The March of an Economic Idea?

Protectionism Isn't Counter-Cyclic (anymore)

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Comments Welcome

Abstract

Conventional wisdom holds that protectionism is counter-cyclic; tariffs, quotas and the like grow during recessions. While that may have been a valid description of the data before the First World War, it is now inaccurate. Since the Second World War, protectionism has not been counter-cyclic; tariffs and non-tariff barriers simply do not rise systematically during downturns. I document this new stylized fact with a panel of data covering over 180 countries and 40 years, using over a dozen measures of protectionism and six of business cycles. I test and reject a number of potential reasons why protectionism is no longer counter-cyclic. A "diagnosis of exclusion" leads me to believe that modern economics may well be responsible for the decline in protectionism's cyclic behavior; economists are more united in their disdain for protectionism than virtually any other concept. This in turn leaves one optimistic that the level of protectionism will continue to decline along with its cyclicality.

Keywords: empirical, panel, data, policy, trade, barrier, international, tariff, recession, business cycle.

JEL Classification Numbers: E32, F13

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1. The Buzz

Physics has quantum mechanics, relativity, and now the Higgs boson. Chemistry has developed the battery, plastics, and radioactivity; modern medicine has given us antibiotics, transplants and vaccination. What has Economics done for humanity lately, if ever? In this paper I argue that perhaps, just perhaps, modern economics is responsible for the decline in protectionism … or at least its (counter-) cyclicality.

It is widely accepted that protectionism is counter-cyclic; tariffs, non-tariff barriers and the like are more numerous and/or intense during recessions. Indeed, the entire academic literature, without exception (to the best of my knowledge), agrees that protectionism is counter-cyclic; a review (relegated to the appendix) provides more details.[1,2] This paper has a single primary objective: refuting that hypothesis. I wish to establish a new stylized fact; during the post-WW2 era, protectionism has not been counter-cyclic. By way of contrast, there is widespread agreement that protectionism was counter-cyclic before WW1.

The secondary goal of this paper is to interpret my new finding; why did the cyclic nature of protectionism change, and what should we make of it? Modern economies differ from those of a century ago in a number of ways. Most counties are now richer, bigger and more open; income and value-added taxes are more important sources of government revenue; many exchange rates now float; the social safety net is larger; production is fragmented across international boundaries; there is more intra-industry trade; and international institutions like the WTO restrict commercial policy. However, in practice none of these things seem to affect the responsiveness of protectionism to the business cycle. That is, the cyclicality of protectionism does not differ systematically between rich and poor countries, between open and closed countries, between those with fixed as opposed to flexible exchange rates, and so forth. I arrive, through a "diagnosis of exclusion," at the conclusion that modern economics may well be responsible for the change. No idea is more widely accepted within the economics profession than that protectionism is an evil which is to be fought any time, any place. While I can provide no direct evidence, it seems plausible that the decrease in the cyclicality of protectionism means that we're winning this particular battle. This in turn leads me to an optimistic conclusion that the economics profession can help win the war to eradicate protectionism.

2. Three Pictures and a Motivation

I start with a long span of American data. From *Historical Statistics of the United States*, I extract annual series on tariffs (technically, duties measured as a percentage of dutiable imports) and unemployment (measured as a percentage of the labor force); the series have been updated through 2010 (by the USITC and BLS respectively). In the top-left graph of Figure 1, I provide time series plots of these series since 1890, when unemployment data become available. The graph immediately below is a scatter-plot of the tariff (on the y-axis) against unemployment (on the x-axis). This shows a positive relationship over the whole period; when unemployment rises during bad times, so does the tariff. Strong evidence of counter-cyclic protection! The sample is split into two in the scatter-plots to the

right. Above, the data show the expected positive relationship between 1890 and 1939; high unemployment in the 1930s tends to coincide with high tariffs. However, this relationship is strikingly reversed in the graph below, which scatters tariffs against unemployment for the period between 1950 and 2010.[3] Since World War Two, *high* American unemployment seems to coincide with *low* American tariffs; protectionism seems to be, if anything, cyclic.

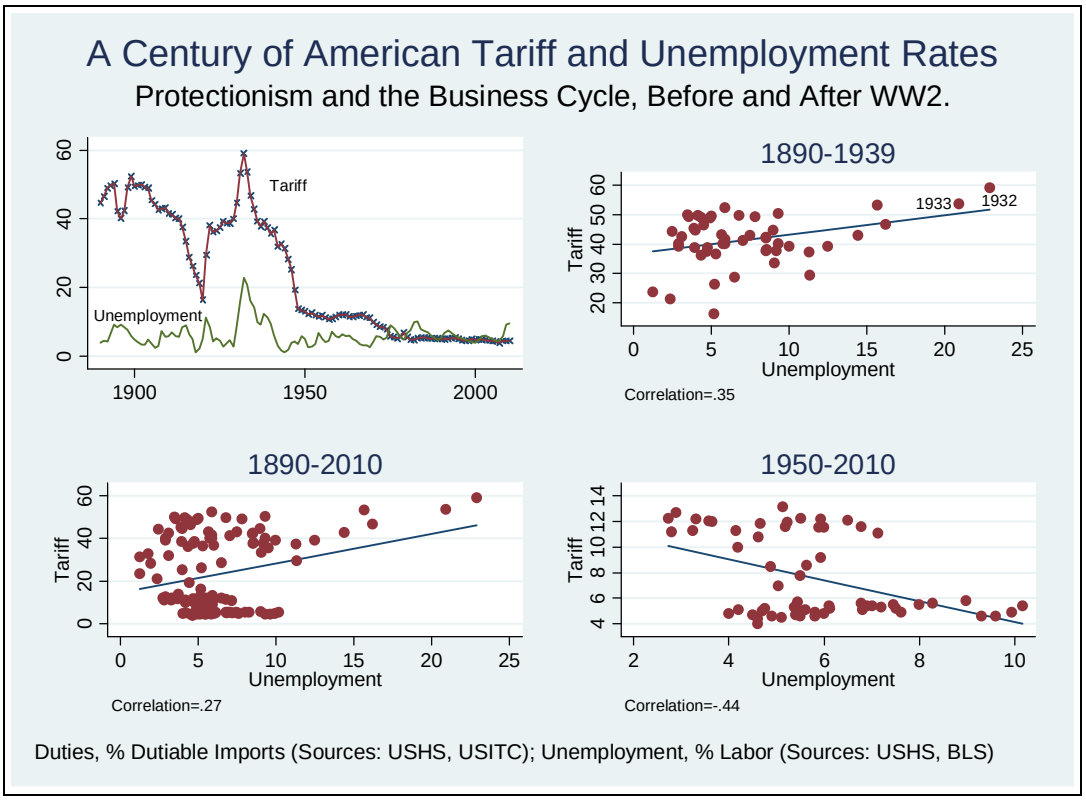


Figure 1

Of course, the evidence in Figure 1 is by no means definitive. At least two issues spring immediately to mind. First, the figure only uses American data. Second, the measure of protectionism in the figures is the aggregate tariff rate. Tariffs can be measured over long periods of time and were a vital part of protectionism before WW1. However, non-tariff barriers (NTBs) are widely considered to be an important feature of post-WW2 protectionism. Accordingly, Figure 2 provides time series plots of annual *global* GDP growth and the total number of commercial disputes initiated world-wide under the GATT/WTO dispute settlement system; the two series are also scattered against each other. The number of new GATT/WTO disputes is by no means a perfect measure of protectionism. Complaints are not formally initiated against all protectionism, are not equally important, and are not randomly initiated across countries. The inadequacies of the GATT system lead to considerable reform under the

WTO in 1995. Still, this measure covers both the world and NTBs; moreover the measurement problems do not seem cyclic in nature.[4]

The message from Figure 2 is that, for the world as a whole, global growth is essentially uncorrelated with the initiation of disputes under the multilateral mechanism set up precisely to handle protectionist squabbles. Indeed, the public's interest in protectionism does not seem cyclic. As a crude measure of public interest on the topic, I include in Figure 2 data on the number of articles in *The New York Times* that use the term 'protectionism'. Neither the initiation of GATT/WTO disputes nor the NYT count is correlated with global growth. Protectionism does not seem to be (counter-) cyclic.

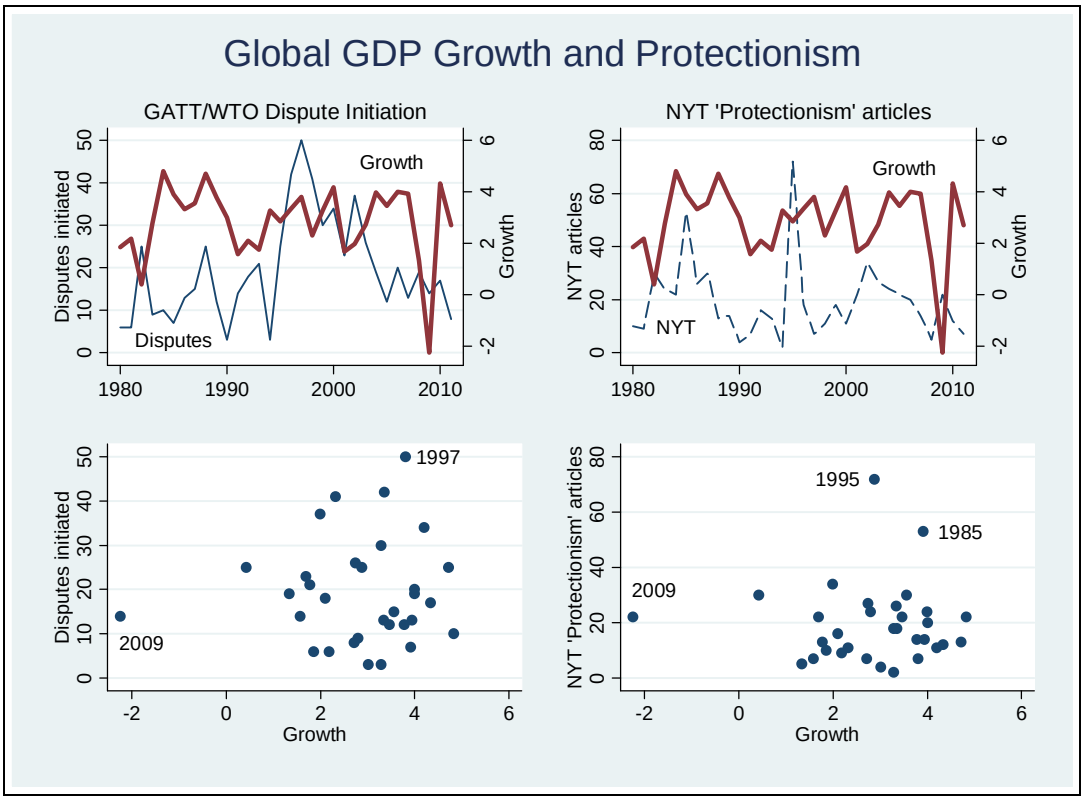


Figure 2

One of the most striking features of the graphs in Figure 2 is the episode of the "Great Recession." Global growth collapsed in 2009 without a corresponding uptick in either trade disputes or discussion of protectionism. This is a revealing observation; the most serious recession in generations does not seem to have resulted in more protectionism.

One could discard 2009 as a random blip in a series, but it seems wiser to treat it as a particularly illuminating observation, a natural testing ground for cyclic behavior. Accordingly, I explore the Great Recession episode further in Figure 3, which portrays trade and three trade barriers between

1995 (when the WTO began) and 2011. All are scattered (on the y-axis) against global growth so that the observations remain the same along the x-axis. Anti-dumping actions are perhaps the most common form of protectionism and have been much analyzed in the literature, e.g., Knetter and Prusa (2003) and Bown and Crowley (2012). Initiations of anti-dumping appear in the top-right graph, aggregated over the 22 countries with data available between 1995 and 2011. The series on anti-dumping actions is taken from the World Bank's Temporary Trade Barriers Database (TTBD), from which I also extract series on new safeguards (aggregated across the 48 countries with available data) and countervailing duties imposed (9 countries).[5] Together, these constitute some of the most important GATT-legal ways for countries to manipulate protectionism.

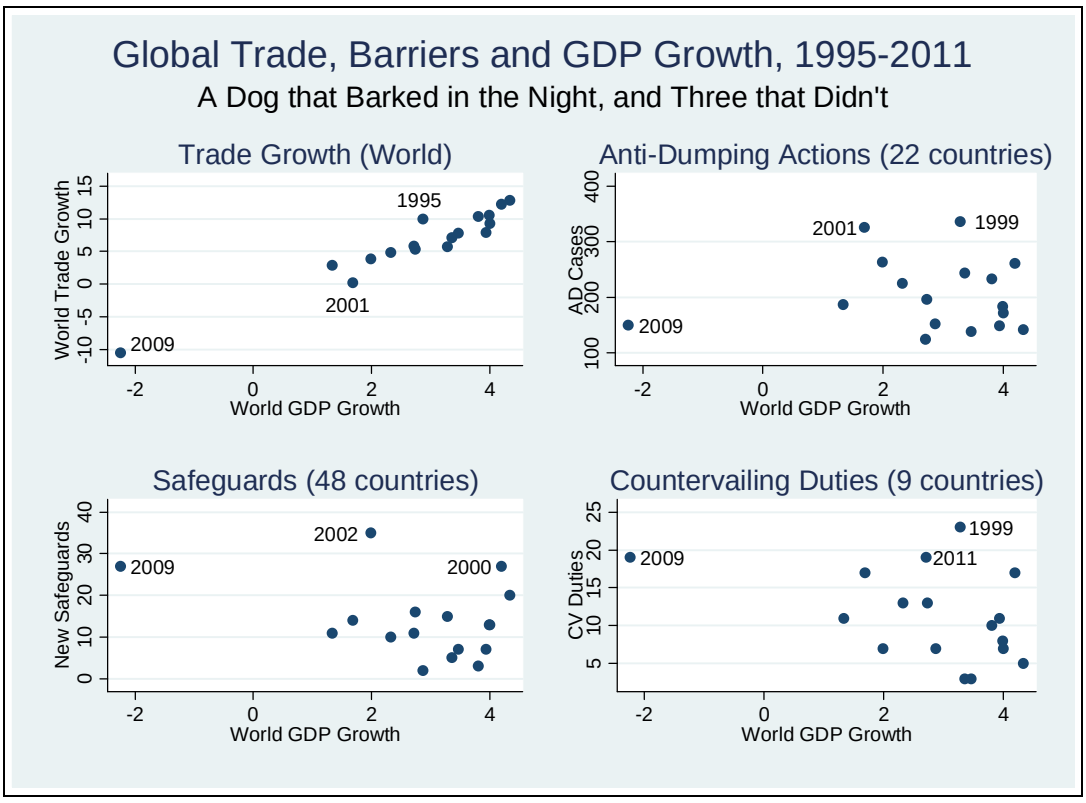


Figure 3

To see what a strong correlation (.96) looks like, check out the strong relationship between global trade and growth in the top-left graph. The most visible observation in the graph (indeed, of all four graphs in Figure 3) is the Great Recession of 2009 at the extreme (bottom-) left, which coincided with a dramatic collapse in international trade unprecedented in its suddenness, severity, and synchronization. But the top-right graph shows that the number of anti-dumping cases was actually *low* during the 2009 collapse; over the entire period, anti-dumping cases are uncorrelated (.02) with global growth. There is also no sign of a decisive upward movement in safeguards or countervailing duties in

2009, especially when compared with the magnitude of the global recession.[6] If protectionism were strongly counter-cyclic, such trade barriers should be strongly negatively correlated with growth. They aren't.[7]

3. The Stuff

None of the five measures of protectionism I've examined so far (tariffs, disputes, anti-dumping, safeguards, and countervailing duties) show a strong relationship with the business cycle, at least since WW2. It is especially striking that the Great Recession of 2009 does not coincide with any obvious increase in protectionism. Of course, there may be some more subtle relationship waiting to be uncovered. The figures are bivariate; no account is taken of other factors. Dynamics have been ignored, as have other measures of protectionism and the business cycle. Figure 1 uses American data, while Figures 2 and 3 use data aggregated across the world; what about all those other countries? For all these reasons, I now turn to more comprehensive statistical analysis.

Protectionism and Output: Panel Evidence

I begin by tabulating results in Table 1 from the following regression:

$$Protection_{it} = \{\alpha_i\} + \{\beta_t\} + \gamma BC_{it} + \varepsilon_{it} \quad (1)$$

where: $Protection_{it}$ is a measure of protectionism for country i in year t; $\{\alpha\}$ and $\{\beta\}$ are comprehensive sets of country- and time-specific fixed effects respectively; BC_{it} is a measure of the business cycle; and ε is a well-behaved residual that represents a host of other (hopefully well-behaved) factors. I use least squares to estimate the coefficient of interest to me, γ, which provides an estimate of the cyclicality of protectionism. A negative and significant value of γ indicates that when the business cycle swings down into recession, protectionism rises; counter-cyclic protectionism. This set-up is a reduced-form, so structural claims are inappropriate; it is unclear whether γ reflects the demand for protectionism, its supply, or both.[8] My sample begins when data on protectionism becomes available (this varies by measure of protectionism) and ends in 2010 (when the output data ends).

To ensure that my results are robust, I consider six different measures of protectionism, and five different ways to de-trend output (and thus measure the business cycle). The first four of my six measures of protectionism include: a) the number of anti-dumping cases initiated (from TTBD); b) countervailing duties imposed (TTBD); c) safeguards (TTBD); and d) disputes initiated through the WTO (WTO).[9] These are portrayed in Figures 2 and 3 though in aggregated form; below, I use them on a national basis. I also use e) the applied tariff rate, averaged across goods with trade weights (available

from the World Bank's *World Development Indicators*, WDI). Finally, I use f) the "Index of Trade Freedom," a component of the Heritage Foundation's "Index of Economic Freedom" (IEF). Like the overall index, the index of trade freedom is estimated annually and varies between 0 (North Korea) and 100 (Hong Kong, Macau, Singapore and Switzerland currently share the highest score of 90). It is "a composite measure of the absence of tariff and non-tariff barriers that affect imports and exports of goods and services" and is freely available recently for 155 countries.[10]

I am also concerned to show that my results do not depend sensitively on the exact way the business cycle is measured. Reliable unemployment data are unavailable for much of the sample. Accordingly, I measure the business cycle as the deviation from trend of the natural logarithm of real GDP, extracted from the Penn World Table 7.1, and adjusted for PPP deviations.[11] I de-trend output using five techniques: a) Baxter-King filtering; b) Christiano-Fitzgerald filtering; c) Hodrick-Prescott filtering; d) annual growth rates; and e) residuals from a linear time trend.[12]

Table 1 presents estimates of γ – the responsiveness of protectionism to the business cycle – from equation (1), along with its (robust) standard error. Consider the top-left entry. This indicates that the effect of an increase in real GDP above its trend (computed with the Baxter-King filter) on the initiation of anti-dumping cases is statistically negligible but *positive,* indicating somewhat *pro*-cyclic protection. The cells immediately to the right show that this (non-)result does not depend on the precise de-trending method.[13] The rows beneath indicate that this result is insensitive to the precise measure of protectionism. Half the coefficient estimates indicate that expansions are associated with *more* protectionism, though none of these is significantly different from at zero at conventional confidence levels. Only two of the thirty are coefficients statistically significant at the .05 level.

Table 1: Responsiveness of Protectionism to Business Cycles

Business Cycle De-trending:	**Baxter-King**	**Christiano-Fitzgerald**	**Hodrick-Prescott**	**First-Differencing**	**Linear in Time**
Anti-Dumping Cases (TTBD), 1978-	11.7 (12.9)	7.7 (12.2)	20.7 (11.5)	.03 (.09)	-3.8 (9.5)
Countervailing Duties (TTBD), 1977-	-4.6 (2.8)	-14.9* (6.7)	-3.8 (2.7)	.03 (.05)	-5.1 (4.7)
Safeguards (TTBD), 1995-	.3 (.3)	.6 (.3)	.3 (.3)	.003 (.002)	.1 (.1)
WTO Disputes Initiated (WTO), 1995-	-1.6 (2.9)	1.2 (1.3)	-.7 (1.8)	.03 (.02)	.1 (.6)
Mean Weighted Applied Tariff (WDI), 1988-	-7.5 (18.3)	-4.6 (12.1)	-8.3 (14.5)	-.02 (.03)	-4.5 (3.0)
Index of Trade Freedom (IEF), 1995-	-7.8 (7.9)	-5.8 (6.8)	-6.9 (7.1)	.03 (.04)	7.4* (3.5)

Each cell is a coefficient from a separate regression of a measure of protectionism (left-hand column) on deviation of log real GDP from trend. Robust standard errors in parentheses; coefficients significantly different from zero at .05 (.01) marked by one (two) asterisk(s). OLS estimation with country- and time-specific fixed effects; annual data through 2010.

The message from Table 1 is that the precise measures of neither the business cycle nor protectionism seem to matter very much. Still, a number of assumptions implicitly underlie Table 1. In eight appendix tables, I provide sensitivity analysis which shows that the acyclic nature of protectionism

is insensitive to dropping: a) time-specific fixed effects, b) rich countries, c) small countries, d) the 2009 and 2010 observations during and after the Great Recession, and e) outliers. Another table employs Poisson and Tobit estimators to account for the count/censored nature of the regressands, still another uses the unemployment rate as a measure of the business cycle instead of de-trended output, and yet another lags de-trended output instead of using contemporaneous values. None of these robustness checks provides evidence that protectionism is counter-cyclic.[14,15]

If a picture is worth a thousand words, I provide many thousands in Figure 4 where I scatter the six Table 1 measures of protectionism against the business cycle. For the latter, I use a natural measure of the business cycle, namely real GDP de-trended via the HP-filter. These scatter-plots contain a lot of information, since each available (country x year) observation is shown. To guide the eye, I also provide a regression line, and record the correlation coefficient in the sub-title. The lines are flat, and the coefficients are low. If protectionism were counter-cyclic, these scatter-plots should slope downward; instead they seem to be blurry clouds. Consistent with the message from Table 1, the message from Figure 4 is clear: protectionism simply doesn't move in any obvious way with the business cycle.

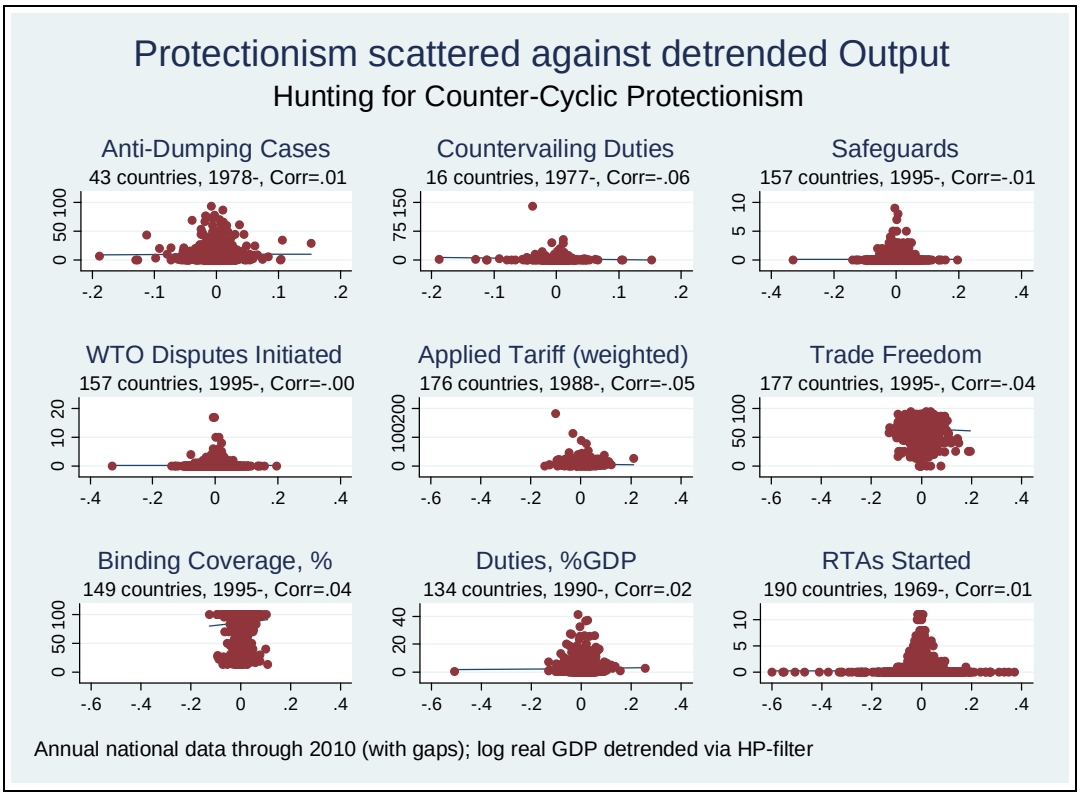


Figure 4

A different take on the cyclicality of protectionism is provided in Figure 5. This provides an event study that characterizes protectionism around the onset of deep recessions. I characterize a deep

recession as a transition from an economy that is growing one year and above its (HP-filtered) trend path to one that is shrinking the next year by at least 2% and is at least 2% below its trend.[16] In the sample, there are 327 of these extreme events. Figure 5 characterizes four measures of protectionism in the decade before, during, and after the onset of these recessions.[17] The top-left graph, for example shows that the average number of anti-dumping cases filed does not essentially change as one moves (from the left) during the run-up to a serious recession, through the event itself (marked with a vertical line) to its aftermath (on the right). None of the indicators of protectionism rises significantly – in either statistical or economic terms – around and especially after these recessions. Another blank for counter-cyclic protectionism.

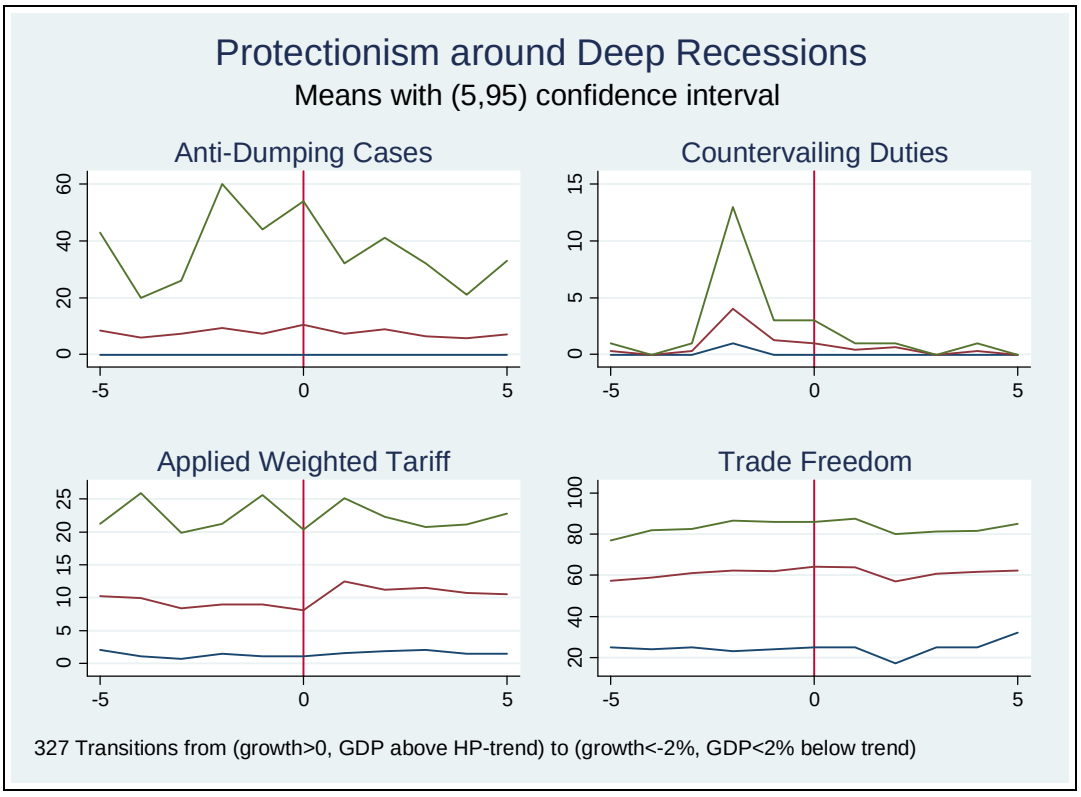


Figure 5

Other Measures of Protectionism

None of the six measures of Table 1/Figures 2/3/4/5 is a perfect measure of protectionism; they do not represent the totality of policies governments can use to protect domestic markets from foreign competition. My hope is that they are collectively and cumulatively persuasive. But there are other measures of protectionism; why not use them? In Table 2, I do.

The results presented in Table 2 rely on the same estimation strategy as Table 1, but substitute alternative measures of protectionism for the dependent variable. I use five protectionist measures available from the WDI including: a) the percentage of all products with protection at the bound tariff limit; b) the simple average of the bound rate (averaged across all products); c) the share of tariff lines (across products) with international peaks; d) customs duties measured as a percentage of output; and e) export taxes measured as a percentage of tax revenue. I also use f) the number of Regional Trade Agreements (RTAs) either initiated or completed, taken from Moser and Rose (2011); and g) the sum of anti-dumping cases, countervailing duties and safeguards (as advocated by Bown and Crowley, 2012).[18] Three of the more important measures are also scattered against the business cycle at the bottom of Figure 4.

Table 2: Responsiveness of Protectionism to Business Cycles: Different Regressands

Business Cycle De-trending:	**Baxter-King**	**Christiano-Fitzgerald**	**Hodrick-Prescott**	**First-Differencing**	**Linear in Time**
Binding Coverage, % products (WDI), 1995-	-1.0* (.4)	-.8** (.3)	-.7* (.3)	-.001 (.002)	-.1 (.1)
Mean Bound Rate, all products (WDI), 1995-	1.2 (1.4)	3.8 (2.4)	4.2 (2.4)	.02** (.01)	2.3* (1.1)
% tariff lines at internat'l peaks (WDI), 1988-	25.3 (13.6)	16.9 (11.8)	18.2 (11.0)	-.03 (.08)	3.9 (5.5)
Customs Duties % GDP (WDI), 1990-	1.8 (1.5)	1.8 (1.0)	1.8 (1.3)	.02** (.01)	1.5 (1.8)
Exports Taxes % Taxes (WDI), 1990-	2.8 (4.6)	-.4 (3.4)	-.5 (4.6)	-.03 (.04)	2.5 (2.8)
RTAs initiated/completed (Moser-Rose), 1969-	.1 (.1)	.2 (.1)	.1 (.1)	.001 (.001)	.02 (.08)
Anti-dumping cases + countervailing duties + safeguards (TTBD), 1977-	-5.0 (6.1)	-2.0 (3.4)	-3.2 (5.2)	-.00 (.02)	-.7 (2.2)

Each cell is a coefficient from a separate regression of a measure of protectionism (left-hand column) on deviation of log real GDP from trend. Robust standard errors in parentheses; coefficients significantly different from zero at .05 (.01) marked by one (two) asterisk(s). OLS estimation with country- and time-specific fixed effects.

The results from Table 2 are weak. Of the thirty-five coefficients, three are significantly different from zero at the 1% significance level, and another three at the 5% level. Different measures of protectionism also give inconsistent results (for instance, binding coverage falls as the economy improves, but so do bound rates), as do different methods of de-trending. Succinctly, the message from Tables 1 and 2 seems to be that protectionism is essentially acyclic.[19]

Adding Controls

While the regressions results in Table 1 account for country- and time-specific effects, they do not control for time-varying factors other than the business cycle. Perhaps the effect of cyclicality on protectionism is masked by other influences and become stronger once other controls are included?

While this strikes me as unlikely, it is easy to check out directly. Table 3a includes six other control variables (along with country and time effects). Most of the controls are taken from the WDI; they represent a wide range of economic phenomena: population, real per capita income, the current account and trade (both relative to GDP), and two measures of the real exchange rate.[20] Table 3b is an analogue but include controls for the nominal exchange rate regime using the Reinhart and Rogoff data set.[21] However, these controls do not change the message: protectionism does not seem to be cyclic.

Table 3a: Responsiveness of Protectionism to Business Cycles: Macro Controls

Business Cycle De-trending:	**Baxter-King**	**Christiano-Fitzgerald**	**Hodrick-Prescott**	**First-Differencing**	**Linear in Time**
Anti-Dumping Cases Initiated, 1978-	-7.4 (29.0)	8.3 (22.4)	6.0 (24.1)	.1 (.1)	-49.0 (11.5)
Countervailing Duties, 1977-	30.1 (39.9)	29.7 (36.2)	31.2 (36.9)	.0 (.1)	-45.8 (53.4)
Safeguards, 1995-	-.3 (.8)	.1 (.7)	-.5 (.6)	-.002 (.003)	-.1 (.2)
WTO Disputes Initiated, 1995-	-.1 (2.5)	3.3 (2.9)	-.4 (2.0)	.05 (.04)	-.5 (1.3)
Mean Weighted Applied Tariff, 1988-	9.3 (15.3)	-1.9 (13.1)	5.1 (12.3)	-.1 (.1)	.6 (5.7)
Index of Trade Freedom, 1995-	-27.2 (20.5)	-14.5 (13.3)	-23.5 (17.1)	-.2* (.1)	1.1 (9.5)

Each cell is a coefficient from a separate regression of a measure of protectionism (left-hand column) on deviation of log real GDP from trend. Robust standard errors in parentheses; coefficients significantly different from zero at .05 (.01) marked by one (two) asterisk(s). OLS estimation with country- and time-specific fixed effects. Controls included but not recorded are from *WDI*: a) natural logarithm population, b) log real GDP per capita, c) log deviation from PPP value, d) current account/GDP, e) Merchandise Trade/GDP, and f) real effective exchange rate.

Table 3b: Responsiveness of Protectionism to Business Cycles: Exchange Regime Controls

Business Cycle De-trending:	**Baxter-King**	**Christiano-Fitzgerald**	**Hodrick-Prescott**	**First-Differencing**	**Linear in Time**
Anti-Dumping Cases Initiated, 1978-	-3.7 (25.0)	-11.9 (21.4)	4.5 (25.6)	-.1 (.1)	-11.0 (13.2)
Countervailing Duties, 1977-	5.2 (13.9)	9.0 (16.6)	7.8 (16.4)	.02 (.08)	-3.2 (3.4)
Safeguards, 1995-	.3 (.4)	.7 (.4)	.3 (.4)	.001 (.002)	-.0 (.1)
WTO Disputes Initiated, 1995-	-1.2 (3.0)	1.2 (1.7)	-.7 (2.4)	.03 (.02)	-.2 (1.2)
Mean Weighted Applied Tariff, 1988-	-7.5 (18.3)	-4.7 (12.1)	-8.3 (14.5)	-.02 (.03)	-4.5 (3.0)
Index of Trade Freedom, 1995-	-7.8 (7.9)	-5.8 (6.8)	-6.9 (7.1)	.03 (.04)	7.4* (3.5)

Each cell is a coefficient from a separate regression of a measure of protectionism (left-hand column) on deviation of log real GDP from trend. Robust standard errors in parentheses; coefficients significantly different from zero at .05 (.01) marked by one (two) asterisk(s). OLS estimation with country- and time-specific fixed effects. Exchange rate regime controls from Reinhart-Rogoff: a) fix; b) crawling peg; c) wide peg; d) floating rate; and e) free fall.

Historical Data

Everything I've done so far shows that protectionism does not seem to be counter-cyclic … at least for the data we have since the Second World War.[22] But the literature (as well as the admittedly

limited evidence of Figure 1) indicates that protectionism used to be counter-cyclic, at least before WW1. Before trying to understand why there might have been a switch, it seems appropriate to confirm the counter-cyclicality of protectionism before WW1.

It is difficult to find reliable data that pre-dates WW1 and is available for many countries on business cycles, and, especially, protectionism. From Brian Mitchell's *International Historical Statistics*, I take series on customs duties, imports, and national income. These series are available (with gaps) for eighteen countries back to 1850. I normalize duties by imports and use this as a crude measure of protectionism; I de-trend output using the same five techniques as employed above. These data are likely to be noisy, so I begin by using three year averages of the annual data, using the same estimation strategy as I employ in Tables 1-3.

When I restrict my attention to the gold-standard era before WW1, strong evidence of counter-cyclic protectionism emerges. All the coefficients in the first row of Table 4 are negative, consistent with counter-cyclic protectionism, and four of the five coefficients are significantly different from zero at the 1% significance level. The annual results are considerably weaker; only three coefficients are negative. Only one of these is significantly negative, while one of the other two is significantly positive. Similarly, the evidence that protectionism was counter-cyclic during the period between the world wars is also weak; three of the coefficients are negative (none significantly so), while two are positive (one significantly different from zero at the 5% level).[23]

Table 4: Pre-WW2 Results: Responsiveness of Customs Duties/Imports to Business Cycles

Business Cycle De-trending:	Baxter-King	Christiano-Fitzgerald	Hodrick-Prescott	First-Differencing	Linear in Time
3-year averages	-.39**	-.31**	-.33**	-.001	-.35**
	(.12)	(.12)	(.12)	(.001)	(.04)
Annual data	-.06	.01	-.01	.0007*	-.22**
	(.07)	(.05)	(.05)	(.0003)	(.02)
3-year averages, interwar	-.23	-.28	-.17	.0015*	.05
	(.14)	(.16)	(.15)	(.0006)	(.07)

Default Sample: annual data 1850-1912 for 18 countries (Argentina, Australia, Brazil, Canada, Chile, Denmark, Spain, Finland, France, Great Britain, Germany, India, Italy, Japan, Netherlands, Norway, Sweden, and USA). OLS estimation with country- and time-specific fixed effects. Standard errors in parentheses; coefficients significantly different from zero at .05 (.01) marked by one (two) asterisk(s). Series on GDP, duties and imports taken from Mitchell (1993, 200sa, 2003b).

While protectionism has not been counter-cyclic since WW2, it was probably counter-cyclic before WW1. The evidence of a switch in the cyclicality of protectionism is more mixed than one would expect; it appears strong in the literature, but weak in the statistical results of Table 4. Further exploration of this seems mostly a question for economic historians, given the data issues. But for the rest of this paper, I'm going to proceed on the assumption that protectionism was counter-cyclic before WW1. I do this primarily because of the literature, with an appropriate caveat because of the statistical evidence I've presented.

4. Why?

Protectionism has not been counter-cyclic since WW2, but was counter-cyclic before WW1. Why the switch? I begin by reviewing theories developed to explain the purported counter-cyclicality of protectionism. It is best to understand *why* protectionism might be (counter-) cyclic, before investigating *whether* and *how* the intensity of cyclicality of protectionism varies systematically. These theories are testable, since their fundamental drivers vary in observable post-war data across countries and/or time.

Spoiler alert: unfortunately, when I confront them with the data, the theories don't work well.

Why Should Protectionism Be Counter-Cyclic?

I begin with a brief review of theories that have been advanced to explain the alleged (counter-) cyclicality of protectionism, with an eye towards focusing on testable implications. To quote McKeown (1984, p 219), "For protection to occur during the trough of the business cycle, there must be some relation between the benefits of protection and the time at which it is being given." At least five theories have been proposed; each explicitly links the net benefit from protectionism to the state of the business cycle.

1. To Counter Incentives to Manipulate the Terms of Trade

Bagwell and Staiger (2003) assume, realistically, that fluctuations in trade volume vary systematically with the business cycle. They derive counter-cyclic protectionism from the incentives a country has to improve its terms of trade; these vary over the business cycle along with trade volume. During expansions, trade volume and the gains from trade are high; since the costs of a trade war are also high, protectionism should fall. A natural (if indirect) test of this theory is to comparing the cyclicality of protectionism for large and small countries, since small countries face exogenous terms of trade.

2. To Maintain Budget Balance

Hansen (1990, pp. 528-529) reminds readers that "For most of American history … tariffs were instruments of revenue … Through most of the history of the republic, tariffs and taxes were virtual equivalents… Until the Civil War … the U.S. treasury derived about 90 percent of its revenues from customs duties… the tariff was the leading source of government funds until World War I, when the newly approved federal income tax eclipsed it." To keep the budget balanced (p. 532), "the governing party will raise tariffs when the treasury is in deficit and will lower duties when it is in surplus. When the government depends substantially on a tax, in short, fiscal imperatives will dominate its revision."[24] Budgets can reasonably be assumed to be cyclic, so this seems to be a reasonable argument *prima facie*. However, it is difficult to understand the relevance of this argument in a world of substantive persistent budget imbalances, and/or where much protectionism takes the form of NTBs. The theory can be

indirectly tested, by examining the importance of tariffs in government revenue; if tariffs are of substantial importance, this argument seems more likely to have teeth.[25]

3. As a Second-Best Strategy in a Fixed Exchange Rate Regime

Eichengreen and Irwin (2009, pp 1-2) argue that "the exchange rate regime and economic policies associated with it were key determinants of trade policies of the early 1930s. Countries that remained on the gold standard, keeping their currencies fixed against gold, were more likely to restrict foreign trade." A natural test of this sensible hypothesis is to see if the cyclicality of protectionism varies systematically by exchange rate regime.

4. As a Response to Pressure from Import Competitors

Though it seems intuitive that rent-seeking pressures grow disproportionately during recessions, this process has rarely been modeled rigorously. Cassing et al (1986) relies on regional differences in the composition of immobile production factors. It is challenging for such a theory to explain a switch in the cyclicality of protectionism, since regionalism is sluggish. Still, an indirect test of the theory can be conducted by comparing countries of differing size and/or income. The size of social safety nets is much larger in some countries than in others, and may facilitate freer trade (as suggested by Rodrik); accordingly, I also compare countries with more and less government.

5. As a Result of Search Frictions in the Labor Market

Costinot (2009) provides a theory in which jobs have rents which depend on the level of trade protection. Gallarotti (1985) argues that the reduced profits associated with business cycle downturns reduce entry and thus increase the incentives of incumbents to lobby for protectionism; see also McKeown (1984). Again, it seems natural to check if the size of social safety nets affects the cyclicality of protectionism.

<u>Variation across Countries</u>

The evidence from Section 3 shows that protectionism does not move with the business cycle post-war, at least when all observations are included. But the evidence, especially from the literature, indicates that protectionism was counter-cyclic before WW1. The previous section suggests a number of reasons why protectionism might in theory move with the business cycle. Suppose that the protectionism of countries with fixed exchange rates responds more to the business cycle than that of countries with flexible rates. As more countries fixed their exchange rates before WW1 than after WW2, this theory could potentially explain the shift in the cyclicality of protectionism. The question is: does the protectionism of fixers *actually* respond more to the business cycle? I now test this theory – and the others – using post-war data. In particular, I examine whether the responsiveness of protectionism to the business cycle depends on any of nine quantifiable characteristics of a country: a) size (population); b) the importance of tariffs in government revenues; c) the exchange rate regime; d) income (real GDP per capita); e) the size of the government (in GDP); f) the importance of agriculture (in GDP); g) openness (imports/GDP); h) the international fragmentation of production (value-added/exports); and i) intra-industry trade (the 3-digit Grubel-Lloyd index). These "fundamental"

factors are suggested by the theoretical literature reviewed above. Since they vary between pre-WW1 and post-WW2, they have the potential to explain the changed cyclicality of protectionism.[26]

I begin in Figures 6-8 with a graphical search for the importance of fundamentals on the cyclicality of protectionism. Each figure provides nine scatter-plots of protectionism against the business cycle. I consider three measures of protectionism on the y-axis: a) the number of WTO disputes in the top row, b) trade freedom in the middle, and c) the applied weighted tariff rate in the bottom row. Throughout, I measure the business cycle (x-axis) as log real GDP de-trended with the HP-filter. In each figure, there are three versions of each scatter-plot, one for each of three different fundamentals (in columns) used to split the data. Consider the top-left graph in Figure 6; this scatters WTO disputes against HP-filtered real GDP. Two types of countries are shown: small countries with populations of less than a million (marked by x), and G-20 countries (marked by ◦).[27] The relationship between WTO disputes and the business cycle is similar for small and large countries, as shown by the fitted regressions lines for the two samples which are essentially parallel (and indeed are barely distinguishable). The effect of the business cycle on trade freedom is also similar for small and large countries, as shown in the graph immediately below; ditto the effect on the tariff, as shown at the bottom. In the middle column of Figure 6, the sample is split by a different fundamental, the importance of tariff revenues in general government revenues. I divide the data into approximate quartiles, throwing out the middle quartiles. In particular, I compare the (country x year) observations where tariffs are less than 4% of government revenue (marked by x) with observations where tariffs revenues count for more than quarter of government revenue (marked by ◦). In practice, the protectionism of countries where the tariff is a relatively unimportant source of revenue seems to respond to the business cycle just the same as when tariffs are an important source of revenue; the regression lines are close to parallel. Finally, to the right the sample is split using the Reinhart-Rogoff exchange rate regime classification; observations for floating exchange rates (marked by x) are spread similarly to those for fixers (marked by ◦).[28] It is easy to summarize the message from Figure 6: countries with radically different sizes, schemes for government revenue, and exchange rate regimes all seem to have protectionism that responds similarly to business cycles.

Figure 7 is an analogue to Figure 6, but splits the data in three different ways. To the left, I compare low-income countries (annual real GDP per capita less than $1005) with high-income countries (those with annual real GDP per capita of greater than $12,275); in the middle column I compare countries with the lowest quartile of government consumption (relative to GDP) to those with the largest governments; to the right I compare countries where agriculture accounts for radically different fractions of the economy.[29] Figure 8 is again analogous, but compares: open and closed economies; countries with more (as opposed to less) production fragmentation; and countries with more/less intra-industry trade. I measure production fragmentation via the ratio of value-added to exports, and the extent of intra-industry trade with the 3-digit Grubel-Lloyd index.

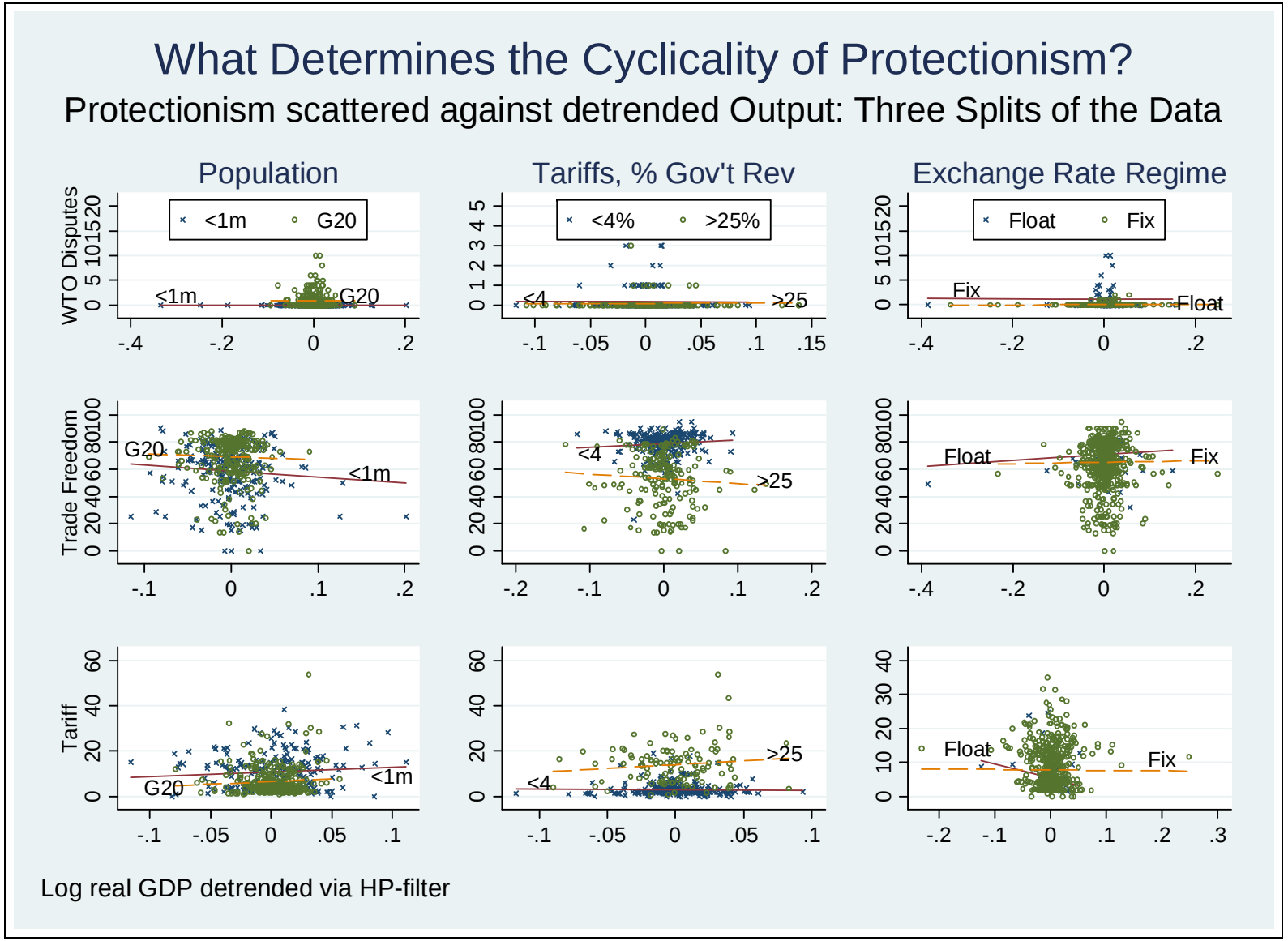

What Determines the Cyclicality of Protectionism?
Protectionism scattered against detrended Output: Three Splits of the Data
Population
Tariffs, % Gov't Rev
Exchange Rate Regime
WTO Disputes
<1m
G20
≤1m
G20
<4%
>25%
<4
>25
Float
Fix
Fix
Float
Trade Freedom
G20
<1m
<4
>25
Float
Fix
Tariff
G20
<1m
<4
>25
Float
Fix
Log real GDP detrended via HP-filter

Figure 6

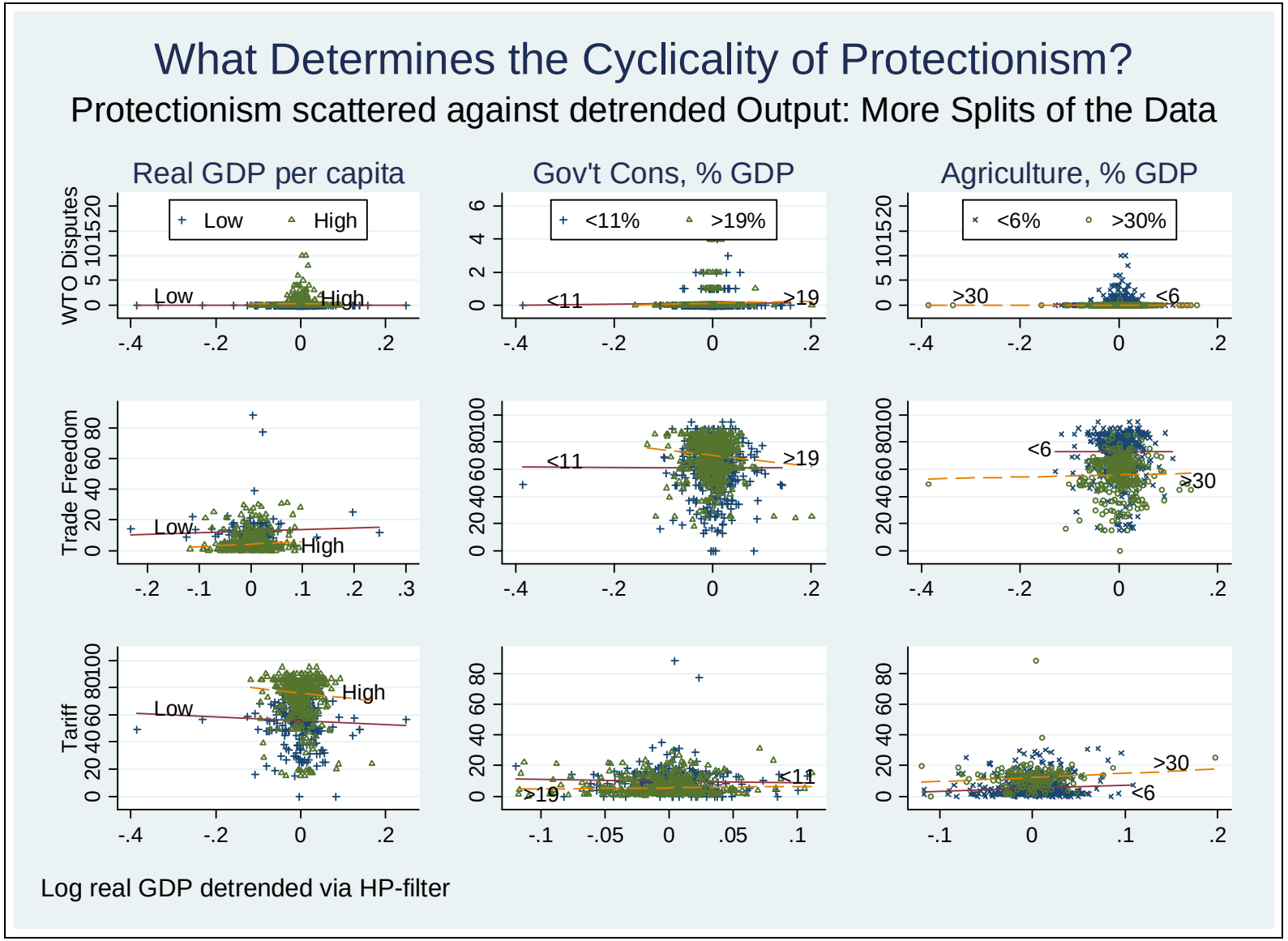

What Determines the Cyclicality of Protectionism?
Protectionism scattered against detrended Output: More Splits of the Data
Real GDP per capita
Gov't Cons, % GDP
Agriculture, % GDP
WTO Disputes
Low
High
<11%
>19%
<6%
>30%
Trade Freedom
Tariff
<11
>19
<6
>30
Log real GDP detrended via HP-filter

Figure 7

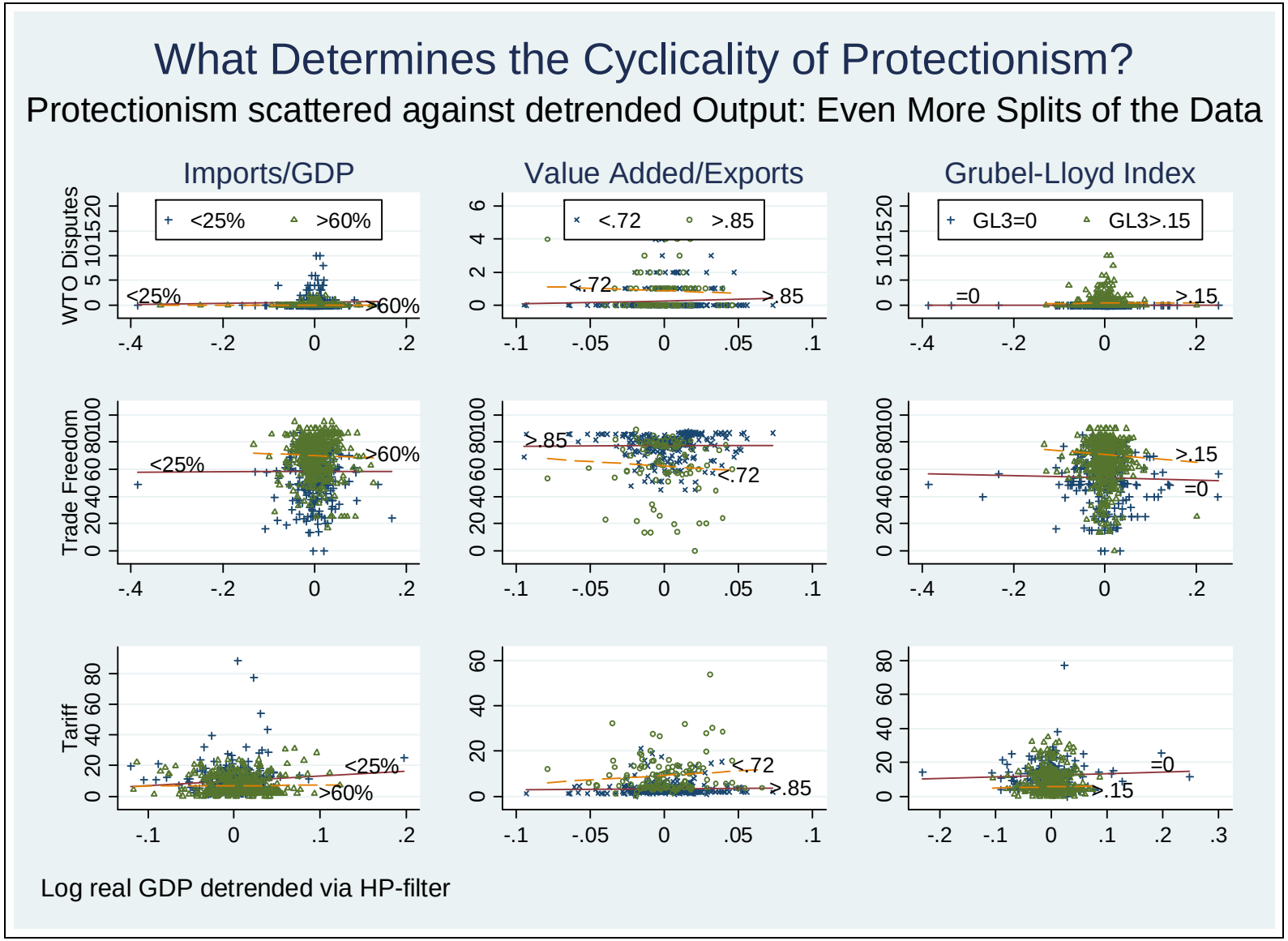

What Determines the Cyclicality of Protectionism?
Protectionism scattered against detrended Output: Even More Splits of the Data
Imports/GDP
Value Added/Exports
Grubel-Lloyd Index
WTO Disputes
Trade Freedom
Tariff
<25%
>60%
<.72
>.85
GL3=0
GL3>.15
=0
>.15
Log real GDP detrended via HP-filter

Figure 8

Figures 6 through 8 show that the cyclicality of protectionism is much the same for countries with very different features. Countries with, for instance, more intra-industry trade have protectionism that responds much the same to the business cycle as countries with little intra-industry trade. None of the nine factors I consider seems to matter much in practice; the cyclicality of protectionism does not depend strongly on income, government size, agricultural sector, openness, or product fragmentation.

A more rigorous analogue to the evidence of Figures 6-8 is presented in Table 5. I estimate:

$$Protection_{it} = \{\alpha_i\} + \{\beta_t\} + \gamma BC_{it} + \delta DFund_{it}BC_{it} + \varepsilon_{it} \qquad (1')$$

where $DFund_{it} = 0$ for the lowest quartile of the univariate distribution of a fundamental variable $Fund_{it}$, is missing for the middle two quartiles, and =1 for the highest quartile. That is, it is a dummy variable that allows one to compare the effect of business cycles on protectionism for e.g., small (lowest quartile of population) as opposed to large (highest quartile) countries. I use the same nine fundamentals as in Figures 6-8, and similarly compare the top and bottom quartiles (of e.g., population, the importance of tariffs in government revenue, …).[30] I estimate equation (1') for each fundamental and measure of protectionism, and tabulate p-values in Table 5 for the null hypothesis Ho: $\gamma=\delta=0$. A high value in Table 5 is consistent with the null, implying that the cyclic nature of protectionism does not depend on e.g., country size.[31]

Table 5: Does the Cyclicality of Protectionism Depend on Observable Fundamentals?

	WTO Disputes	Trade Freedom	Applied Weighted Tariff
Population	.96	.49	.12
Tariff, % Government Revenue	.97	.33	.34
Exchange Rate Regime	.97	.78	.41
Real GDP per capita	.96	.56	.17
Government Consumption (% GDP)	.63	.08	.35
Agriculture (% GDP)	.89	.98	.04*
Imports (% GDP)	.93	.98	.17
Value Added (% Exports)	.71	.54	.15
Grubel-Lloyd Index	.96	.42	.66

Each cell is a p-value for the null hypothesis H_0: $\gamma=\delta=0$ from a separate regression (1') of a measure of protectionism (in columns) on log real GDP, de-trended with HP filter, split by fundamental (in rows). OLS estimation with country- and time-specific fixed effects.

The results of Table 5 are consistent with the visual impression that one gets from Figures 6-8: the cyclic nature of protectionism just does not depend on national fundamentals. Only one of the twenty-seven p-values rejects the null hypothesis at the .05 significance level.[32]

To summarize: I have been unable to find measurable dimensions upon which the cyclicality of protectionism depends.

Does the GATT/WTO Play a Role?

Any examination of the character of protection necessarily involves the GATT/WTO. The institution is of special interest in my context since it has only existed since WW2, approximately when protectionism lost its cyclicality. It seems natural to suspect that the existence of a multilateral institution dedicated to liberalizing trade and helping it flow as freely as possible might also affect the cyclicality of protectionism.[33] Of course the GATT/WTO may be a toothless organization; Bagwell and Staiger (2003) argue that the GATT/WTO has no external enforcement mechanism, so any agreement under the GATT/WTO must be self-enforcing. On the other hand, some have suggested that the GATT/WTO might, by its very existence, exercise a liberalizing effect on a country's protectionism, independent of its membership status.[34]

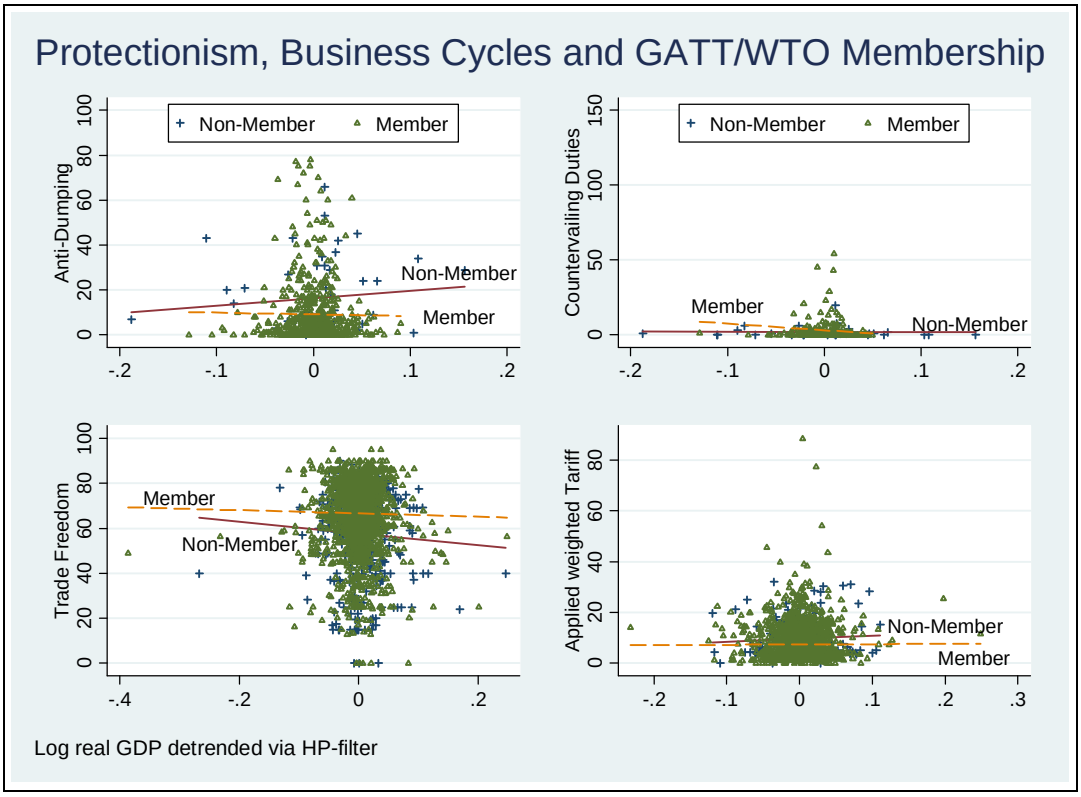


Figure 9

I have no data on a postwar GATT/WTO-free post-war world, so it is impossible to test for any effect that stems from the very existence of the GATT/WTO. But one can test the importance of GATT/WTO membership on the cyclicality of protectionism, since membership varies by country and time; I do so in Figure 9. In particular, I scatter four memberships of protectionism (anti-dumping cases, countervailing duties, trade freedom, and the applied weighted tariff) against the business cycle (HP-filtered GDP). In each case, I split the data by membership (or its absence) in the GATT/WTO.[35,36] Strikingly, membership seems to have little discernible effect on the responsiveness of protectionism to the business cycle; the statistical analogues deliver the same message. That is, the protectionist policies of members of the GATT/WTO respond to the business cycle in much the same way as the protectionism of outsiders. This does not prove that the GATT/WTO is irrelevant for the cyclicality of protectionism, but it is certainly consistent with that hypothesis.

5. More of Us? The Dismal Science on a Dismal Policy

The protectionism of GATT/WTO members responds to the business cycle similarly to that of non-members; this makes it implausible that the creation of the GATT/WTO changed the character of protectionism after WW2. Indeed, I have found no support for any rationalization; the protectionism of large and small countries responds much the same to the business cycle, as does that of rich and poor countries. But there must been *some* explanation (or set of explanations) for the changed character of protectionism. In this section, I speculate that the rise of modern economics is a big part of the explanation.

There are now more economists (and free-trade advocates like *The Economist*) in circulation than ever before. A deeper understanding of the dangers of protectionism could, in principle, be responsible for the fact that protectionism no longer responds to the business cycle. Let me be emphatic: I do not test this idea directly, and I only arrive at this conclusion tentatively, after having eliminated other, testable, hypotheses. My "diagnosis of exclusion" is reached by a process of elimination, without direct evidence. Still, there are a number of reasons to think my hypothesis is plausible.

<u>Bottom Up: Systematic Random Surveys of Economists</u>

There is little doubt that the support from economists for free trade is pervasive, certainly stronger than that of the general public. The strong consensus of economists is apparent in the survey results of Table 6. Hundreds of economists over the last thirty-five years have been asked their opinion of the statement "Tariffs and Import Quotas Usually Reduce General Economic Welfare" (or some variation). As a profession, we strongly agree. (The most notable exceptions to the rule were French economists surveyed in the early 1980s; even in that case, two-thirds agreed that artificial trade barriers tended to reduce welfare.)

Table 6: Survey Views of Economists on "Tariffs and Import Quotas Usually Reduce General Economic Welfare"[1]

Survey Year	Generally Agree	Agree with provisions (%)	Sample	Reference
1976	81%	16%	AEA	Kearl et al (1979)
1981/82	79%	16%	AEA	Frey et al (1984)
1981/82	27%	44%	France	Frey et al (1984)
1981/82	70%	24%	Germany	Frey et al (1984)
1981/82	44%	42%	Austria	Frey et al (1984)
1981/82	47%	40%	Switzerland	Frey et al (1984)
1990	71%	21%	USA	Alston et al (1992)
2000	73%	20%	AEA	Fuller and Geide-Stevenson (2003)
2000	87% (58% strongly)	n/a	AEA	Whaples and Heckelman (2005)
2000	96% (75% strongly)	n/a	Public Choice	Whaples and Heckelman (2005)
2005	88%	n/a	AEA	Whaples (2006)
2007	83% (37% strongly)	n/a	AEA	Whaples (2009)
2012	85% (29% strongly)	n/a	IGM Experts	IGM Forum Poll Results (2012)

There is little doubt that these numbers are high, both absolutely and compared with those of the general public. They are also high compared to the consensus of economists on almost all other issues.[37,38]

Top Down

The consensus of the economics profession is not simply widespread: it is especially strongly held at the top of the profession. Consider just a few statements by economists who are both academically distinguished and known for their policy interests:

- Alan Blinder: "For more than two centuries economists have steadfastly promoted free trade among nations as the best trade policy."[39]
- Paul Krugman: "If there were an Economist's Creed, it would surely contain the affirmations 'I understand the Principle of Comparative Advantage' and 'I advocate Free Trade'."[40]
- N. Gregory Mankiw: "Few propositions command as much consensus among professional economists as that open world trade increases economic growth and raises living standards."[41]

A broader statement comes from a recent article in *The Atlantic* "Where All Economists Agree" which begins (emphasis *not* added):

[1] The statement was "Tariffs and import quotas reduce general economic welfare" (without "usually") for 1979 and 1982. For the 2005 and 2007 surveys, the statement is "The U.S. should eliminate remaining tariffs and other barriers to trade."

> "In reading the sometimes polarized debate in the economics blogosphere, the discipline often appears to suffer from an excess of disagreement and uncertainty. But this is more about the incentives economists face when writing and speaking in the public sphere than the actual state of knowledge in the field. In reality economists agree about a lot of things, and in many cases they do so with a high degree of certainty. This fact is on display frequently at the IGM Economic Experts Panel from the University of Chicago. This is a panel of 41 of the world's top economists who are offered statements about economic policy to which they can indicate whether they agree, disagree, or are uncertain. In addition they rate the certainty of their answer on a scale of 1 to 10, which allows the answers to be weighted. Over the past few months there have been several issues where this ideologically diverse group of economists have shown resounding unanimity. Some of these may surprise people, as it's fairly obvious that public opinion would not side with economists with the same amount of unanimity. So here are a few things economists strongly agree on.
> **The benefits of free trade and NAFTA far outweigh the costs.**
> None of the economists surveyed disagreed that the gains to freer trade are much larger than any costs. And only two economists even said that the answer is uncertain. MIT's Richard Schmalensee declared 'If that's not right, almost all of economics is wrong.'
> Economists have emphasized the benefits of free trade for a long time, reflecting the field's belief in the importance of specialization, comparative advantage, and gains from trade. Indeed, these results are similar to other surveys that show economists strongly supporting free trade."[42]

Where the Brainwashing Begins

The intellectual case against protectionism exists in all standard principles textbooks (and continues through more advanced texts). For instance, chapter 24 of the first edition of Samuelson's *Economics* included sections entitled "Grossly Fallacious Arguments for Tariff" and "Some Less Obvious Fallacies" and later editions did not change the tenor much. Later texts by McConnell and Mankiw have much the same drift. Indeed, this is a long tradition; in his *Principles of Economics*, Marshall's first demonstration of the genius of Adam Smith is the latter's role in developing the case for free trade.[43]

What do most principles students learn about protectionism? First, the microeconomic costs of protectionism in practice typically outweigh any potential benefits (few believe that macroeconomic benefits, if any, are large). Second, a protectionist policy is almost never the most appropriate tool to deal with a distortion, externality, or other imperfection. For instance, when it comes to handling aggregate demand, monetary and/or fiscal policy are both more effective tools than protectionism and come without the microeconomic distortions. Third, domestic protectionism invites foreign retaliation. These lessons have been well-digested and can be easily communicated, particularly during recessions; it is hard to find a serious policy-maker who urged protectionism as a response to the Great Recession.

Preaching the Gospel

The Economist was founded as part of the effort to repeal the "corn laws" (agricultural protectionism finally abolished in Victorian England), and remains one of the most outspoken advocates of free trade. It is circulated around the world to a sophisticated, rich and influential readership of around 1.5 million. *The Economist* is part of a vast mechanism which brings the free-trade message from the profession into the public-policy space.

The Economist is by no means alone in spreading the word. Most respectable think-tanks – a key battleground in the marketplace for policy ideas – advocate free trade. The Peterson Institute for International Economics publishes work like "What Should Leaders Do to Stop the Spread of Protectionism?"[44] The Brooking Institution, Heritage Foundation and the American Enterprise Institute share few positions in common, but a dislike for protectionism appears to be one. They share this with the Adam Smith Institute, Bruegel, the Fraser Institute, the CD Howe Institute, and a host of others spread across the world.

Of late, economists have begun to market their ideas directly to policy-makers and the public without intermediaries. In such outlets as *VOX* and *Project Syndicate*, it is hard to find a case made for the merits of protectionism, but easy to find warnings about its dangers. The commitment of the economics profession to counter the threat of counter-cyclic protectionism is particularly clear in *Global Trade Alert*. This venture was created (in association with CEPR) during the Great Recession and is freely disseminated on the internet.[45] It describes itself using the following language:

> "Global Trade Alert provides real-time information on state measures taken during the current global downturn that are likely to affect foreign commerce… ***Motivation:*** As many economies witness the sharpest falls in their exports in decades and with unemployment rising to levels not seen since the early 1980s, fears are growing that governments may be tempted to renege on this pledge. Even though the world has not seen a return to the across-the-board tariff increases of the early 1930s, today governments have resorted to massive stimulus packages, bailouts, and subsidies, many of which include nationalistic provisions that effectively harm trading partners' exporters, investors, and workers."[46]

It is hard to establish definitively whether the perceived dangers of protectionism – and the response to this perception – vary with the business cycle, but they probably do. Figure 10 provides a tidbit of evidence; it contains time series plots of results for different queries posed to Google's celebrated search engine. The top portrays ' "now is not the time for protectionism" 20xx' where xx runs from 00 through 12. Results vary (counter-) cyclically; they rise by an order of magnitude during the Great Recession (from a steady state of around 100), before returning to normalcy afterwards. Similarly, results in the lower panel show that the query ' "protectionism is a bad idea" 20xx' returns counter-cyclic results.

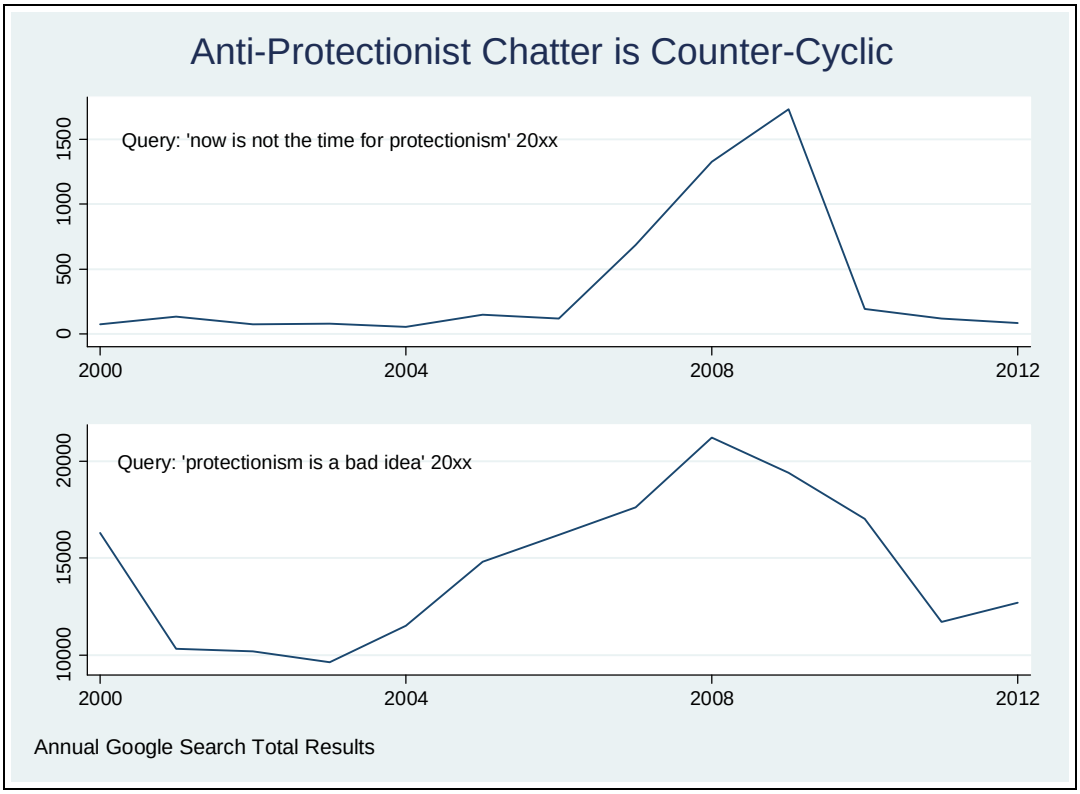


Figure 10

Summary

There is serious, honest disagreement in the economics profession about whether and how to use conventional macroeconomic tools like monetary and/or fiscal policy for counter-cyclic stabilization policy. There is no legitimate analogue for protectionism; essentially no reasonable economist thinks that recessions should be countered by artificially increasing barriers to trade. This consensus provides remarkably strong guidance for policy-makers and an intellectual bulwark against populism, particularly during bad macroeconomic times. My thesis in this paper is that this consensus is, at least in part, responsible for the fact that protectionism is no longer counter-cyclic.

6. Academic Scribbling

The main goal of this paper is to show that protectionism has not been counter-cyclic since the Second World War. This result is robust; I use over a dozen measures of protectionism, six of the business cycle, and a variety of controls, in an annual postwar panel of data spanning more than 180 countries over forty years. This result seems natural; it is exemplified by the absence of any dramatic outbreak of protection associated with the Great Recession of 2009. But this result is also striking; as a stylized fact, acyclic protectionism is grossly inconsistent with the literature. Any of the theoretical

studies of the determinants of protectionism that relies on this false generalization (five are sketched above) is thus of limited interest. If the economics profession wants to understand the determinants of protectionism, it should do so from a solid empirical footing.

I use a historical panel going back 140 years to show that protectionism was probably counter-cyclic earlier, though it is hard to be definitive because there is little quality data of relevance before WW2. I have been less successful in explaining *why* protectionism is no longer counter-cyclic; there is little support for any hypothesis that can be quantified. In contrast to more recent times, before WW1 tariffs contributed greatly to the national treasury, there was no GATT, and the gold standard ruled. Post-war data indicate that protectionist policies of countries with differing fiscal situations react similarly to business cycles, as do those of countries inside/outside the GATT/WTO, those with fixed/floating exchange rates, small/large countries, open/closed countries, and countries with little/much intra-industry trade.

It is hard to find an intellectually serious case for protectionism these days, cyclic or otherwise. While there is no doubt that special cases exist, they remain matters of intellectual curiosity rather than serious policy initiatives. In this sense, the consensus of modern economists is decisive. Nevertheless, the fact that economists have a strong consensus against protectionism does not mean that this consensus is responsible for the declining cyclicality of protectionism. I am acutely aware that I have provided no direct evidence linking economic thought to policy. Still, it seems natural to link victory in the battle of ideas to actual behavior in the policy forum.

I tentatively conclude that the switch in the cyclicality of protectionism is a triumph of modern economics. After all, there is considerable and strong consensus among economists that protectionism is generally bad for welfare. And there is no doubt that economists are aware and actively involved in combating counter-cyclic protectionism; this was especially visible during the Great Recession, which saw the successful launch of *Global Trade Alert* in June 2009. If – and I realize that it's a big if – the efforts of the economic profession are even part of the reason that protectionism is no longer counter-cyclic, we deserve a collective pat on the back. But in that case the profession should also consider setting its sights higher. If economists have helped reduce the cyclicality of protectionism, then perhaps we should focus on simply reducing protectionism.

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Appendix: Literature Review

There seems to be universal agreement that protectionism is counter-cyclic. The abstract of Bagwell and Staiger (2003) begins "Empirical studies have repeatedly documented the countercyclical nature of trade barriers"; for support, they provide citations of eight papers which "all conclude that the average level of protection tends to rise in recessions and fall in booms." Rodrik (1995, p. 1486) states "That the average tariff level tends to rise in recessions is a robust finding in the literature…" Costinot (2009, p. 1011) states "One very robust finding of the empirical literature on trade protection is the positive impact of unemployment on the level of trade barriers. The same pattern can be observed across industries, among countries, and over time …" McKeown (1984, p. 215) states: "That tariff levels and economic growth rates tend to move in opposite directions is a venerable piece of conventional wisdom. As early as 1879, Gustav Schmoller, the famous economist of the German historical school, noted that, 'The times of boom, of increasing exports, of new openings of overseas markets, are the natural free trade epochs, while the reverse is true in times of foreign slumps, of depressions, of crisis.'"[47]

Most of the literature that studies the determinants and incidence of protectionism is *cross-sectional* in nature.[48] That is, it addresses questions like "Why do certain industries/areas/interest groups receive protectionism, while others do not?"[49] By way of contrast, the focus of this paper is on the *time-series* variation of protectionism; I ask "How does protectionism respond to business cycle fluctuations?"

The literature provides convincing time-series evidence that protectionism was counter-cyclic before the Second World War. Hansen (1990) uses American pre-WW2 data and shows that (p. 539) "During economic recessions, the federal government posted taxes [tariffs] 4.69 percentage points higher than it did during expansions." Gallarotti (1985) supports her theory of counter-cyclic protectionism using pre-WW1 data from Germany, the UK and the USA; McKeown (1984) uses similar data to support his closely-related theory.

Over longer periods of time, the record is less clear. Magee and Young (1987) find that tariffs rise with unemployment using standard regression techniques and data from twentieth-century American presidential administrations. Bohara and Kaempfer (1991a) use American data from 1890 to 1970. They estimated a VAR that includes: a) the real trade balance; b) the log of unemployment; c) the growth of real GNP; d) inflation; and e) the growth rate of the average tariff on dutiable imports. They conclude that there is significant Granger causality to tariff levels from all variables except the trade balance. However, their impulse response functions have signs that are "sensible" in the very short run (meaning that higher unemployment and lower GDP are associated with higher tariffs), but are reversed within a few years. Bohara and Kaempfer (1991b) use comparable data but with a 3-variable VAR, excluding the trade balance and inflation. In this context they find no significant effect of unemployment on tariffs, and they also find that higher growth is associated with *higher* tariffs.

A handful of papers use post-war time-series data to link protectionism to the state of the macro-economy. Takacs (1981) uses annual American data between 1949-1979 on instances when the

USITC is petitioned for a temporary tariff, quota or other kind of protection. She finds that the use of the "escape clause" is not correlated with cyclic (or trend) measures of economic activity. Feinberg (2005) finds weak evidence of cyclicality in American anti-dumping petitions, especially outside steel. Grilli (1988) uses 18 annual observations for both the EC and the USA between 1969 and 1986, and two measures of protectionism, the log of import penetration and petitions for anti-dumping, subsidy-countervailing and safeguard actions. He is able to link these to the log real exchange rate and the growth in industrial production (for the US) or the change in unemployment (for the EC). Grilli uses 2SLS with a Cochrane-Orcutt procedure, a time trend and dummy variables; he finds evidence of counter-cyclic movement in non-tariff barriers. This is a heavily parameterized approach, long on assumptions and short on sensitivity analysis and data.

Two other recent papers are especially worthy of note; both use post-war time-series data. Knetter and Prusa (2003) find a linkage between anti-dumping filings and macroeconomic factors. They use multilateral and bilateral data for Australia, Canada, the EU and the USA between 1980 and 1998. Their particular focus is the real exchange rate; they find that appreciation increases filings significantly.[50] They also find that the effect of the three-year growth in real GDP is insignificant in multilateral data, but significantly negative in bilateral data. Bown and Crowley (2012) use data for five major economies to estimate the effects of macroeconomic fluctuations on protectionism. They exploit a recent quarterly bilateral data set that is dis-aggregated by product. While their main focus is on the responsiveness of temporary trade barriers (including anti-dumping cases) to *foreign* growth, they find evidence that protection is counter-cyclic, especially for the United States and Australia. I take the latter two findings seriously and accordingly examine anti-dumping and other temporary trade barriers.[51] A brief summary of the major differences between these papers follows.

Issue	**Rose**	**Knetter-Prusa**	**Bown-Crowley**
Measure of Protectionism	Thirteen (incl. KP and BC)	One: AD	One: AD+Safe+CVDs
Time Span	1978-2010	1980-1998	1988-2010
Country Span	>100	4	5
Frequency	Annual	Annual	Quarterly
Bilateral/Multilateral	Multilateral	Both	Bilateral
Estimator	LS	Negative Binomial	Negative Binomial
Lags	0 and 1-yr	3-yr	1-yr
Bilateral Effects	Fixed (Table A9)	Random	Fixed
Multilateral Results	Weak	Weak	n/a
Business Cycle Measure	5 of GDP, unemployment	GDP growth	Unemployment
Focus of Paper	Counter-Cyclicality	Exchange Rate	For. GDP, Great Rec'n

In passing, I note that many authors simply ignore the cyclicality of protectionism altogether. In Goode's (2007) *Dictionary of Trade Policy Terms* one looks in vain for business, cycle, contraction, recession, and unemployment; ditto the *Handbook on International Trade Policy*.[52]

Succinctly, the evidence of counter-cyclic postwar protectionism is less than overwhelming.

Appendix Table A1: Protectionism and Business Cycles, Robustness: No Time Effects

Business Cycle De-trending:	Baxter-King	Christiano-Fitzgerald	Hodrick-Prescott	First-Differencing	Linear in Time
Anti-Dumping Cases Initiated, 1978-	-13.4 (13.1)	5.3 (6.1)	-1.2 (10.7)	-.06 (.05)	3.7 (4.1)
Countervailing Duties, 1977-	-21.8 (25.1)	-11.0 (11.9)	-17.8 (20.2)	-.09 (.05)	-1.0 (3.0)
Safeguards, 1995-	.1 (.3)	.4 (.4)	-.1 (.3)	.001 (.001)	-.01 (.09)
WTO Disputes Initiated, 1995-	-1.2 (1.6)	1.5 (1.4)	.0 (1.1)	.02 (.02)	.9 (.5)
Mean Weighted Applied Tariff, 1988-	-16.0 (17.5)	-2.8 (10.3)	-11.7 (12.5)	-.02 (.02)	-2.6 (3.2)
Index of Trade Freedom, 1995-	8.8 (7.8)	-16.5 (6.6)	-12.9 (6.8)	-.03 (.05)	13.3 (5.3)

Each cell is a coefficient from a separate regression of a measure of protectionism (left-hand column) on deviation of log real GDP from trend. Robust standard errors in parentheses; coefficients significantly different from zero at .05 (.01) marked by one (two) asterisk(s). OLS estimation with country-specific fixed effects.

Appendix Table A2: Protectionism and Business Cycles, Robustness: No Rich Countries

Business Cycle De-trending:	Baxter-King	Christiano-Fitzgerald	Hodrick-Prescott	First-Differencing	Linear in Time
Anti-Dumping Cases Initiated, 1978-	18.6 (27.6)	4.1 (15.6)	22.2 (22.0)	.1 (.1)	14.1 (14.4)
Countervailing Duties, 1977-	-1.2 (5.8)	.1 (6.8)	.1 (5.7)	-.03 (.02)	2.0 (2.0)
Safeguards, 1995-	.3 (.4)	.6 (.5)	.3 (.4)	.002 (.002)	-.1 (.1)
WTO Disputes Initiated, 1995-	.3 (2.1)	1.4 (1.6)	-.1 (1.7)	.01 (.01)	.5 (.8)
Mean Weighted Applied Tariff, 1988-	9.7 (7.4)	6.6 (6.5)	7.3 (6.4)	.06 (.04)	-2.6 (3.4)
Index of Trade Freedom, 1995-	-2.8 (9.2)	-4.5 (8.3)	-5.9 (8.6)	-.01 (.05)	3.9 (4.2)

Each cell is a coefficient from a separate regression of a measure of protectionism (left-hand column) on deviation of log real GDP from trend. Robust standard errors in parentheses; coefficients significantly different from zero at .05 (.01) marked by one (two) asterisk(s). OLS estimation with country- and time-specific fixed effects. Only countries with real (PPP) GDP per capita < $12,275.

Appendix Table A3: Protectionism and Business Cycles, Robustness: Only Large Countries

Business Cycle De-trending:	Baxter-King	Christiano-Fitzgerald	Hodrick-Prescott	First-Differencing	Linear in Time
Anti-Dumping Cases Initiated, 1978-	18.8 (15.4)	16.6 (16.0)	29.5* (13.6)	-.0 (.1)	-.3 (13.9)
Countervailing Duties, 1977-	-5.0 (3.7)	-16.4 (7.9)	-3.6 (3.5)	.03 (.07)	-5.1 (5.4)
Safeguards, 1995-	2.1 (1.5)	2.1 (1.3)	1.9 (1.3)	.02 (.02)	.4 (.5)
WTO Disputes Initiated, 1995-	-5.4 (6.3)	.5 (3.0)	-1.9 (3.6)	.04 (.05)	-.2 (1.0)
Mean Weighted Applied Tariff, 1988-	19.2 (22.6)	4.5 (19.8)	7.0 (18.6)	-.0 (.1)	-10.6 (6.7)
Index of Trade Freedom, 1995-	-2.0 (16.2)	2.3 (13.9)	2.2 (14.9)	.1 (.1)	20.3 (5.4)

Each cell is a coefficient from a separate regression of a measure of protectionism (left-hand column) on deviation of log real GDP from trend. Robust standard errors in parentheses; coefficients significantly different from zero at .05 (.01) marked by one (two) asterisk(s). OLS estimation with country- and time-specific fixed effects. Only countries with population >25 million.

Appendix Table A4: Protectionism and Business Cycles, Robustness: Sample Ends 2008

Business Cycle De-trending:	Baxter-King	Christiano-Fitzgerald	Hodrick-Prescott	First-Differencing	Linear in Time
Anti-Dumping Cases Initiated, 1978-	17.0 (18.6)	9.5 (17.9)	20.2 (17.4)	-.0 (.1)	-2.5 (5.0)
Countervailing Duties, 1977-	-5.3 (21.6)	-13.6 (20.0)	-1.7 (19.8)	.0 (.1)	-9.8 (9.0)
Safeguards, 1995-	.2 (.4)	.3 (.3)	.1 (.3)	.000 (.002)	.0 (.1)
WTO Disputes Initiated, 1995-	-.2 (2.6)	1.3 (2.4)	.2 (2.4)	.02 (.02)	-.2 (.7)
Mean Weighted Applied Tariff, 1988-	-6.4 (6.1)	-4.7 (5.4)	-6.9 (5.4)	-.01 (.03)	-4.1** (1.5)
Index of Trade Freedom, 1995-	-4.9 (6.5)	-5.4 (6.1)	-6.7 (6.1)	.02 (.04)	2.8 (1.9)

Each cell is a coefficient from a separate regression of a measure of protectionism (left-hand column) on deviation of log real GDP from trend. Robust standard errors in parentheses; coefficients significantly different from zero at .05 (.01) marked by one (two) asterisk(s). OLS estimation with country-specific fixed effects.

Appendix Table A5: Protectionism and Business Cycles, Robustness: Drop Outliers

Business Cycle De-trending:	Baxter-King	Christiano-Fitzgerald	Hodrick-Prescott	First-Differencing	Linear in Time
Anti-Dumping Cases Initiated, 1978-	11.6 (12.4)	12.3 (13.7)	23.6 (11.6)	.04 (.07)	-4.2 (4.6)
Countervailing Duties, 1977-	1.9 (3.4)	-.6 (3.4)	1.1 (3.1)	-.03 (.03)	1.2 (1.8)
Safeguards, 1995-	-.0 (.1)	-.1 (.1)	-.1 (.1)	.000 (.001)	-.01 (.03)
WTO Disputes Initiated, 1995-	.4 (1.8)	1.9 (1.0)	1.3 (1.1)	.01 (.01)	.6 (.5)
Mean Weighted Applied Tariff, 1988-	10.6* (5.2)	7.2 (3.8)	4.9 (3.8)	-.01 (.02)	-2.2 (1.2)
Index of Trade Freedom, 1995-	-7.0 (6.1)	-7.9 (5.5)	-8.3 (5.3)	-.00 (.04)	7.0* (3.5)

Each cell is a coefficient from a separate regression of a measure of protectionism (left-hand column) on deviation of log real GDP from trend. Robust standard errors in parentheses; coefficients significantly different from zero at .05 (.01) marked by one (two) asterisk(s). OLS estimation with country- and time-specific fixed effects. Without observations (from Table 1) whose residuals are more than 2.5 standard deviations from zero.

Appendix Table A6: Protectionism and Business Cycles, Robustness: Different Estimators

Business Cycle De-trending:	Baxter-King	Christiano-Fitzgerald	Hodrick-Prescott	First-Differencing	Linear in Time
Poisson: Anti-Dumping Cases Initiated, 1978-	1.8* (.9)	1.2 (1.0)	2.5** (.9)	.01 (.01)	1.1 (1.0)
Poisson: Countervailing Duties, 1977-	.1 (1.5)	-1.3 (1.3)	.4 (1.3)	-.05** (.02)	-.4 (2.3)
Poisson: Safeguards, 1995-	12.0 (7.3)	10.9* (4.8)	9.8* (4.7)	.06* (.03)	1.9 (1.5)
Poisson: WTO Disputes Initiated, 1995-	-.7 (3.5)	4.3 (2.9)	-.2 (2.8)	.04 (.03)	.0 (.8)
Tobit: Mean Weighted Applied Tariff, 1988-	-8.6 (6.8)	2.5 (1.8)	-7.7 (5.7)	-.01 (.03)	-3.7** (1.3)
Tobit: Index of Trade Freedom, 1995-	-7.8 (8.0)	-6.8* (3.1)	-7.9 (7.1)	.02 (.04)	6.8** (1.7)

Each cell is a coefficient from a separate regression of a measure of protectionism (left-hand column) on deviation of log real GDP from trend. Robust standard errors in parentheses; coefficients significantly different from zero at .05 (.01) marked by one (two) asterisk(s). Estimation with country- and time-specific fixed effects (random country effects for Tobit).

Appendix Table A7: Protectionism and Business Cycles, Robustness: Unemployment

Regressor:	Unemployment	Lagged Unemployment
Anti-Dumping Cases (TTBD), 1978-	.5* (.2)	.03 (.2)
Countervailing Duties (TTBD), 1977-	-.0 (.2)	-.17 (.15)
Safeguards (TTBD), 1995-	.03** (.01)	.02* (.01)
WTO Disputes Initiated (WTO), 1995-	-.04 (.03)	.01 (.03)
Mean Weighted Applied Tariff (WDI), 1988-	-.03 (.04)	-.01 (.04)
Index of Trade Freedom (IEF), 1995-	.01 (.09)	.01 (.08)

Each cell is a coefficient from a separate regression of a measure of protectionism (left-hand column) on unemployment or its lag. Robust standard errors in parentheses; coefficients significantly different from zero at .05 (.01) marked by one (two) asterisk(s). OLS estimation with country- and time-specific fixed effects; annual data through 2010.

Appendix Table A8: Protectionism and Business Cycles, Robustness: Lagged Output

Business Cycle De-trending, Lag of:	Baxter-King	Christiano-Fitzgerald	Hodrick-Prescott	First-Differencing	Linear in Time
Anti-Dumping Cases Initiated, 1978-	21.0 (13.0)	17.5 (12.0)	29.0* (13.3)	.1 (.1)	-4.5 (9.5)
Countervailing Duties, 1977-	-1.2 (4.6)	-16.1 (8.1)	1.1 (4.5)	.01 (.02)	-6.2 (6.5)
Safeguards, 1995-	.1 (.2)	.1 (.4)	-.0 (.3)	.001 (.002)	.01 (.09)
WTO Disputes Initiated, 1995-	-3.6 (2.7)	-.5 (1.5)	-2.0 (1.9)	.02 (.01)	-.3 (.8)
Mean Weighted Applied Tariff, 1988-	-6.0 (9.9)	-3.8 (6.3)	-7.2 (8.7)	-.04 (.04)	-4.3 (2.9)
Index of Trade Freedom, 1995-	.4 (8.0)	.8 (7.6)	4.4 (8.0)	.09 (.05)	7.1* (3.4)

Each cell is a coefficient from a separate regression of a measure of protectionism (left-hand column) on deviation of log real GDP from trend. Robust standard errors in parentheses; coefficients significantly different from zero at .05 (.01) marked by one (two) asterisk(s). OLS estimation with country- and time-specific fixed effects.

Appendix Table A9: Bilateral Trade Costs and GDP Growth

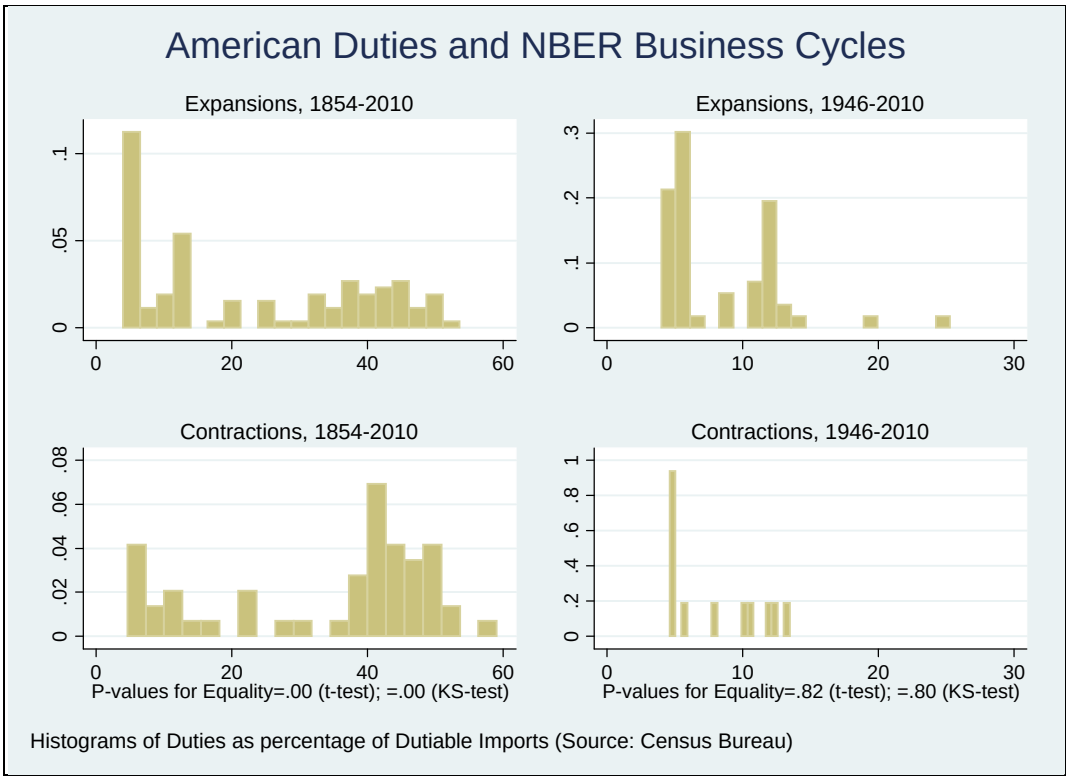
Growth Effect:	-.04 (.05)	-.05 (.07)	.00001 (.00003)	.00010** (.00003)
Regressand	Trade Costs	Trade Costs	Tariffs	Tariffs
Fixed Effects	Dyadic	Country	Dyadic	Country

Coefficient in top row is β from regression of Regressand(ijτ)=β[Growth(iτ)+Growth(iτ)]+Fixed Effects +error. Robust standard error in parentheses; coefficients different from zero at .01 indicated with two asterisks. Each column represents a different panel regression estimated with least squares. Annual data, 1995-2010, for 163 countries in 10,556 dyad, all sectors of trade. Year fixed effects included but not recorded. UN ESCAP trade cost/tariff data (http://www.unescap.org/tid/artnet/trade-costs.asp); PWT 7.1 real GDP data (https://pwt.sas.upenn.edu/php_site/pwt_index.php).

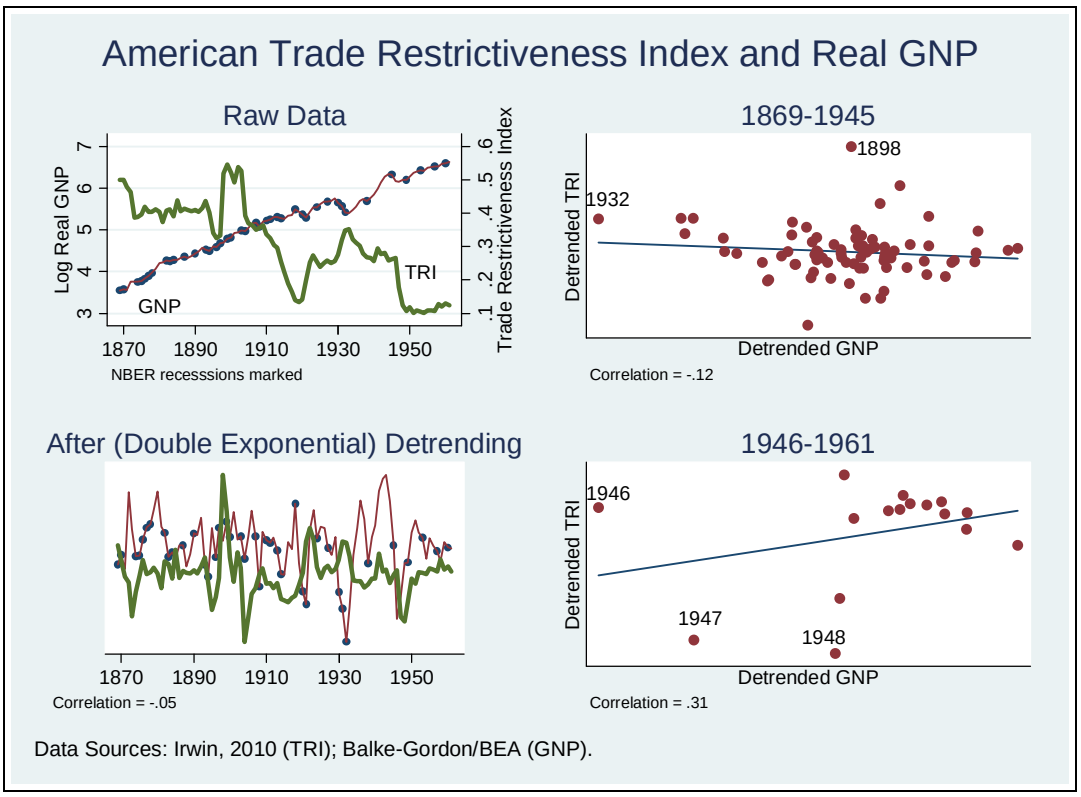
Appendix Table A10: Protectionism and Business Cycles, Interactions with Fundamentals

Fundamental:	Anti-Dumping Cases	Countervail. Duties	Safeguards	WTO Disputes	Mean Wghtd Applied Tariff	Index Trade Freedom
Log population	.30	.98	.68	.84	.00**	.61
Duties (% Gov't Revenue)	.05*	.82	.64	.86	.59	.01**
Exchange Rate Regime	.45	.89	.64	.85	.81	.72
Log real GDP per capita	.35	.91	.93	.93	.00**	.57
Gov't cons'n (% GDP)	.54	.33	.96	.73	.59	.66
Agriculture (% GDP)	.31	.91	.87	.90	.00**	.59
Imports (% GDP)	.52	.90	.97	.95	.76	.11
Value Added (/Exports)	.66	.84	.37	.80	.33	.62
Grubel-Lloyd 3-digit index	.18	.82	.88	.90	.29	.58
GATT/WTO Member	.29	.70	n/a	n/a	.19	.57

Each cell is the p-value for an F-test of the hypothesis H0: $\gamma=\zeta=0$ from separate regression $Protection_{it} = \{\alpha_i\} + \{\beta_t\} + \gamma BC_{it} + \zeta BC*Fund_{it}BC_{it} + \varepsilon_{it}$; measure of protectionism varies by column, and fundamental varies by row. BC is deviation of HP-filtered log real GDP. Tests significantly different from zero at .05 (.01) marked by one (two) asterisk(s). OLS estimation with country- and time-specific fixed effects.



Appendix Figure A1



Appendix Figure A2

Endnotes

[1] Should you really be reading endnotes? They're really not essential; in this paper, I use them to provide extra evidence for suspicious nerds.

[2] The popular press – especially *The Economist* – as well; see, e.g., the Feb 7, 2009 issue of *The Economist* featuring "The Return of Economic Nationalism" on its cover.

[3] Nothing of relevance is changed if I begin the post-war sample in 1946; the tariff: unemployment correlation remains -.44. Two appendix figures provide corroborative evidence.

[4] A referee argues that there might be a sort of tacit collusion among governments, allowing one another to introduce protectionist measures without complaining to the WTO; in this case the measurement error would be cyclic. Hmm … a point that is purely academic (i.e., theoretical and/or speculative without a practical purpose or intention)? A conspiracy theory? (Entertaining as conspiracy theories are, I believe in the lone gunman.)

[5] The World Bank's *Temporary Trade Barriers Database* is freely available online (http://econ.worldbank.org/ttbd/) and was created by the praiseworthy Chad Bown; I restrict the sample to those for which observations are available.

[6] The growth of both GDP and trade are around five standard deviations below their means in 2009, whereas safeguards and countervailing duties are about 1.5 standard deviations above their means, and anti-dumping is a standard deviation *below* its mean.

[7] There are few serious signs of a dramatic increase in protectionism following the great recession. It is interesting to note that rather than being cautiously optimistic, economists seem to be continually fearful of a pending future explosion. For instance, Cadot and Malouche (2012, p1) write "… although the global financial crisis has not triggered, as some feared, an explosion of protectionism measures, we are not out of the woods yet." This watchfulness may help keep protectionism low.

[8] I take no account of potential simultaneity bias; it strikes me as implausible that protectionism causes business cycles for this sample of data. Larch and Lechthaler (2011) show theoretically that various types of protectionism have small effects on output that are often negative (usually because of real exchange rate appreciation resulting from protectionism). Ostry and Rose (1992) use a variety of models to show that the theoretical effects of tariffs on output are ambiguous theoretically and empirically negligible. Irwin (2011, pp 118-120) states "Throughout history, the business cycle has had a greater impact on tariff policy than tariffs have had on the business cycle. When the economy goes into a recession, politicians often respond by raising tariffs… In sum, there are no strong theoretical or empirical grounds for believing that higher average tariffs are the principal cause of business cycle downturns or expansions."

[9] I note in passing that the WTO dispute settlement literature does not focus on business cycles. Bown (2005) models a country's decision to initiate a dispute through the WTO system using data from the first six years of the WTO. Holmes et al (2003) study the use of the dispute settlement system; their goal is to search for indications of bias against small or poor countries; like Bown, it ignores cyclic considerations. Reinhardt (1999) provides more analysis in the same vein. Related work by Bown (2004a) studies the reasons that the dispute settlement system has the effects that it does by inducing fear of retaliation, using a panel of data on import growth and its determinants, treating dispute initiation as exogenous. Bown (2004b) empirically analyzes why countries choose to violate or adhere to GATT rules, using a panel of disaggregated data; protection is determined endogenously, but using microeconomic phenomena.

[10] http://www.heritage.org/index/open-markets

[11] An appendix verifies results with the unemployment data that are available.

[12] I use standard parameter values for my filtering techniques: a smoothing parameter of 6.25 for Hodrick-Prescott (as suggested by e.g., Ravn and Uhlig); and for Christiano-Fitzgerald and Baxter-King bandpass filtering, minimal/maximal periodicities of two/eight years respectively, with a lead-lag length of three years (as suggested by e.g., Baxter and King).

[13] This is an important finding, in light of Knetter and Prusa (2003). The estimation is restricted to the observations for which anti-dumping observations are available.

[14] Even more sensitivity analysis is contained in the earlier version of this paper.

[15] Appendix Table A9 uses an outcome-based measure of trade costs available recently for a large number of countries, developed using Novy's methodology; details and the actual data are available at http://www.unescap.org/tid/artnet/trade-costs.asp. Trade costs are bilateral and cover all natural and manmade trade frictions, only some of which are protectionist in nature. Table A9 presents estimates from regressions of bilateral trade costs on the sum of the two countries' growth rates. The results are statistically insignificant, using either dyadic or country-specific fixed effects. The data set also includes the geometric average of the tariffs that the countries impose on each other; to the right of the table, I use these as regressands. Tariffs are *positively* correlated with growth using country fixed effects, and insignificantly correlated using dyadic effects. This data set seems to show little evidence that trade costs or tariffs are counter-cyclical. This result is consistent with that of Eaton, Kortum, Neiman and Romalis (2011) who argue that the collapse of trade during the great recession was different from that of the great depression since "the world trading system is now better equipped to resist protectionist pressure."

[16] I choose this because it is at least as demanding as the original Stability and Growth Pact's "severe economic downturn" which occurred during an annual fall of real GDP of at least 2%. This is now officially viewed as excessively stringent and has been weakened;
http://europa.eu/legislation_summaries/economic_and_monetary_affairs/stability_and_growth_pact/index_en.htm .

[17] I exclude safeguards and WTO disputes from Figure 5 because of the lumpiness of these measures.

[18] Using a Poisson estimator to account for the count nature of the dependent variable does not deliver stronger results.

[19] Further results are given in the earlier version of this paper, which includes more measures of protectionism and the business cycle. All those results reinforce the view that protectionism seems acyclic since WW2.

[20] Again, the early version of the paper includes more controls both individually and jointly.

[21] Description and data for the measure of Reinhart and Rogoff is available at http://www.carmenreinhart.com/research/publications-by-topic/exchange-rates-and-dollarization/. The early version of the paper also used, with similar results, the regimes of Levy-Yeyati and Sturznegger, available at https://sites.google.com/site/md4stata/linked/exchange-rate-classification.

[22] It is worth noting that even post-war data is quite limited, by scope, country and time.

[23] It is difficult to compare the cyclicality of protectionism between the pre-WW1, interwar, and post-WW2 eras, for a number of reasons. The importance of tariffs was high pret-WW1 but falls post-war; what series should then be compared across time? It is also difficult to splice together series with confidence, but inflation often makes this necessary. Nevertheless, the correlation between real GDP growth and the ratio of customs duties to imports (accounting for time- and country-specific fixed effects) is insignificantly different from zero pre-WW1, marginally significantly negative for the interwar period, and significantly positive post-WW2, at least for the six countries with data available in Mitchell since 1872.

[24] McKeown (1983) also uses this argument.

[25] The earlier version of this paper showed that controlling for the state of the government's budget balance has little effect on the cyclicality of protectionism.

[26] As always, the earlier version of this paper provides more: in this case, more tests and more fundamentals. I thank Rob Johnson and Marius Brülhart for access to their data on product fragmentation and intra-industry trade respectively.

[27] I use population data taken from the Penn World Table.

[28] I use the coarse annual classification for the Reinhart-Rogoff data, and equate floating with "freely floating," fixing with "no separate legal tender, pre-announced peg or currency board arrangement, pre-announced horizontal band that is narrower than or equal to +/-2%, or de facto peg."

[29] I choose my income cut-offs from the World Bank (http://data.worldbank.org/about/country-classifications. For the latter two fundamentals (government consumption and agriculture), I again compare the most extreme (approximate) quartiles.

[30] I choose my cut-offs to split the fundamentals data into approximate quartiles (approximate due to rounding of the cut-off points).

[31] An alternative to the strategy pursued in Table 5 is instead to add an interaction of the business cycle and the fundamentals to equation (1). I do this and tabulate the results in Appendix Table A10. The message of Table A10 is consistent with Table 5 and Figures 6-8; the cyclicality of protectionism does not vary systematically across fundamentals.

[32] Results for different methods of measuring the business cycle are available in the earlier version of this paper and show similar results.

[33] I note in passing that the 1947 Havana Charter for the International Trade Organization states in Article 2 of Chapter II (italics added): "1. The Members recognize that *the avoidance of unemployment or underemployment* … is not of domestic concern alone, but *is also a necessary condition for … the expansion of international trade*, and thus for the well-being of all other countries." http://www.wto.org/english/docs_e/legal_e/havana_e.pdf. In the conclusion to the *General Theory,* Keynes states (pp 382-3): "… if nations can learn to provide themselves with full employment … there need be no important economic forces calculated to set the interest of one country against that of its neighbours … International trade would cease to be what it is, namely, a desperate expedient to maintain employment at home by forcing sales on foreign markets and restricting purchase …"

[34] Postwar protectionism may also be affected by the fact that all the leading capitalist states are part of the same military coalition (McKeown, 1984, p. 232). It is also impossible to test this hypothesis, since we lack data on an alternative. Still, this idea seems less relevant given that the collapse of the Soviet block and the rise of China have led to few visible changes in the nature of protectionism.

[35] I use an updated version of Mike Tomz's data set on GATT/WTO membership (http://www.stanford.edu/~tomz/pubs/TGR_AER2007_merged.zip).

[36] I do not consider WTO disputes, since this mechanism is only open to members.

[37] If anything, these tabulations may under-represent the survey results. Whaples (2006, p1) writes as his first (of four) key points of consensus from economists (italics not added) "Economists overwhelmingly favor free trade — apparently, the freer the better". The abstract of Fuller and Geide-Stevenson (2010, p369) includes "Consensus is particularly strong for propositions of free international trade… "

[38] For more public opinion on free trade, see e.g., the Pew Research for American attitudes (http://pewresearch.org/pubs/1795/poll-free-trade-agreements-jobs-wages-economic-growth-china-japan-canada http://pewresearch.org/pubs/1205/support-for-free-trade-up) and Eurobarometer (http://trade.ec.europa.eu/doclib/docs/2010/november/tradoc_146948.pdf)

[39] http://www.econlib.org/library/Enc/FreeTrade.html

[40] In his 1987 *Journal of Economic Perspectives* article "Is Free Trade Passé?"

[41] http://gregmankiw.blogspot.com/2006/05/outsourcing-redux.html

[42] http://www.theatlantic.com/business/archive/2012/04/4-politically-controversial-issues-where-all-economists-agree/255600/. The website of relevance is : http://www.igmchicago.org/igm-economic-experts-panel/poll-results?SurveyID=SV_0dfr9yjnDcLh17m

[43] Irwin (2008) presents an admirable history of economic thought on the subject.

[44] http://www.piie.com/publications/papers/paper.cfm?ResearchID=1070

[45] http://www.globaltradealert.org/. Global Trade Alert implicitly assumes protectionism is counter-cyclic; for instance, the 10th GTA Report "Trade Tensions Mount" begins "The threats to an open trading system mounted in the second half of 2011 for several reasons. First, macroeconomic conditions deteriorated in Europe and China and doubts about the strength of any US economic recovery could not be shaken off. Government policy is likely to move further into a defensive posture." http://www.globaltradealert.org/gta-analysis/trade-tensions-mount-10th-gta-report

[46] http://www.globaltradealert.org/about

[47] The language quoted in the paragraph refers repeatedly to protectionism responding over time to cyclic conditions. Also, these quotations represent the iceberg's tip. Cassing, McKeown and Ochs (1986, p. 843) state "One feature of tariff policy is that tariff levels tend to move in a cycle coupled with the business cycle. Tariff barriers are lowered during periods of relative prosperity, only to be raised again during world recessions." Gallarotti (1985, p. 157) writes: "The idea that there exists some relationship between patterns of tariff legislation and a nation's economic health is by no means new… Empirically, the hypothesis has been strengthened by the identification of an inverse correlation between levels of economic activity and protection. Historically, prosperous periods have been accompanied by free trade, and periods of depression by closure." Takacs (1981, p. 1987) states "It is generally agreed that in a modern industrial economy the cyclical state of the economy and the country's competitive position internationally are the principal determinants of the degree of protectionist pressure. Low levels of economic activity, high unemployment, unused capacity, … all operate to increase the temptation to protect domestic industries from import competition." Bown and Crowley (2012, p. 2) state "… as Bagwell and Staiger (2003) and others have established, … there is an empirical presumption that import protection rises during recessions … "

[48] Hansen (1990, p 537) writes "Among quantitative studies, most model the rates of duty in the cross-section, across industries, usually in recent periods … Only a handful of quantitative studies examine policy variations over time."

[49] Perhaps the most prominent recent example is Grossman and Helpman (1994), a seminal paper which has generated a number of empirical tests, including Goldberg and Maggi (1999) and Gawande and Bandyopadhyay (2000).

[50] The exchange rate focus is shared by Blonigen and Prusa (2003).

[51] Nita and Zanardi (2013) include no cyclic measures in their empirical models of antidumping determination.

[52] With one exception in a 500+ page book, on p35: "A major global recession in the early 1980s stimulated another phase of protectionist actions." Amusingly, someone remarked to me that evidence of the counter-cyclicality of protectionism is so obvious in the literature that it need not be provided. And if you think that's circular, check out endnote 50.