costs) exceeded the benefits (increases in output and/or employment for the domestic industry). In September 2009, the USA announced that it would impose tariffs on tyres from China for three years: 35% tariff in year one, 30% in year two and 25% in year three. The decision not only provoked public criticism and a WTO complaint by China but it was likely a contributing factor in China initiating TTBs on US exports of automotive products and chicken parts. What made this case different from others? Was all the attention warranted?

The primary explanation for the press attention is size: the passenger and truck tyre case involved considerably more trade than any prior China safeguard case. In the last year before the safeguard case was initiated, the USA imported \$6.9 billion of tyres—\$1.8 billion from China alone. The next biggest China safeguard case involved welded steel piping in 2005. In the last year before the steel piping case was initiated, the USA imported \$725 million of steel piping, of which \$154 million was sourced from China. Thus, in terms of trade value, the tyres case was about ten times the size of the next largest case.

Yet, there are at least two reasons to believe that too much was made of the involved trade value. First, while the case was easily the biggest China safeguard case, it was not extraordinarily large as far as TTBs go. Figure 2.13 gives information on trade value for other TTB cases in 2009. Trade values for three significant cases initiated earlier in the decade are also included. As can be seen from the figure, the tyre case was not even the biggest TTB case in 2009; the anti-dumping/CVD dispute involving oil-country tubular goods affected almost a billion dollars more of imports (from China alone). The China safeguard on tyres also involved less trade value than earlier TTB cases on shrimp, furniture or dynamic random-access memory, none of which garnered as much of the spotlight as the tyre case. Second, while tyre imports from China were indeed large, the USA also imported almost \$5 billion in tyres from other suppliers. The availability of significant alternative suppliers likely diminished the chance that US consumers would experience shortages or significantly higher prices.

Another reason why the tyre case drew so much press was that it was *not* initiated by domestic producers of tyres. In fact, the public record indicates that domestic producers were opposed to the safeguard action. The case was initiated by tyre workers. The argument was that injury from imported tyres

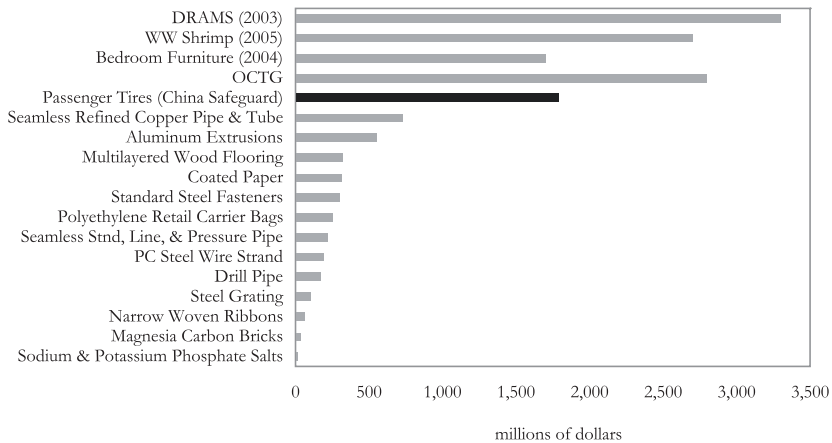


Figure 2.13: Annual import values of selected products subject to US measures (annual import value corresponds to the year before the case was initiated).

Source: author's calculations using *Temporary Trade Barriers Database* (Bown 2010a) and Comtrade.

was accruing to workers, not the firms. It might seem surprising that the firms and workers viewed imports so differently before it is understood that the firms accounting for nearly all US domestic production also accounted for most of the tyres imported from China (see United States International Trade Commission (2009, Table II-3)). The vast majority of tyres are produced by large global multinational firms and US tyre facilities are just one part of their global manufacturing base. A trade policy focusing exclusively on China overlooked the many other developing countries who, but for China, would export more tyres to the US market.

Despite the availability of other suppliers, the trade data show that China had indeed gained market share during the late 2000s. Figure 2.14 illustrates imports of tyres, showing both total imports and imports from China alone. As can be seen from the figure, China was selling more than twice as many tyres to the USA in early 2008 than it had just a few years earlier.

The case also highlighted the problem of discerning injury caused by the recession from injury caused by subject imports. Given the lack of support from domestic producers, injury essentially boiled down to evidence of job losses. Nevertheless, blaming imports from China for the losses was confounded by the fact that, during the 12 months prior to the filing of the case, tyre imports from China had fallen. Overall imports were falling, imports from China were receding, tyre demand was plummeting and tyre workers were being laid off, all at the same time. China felt that the case was a prime

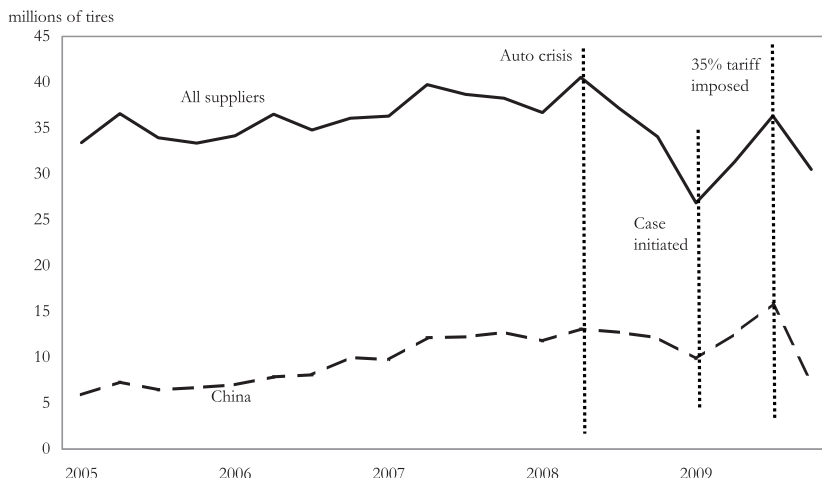


Figure 2.14: US tyre imports (quarterly).

Source: author's calculations using *Temporary Trade Barriers Database* (Bown 2010a) and Comtrade.

example of it being made the scapegoat for woes caused by the worldwide recession.

8 CONCLUSION

This review of US TTB activity has yielded a number of interesting insights. One important finding is methodological—most key insights are not sensitive to the metric used to measure TTBs. The different metrics (case, unweighted product, trade-weighted product) are all found to portray similar qualitative results with respect to the flow of new activity. However, the stock of TTBs is sensitive to choice of metric. While the merits of each metric can be debated, it is clear that the weighted metric reveals details on the scope and depth of TTBs that the easier-to-use metrics miss. Exploring these differences is something future research should investigate.

A second key finding is the extraordinary extent to which US TTBs are focused on a single supplier (China). Depending on exactly how the question is framed, the data show that China now accounts for 50–85% of new US TTB activity. China now has a higher fraction of its trade under US TTB measures than all developing countries put together and all developed countries put together. This would be remarkable under any circumstances, but it is even more striking when one realises that China was subject to very few TTBs just a decade ago.

The relative lack of TTB surge during (and following) the 2007–9 recession is also a key finding. While anti-dumping and CVD filings did increase, the overall level of activity was modest by historical standards. The recession also seemed to have influenced the first (and only) China safeguard measure, but one action cannot reasonably be called a surge.

Why wasn't there a sharp increase in new petition filings in the 2007–9 recession that has been typical in past recessions? Here, four contributing explanations are given. First, the single biggest user of TTBs in the US—the steel industry—already had TTB measures on most of its key products. The efforts by the steel industry to pressurise US authorities into not sunseting cases meant that most of the usual suspects were already subject to large TTB tariffs. For example, key products such as hot-rolled steel, plate, ball bearings and piping fuelled the surge in TTB activity in the early 1980s, early 1990s, and early 2000s.¹⁹ In the 2007–9 recession, the key foreign suppliers of each of these products (and many other steel products) were already subject to TTBs.

Second, in earlier recessions, the decline in imports appears to have been roughly proportional to the decline in US manufacturing activity. In the 2007–9 recession, imports fell by a greater amount than the decline in US manufacturing activity (Levchenko *et al* 2010). US imports declined by more than 25% in 2009. In earlier recessions, imports declined by about one-quarter that amount. This unusually severe contraction meant that there were not a lot of products where imports were *increasing*, either absolutely or relative to domestic production or consumption. On average, the fall in import market share makes it more difficult to allege that imports 'cause' the domestic industry's injury. In such circumstances, the recession is a more apparent cause of the downturn.

Despite the evidence, it must be stressed that the role of the decline in imports is speculative. Trade cases are filed on specific products that usually make up a very small share of total industry imports, so extrapolating from industry-wide data to a conclusion as to why a particular product within that industry did not seek TTB protection involves a leap of faith that may or may not be warranted. In addition, there is clear evidence that cases were filed and received TTB protection despite large falls in import volume and market share. At least some industries were able to take advantage of the demand fall. Three cases adjudicated in 2010—oil-country tubular goods, drill piping and coated paper—all experienced huge declines in imports. Moreover, in each case the domestic industry was able to remain profitable despite the recession. Consequently, in each case the domestic industry claimed the recession made it vulnerable to imports. The USA was apparently sympathetic to this claim. In each case the US imposed the TTB measure not because the industry was injured but because it was threatened with injury.

¹⁹Moore (1996) discusses the steel industry's surge of cases during the recessions of the early 1980s and early 1990s.

Third, the changing role of manufacturing in the US economy might also be influencing trends. Trade remedy laws like anti-dumping and CVD only apply to goods, not to services. Yet the US economy continues to shift from manufacturing to services. Moreover, an increasing portion of that manufacturing takes place in segments where there is some unique US advantage, or where the industry is highly globalised so that intra-industry trade occurs and each involved country is necessary to the overall functioning. The traditional users of trade remedy laws—industries with large capital costs, and large investments in fixed assets—are becoming a smaller and smaller part of the overall economy.

Fourth, as documented by Knetter and Prusa (2003), the exchange rate plays an even larger role in driving new TTBs than changes in GDP. Since 2001, the US dollar has depreciated relative to other currencies (except the Chinese yuan). This tends to put a damper on import levels, as stronger foreign currencies makes exports to the USA less competitive in US dollar terms. Similarly, China's fixed exchange rate is likely a key contributing factor behind many US TTBs targeting Chinese exporters.

Thomas J. Prusa is Professor at Rutgers, The State University of New Jersey, and Research Associate at The National Bureau of Economic Research.

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