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Protectionism isn't countercyclical (anymore)

Andrew K Rose

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Conventional wisdom says that when the economy starts to nosedive, the trade barriers start to rise. But this column argues that maybe protectionism isn't countercyclical after all.

Almost everyone agrees that protectionism is countercyclical; tariffs, quotas, and the like grow during recessions. 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." Meanwhile, Costinot (2009) 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 …"

But if protectionism moves inversely with the business cycle, it moves in mysterious ways. The Great Recession of 2008–09 was the most dramatic macroeconomic contraction in three generations … but there is widespread agreement that it generated almost no protectionism (see, *eg*, Kee *et al* 2011). How can this be?

It turns out that most of the literature that studies the determinants and incidence of protectionism is *cross-sectional* in nature. That is, it addresses questions like "Why do certain industries/areas/interest groups receive protectionism, while others do not?" 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). By way of contrast, little work focuses on the *time-series* variation of protectionism; that is, "How does protectionism respond to business cycle fluctuations?" Which leads me to ask the question … is protectionism really

countercyclical?

countercyclical?

The data in pictures

I start by exploiting the data set tabulated in the data appendix of Magee and Young (1987). This provides series for the natural logarithm of the American tariff and unemployment rates (among other variables), averaged over presidential administrations between 1904 and 1988. I provide time-series plots of this pair of series in the top-left graph of Figure 1. The graph immediately below is a scatter-plot of the tariff (on the ordinate) against unemployment (on the abscissa). This shows a positive relationship over the whole period; countercyclic protection. The sample is split into two in the scatter-plots to the right. Above, the data show a positive relationship between 1906 and 1942; high unemployment in the 1930s tends to coincide with high tariffs. This relationship is strikingly reversed in the graph below, which scatters tariffs against unemployment for the period between 1946 and 1982. Since World War Two, high American unemployment seems to coincide with low American tariffs; protectionism seems to be, if anything, cyclical.

Figure 1. American tariff and unemployment rates

Data averaged over Presidential Administrations: Magee and Young (1987)
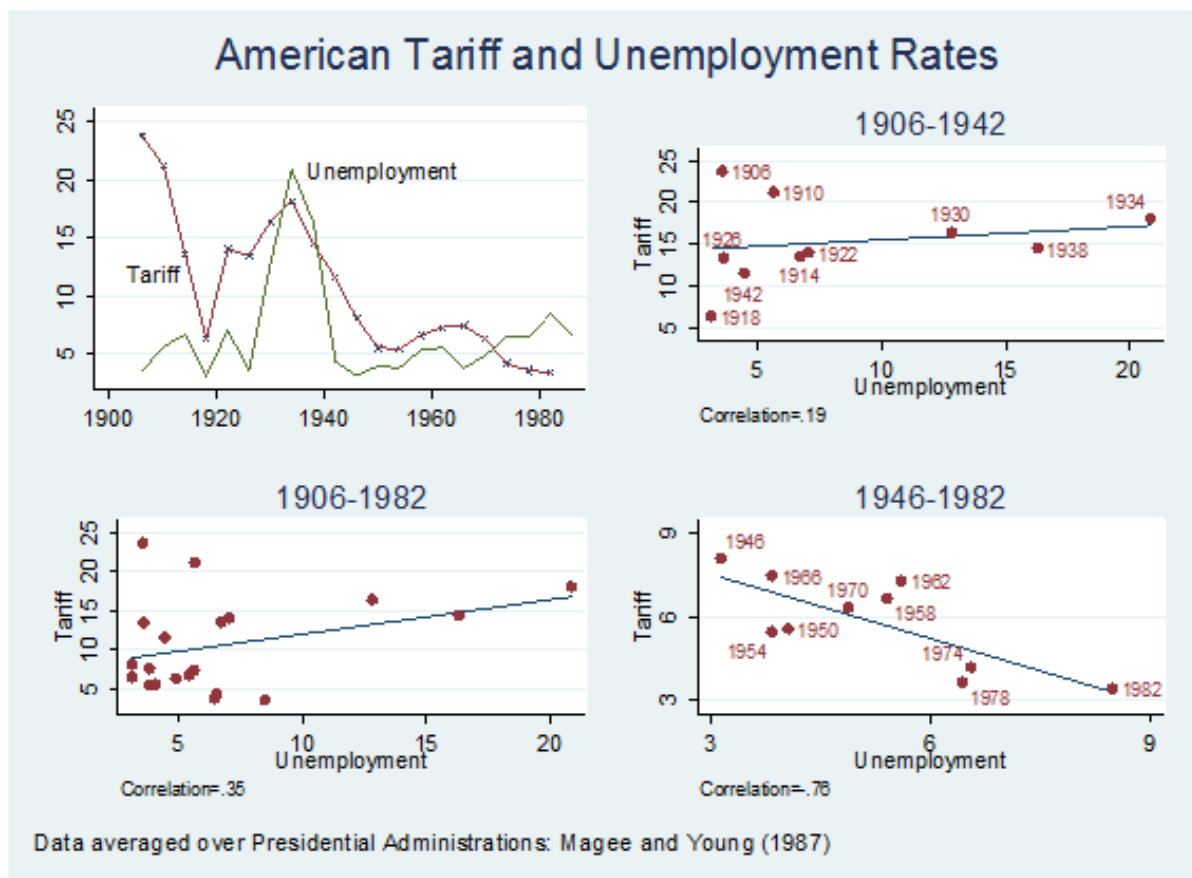
This finding is not particularly sensitive. The census bureau provides annual data on American duties (measured as a percentage of dutiable imports) between

1869 and 1997, when the series was discontinued. This can be compared to data on (the natural logarithm of real American) GNP, taken from the Bureau of Economic Analysis and extended back by Balke and Gordon. The raw series on duties and GNP are plotted in the top-left graph of Figure 2; NBER recessions are also marked on the GNP plot. Both duties and aggregate output trend strongly; accordingly, de-trended series for both duties and output (after plain-vanilla double exponential univariate de-trending) are plotted beneath. The scatter-plots on the right show again that the relationship between the two series seems to be different before and after the end of the Second World War. Before the war, de-trended GNP and protectionism are negatively correlated; business cycle upturns tend to coincide with lower protectionism. However, as can be seen in the lower-right scatter-plot, this relationship is reversed after the war when business cycle peaks and high duties appear together.

Figure 2. American protection and real GNP
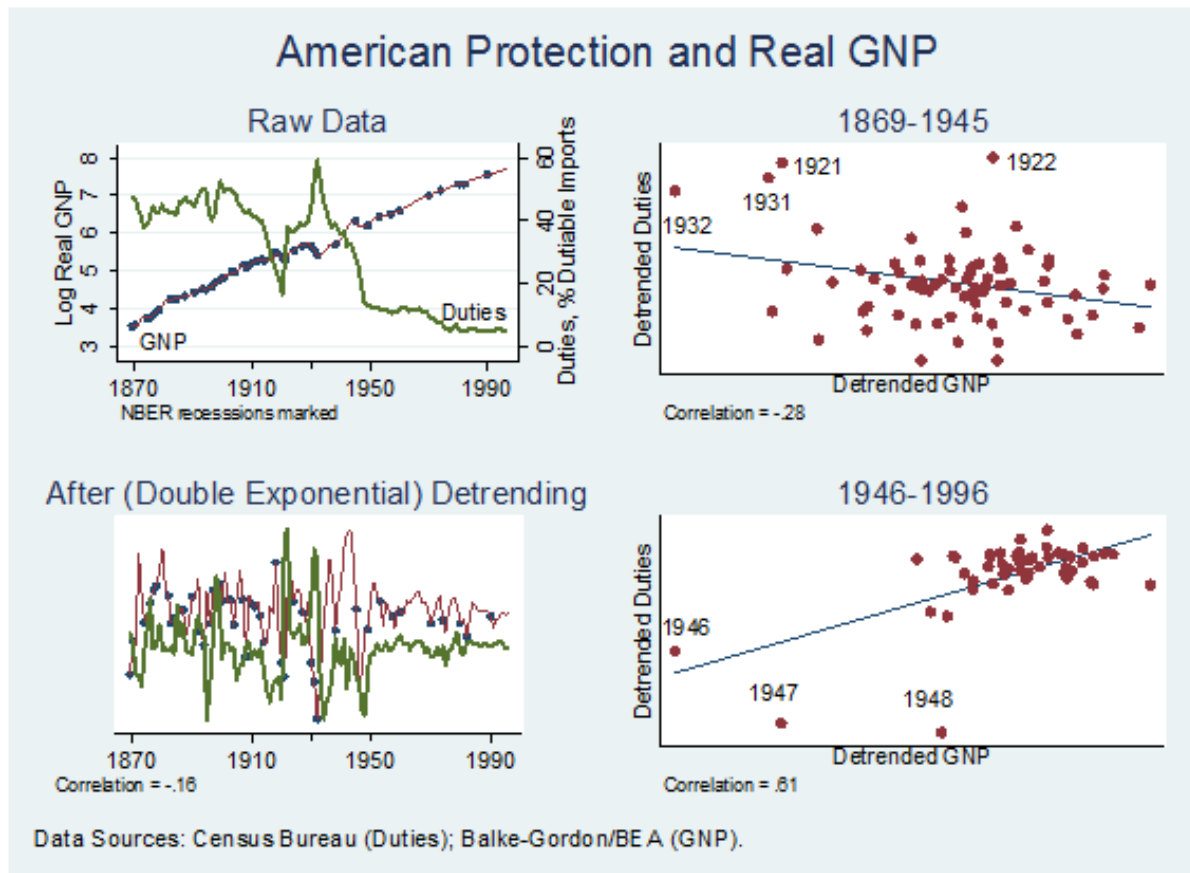
Of course, the evidence in Figures 1 and 2 is by no means definitive. At least two issues spring immediately to mind. First, the Figures only use US data. Second, the only measure of protectionism in the Figures is the aggregate tariff rate (measured more or less directly), when non-tariff barriers (NTBs) are widely considered to be an important features of modern protectionism. One

plausible way to get around both of these problems is to use more global measures of both protectionism and the business cycle. Accordingly, Figure 3 provides a time-series plot of annual global GDP growth and the number of commercial disputes initiated under the GATT/WTO dispute settlement system. This 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 led to considerable reform under the WTO in 1995. Still, this measure covers both the world and NTBs.[1] The message from Figure 3 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 protectionism.

Figure 3. Global GDP growth and protectionism
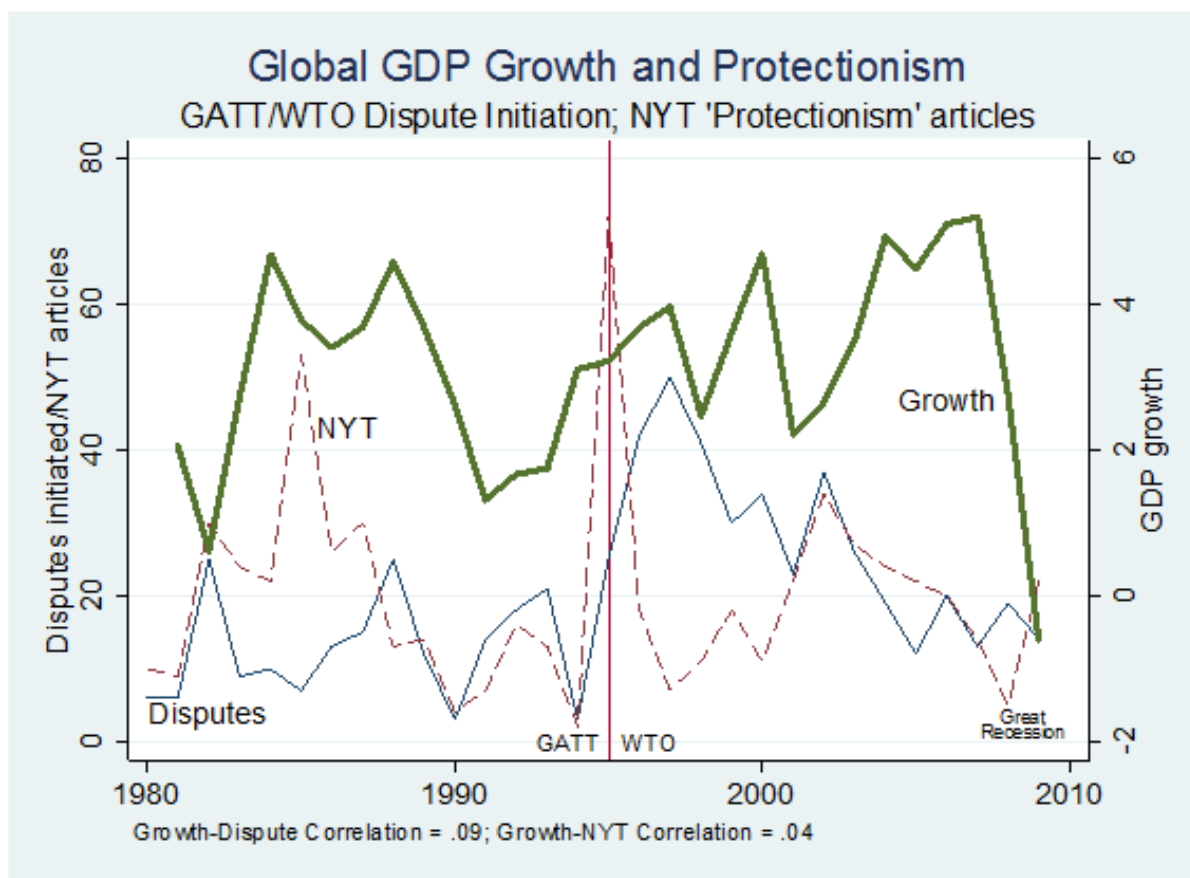
The data in tables

The data I have examined thus far show no obvious strong relationship between protectionism and the business cycle, at least for the period since the Second World War. 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

are bivariate; no account is taken of other factors. Dynamics have been ignored, as have other measures of protectionism and the business cycle. Accordingly, I now turn to more comprehensive statistical analysis.

Output and WTO dispute initiation

Table 1 presents results from a regression of the number of WTO disputes initiated by a country within a year against deviations from long-run GDP trend (including country fixed effects, see Appendix 1). I estimate this equation between 1995 and 2009 using OLS. This set-up is reduced-form in nature, so causal claims are inappropriate; it is unclear whether the coefficient of interest, γ, reflects the demand for protectionism, its supply, or both. I restrict myself to countries that have filed at least one WTO dispute during the sample period and drop individual EU member countries (EU member states do not file disputes individually).

The number of disputes initiated through the WTO's dispute settlement body is a natural measure of protectionism. The system is designed to be accessible to all WTO members and covers all manner of trade quarrels. However, I use other measures of protectionism below to check the robustness of my results. To summarise my results, I find no evidence that protectionism is countercyclic – even though I use a variety of statistical techniques (see Appendix 2).

Other measures of protectionism

Initiating a dispute with the WTO is one manifestation of protectionism, but by no means the only. To check the robustness of my finding, I replace the disputes-measure with more than a dozen alternative measures. None of these is a perfect measure of protectionism; the hope is that collectively they are persuasive.

The results presented in Table 2 (see Appendix 3) rely on the same estimation strategy as used in Table 1 (see Appendix 2), and simply substitute alternative measures of protectionism for the dependent variable. I use for instance the number of anti-dumping cases initiated as well as a variety of protectionist measures available from the World Bank's *World Development Indicators*.

The results from Table 2 are weak. The few significant coefficients all rely on the most unreliable method of de-trending GDP (residuals after the effect of a linear trend has been removed). Different measures of protectionism also give inconsistent results (protectionism rises significantly during good times when measured by bound rate averages or export taxes). Succinctly, the message from Tables 1 and 2 seems to be that protectionism is essentially acyclic.

Academic scribbling

The goal of my recent work has been to show that, at least since World War II, protectionism has not been countercyclic. While this runs counter to conventional wisdom, the evidence is reasonably strong; no obvious measure of protectionism seems to be consistently or strongly countercyclic.

An interesting question occurs: *why* is protectionism no longer countercyclic? Before World War I (and in contrast to more recent times), tariffs contributed greatly to the national treasury, there was no GATT, and the Gold Standard ruled. But it turns out that protectionist policies of countries with large and small budget deficits seem to react similarly to business cycles, as do those of countries inside and outside the GATT/WTO, those with fixed and floating exchange rates, small and large countries, and open and closed countries. If there has been a shift in the cyclicality of protectionism since WWII, it's hard to be sure why.

Perhaps, just perhaps, the switch in the cyclicality of protectionism – if there has indeed been one – 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 countercyclic protectionism; this was especially visible during the Great Recession, which saw the successful launch of *Global Trade Alert* in June 2009. If – and it's a big if – the efforts of the economic profession are part of the reason that protectionism is no longer countercyclic, then the profession deserves 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 they should focus on actually reducing protectionism.

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Rose, Andrew K (2012), "Protectionism isn't Countercyclic (anymore)", CEPR Discussion Paper 8937.

Appendix 1.

The regression I perform is:

$$NumDisp_{it} = \{\alpha_i\} + \{\beta_t\} + \gamma BC_{it} + \varepsilon_{it} \qquad (1)$$

where: $NumDisp_{it}$ is the number of WTO disputes initiated by country i in year t; $\{\alpha\}$ and $\{\beta\}$ are comprehensive sets of country- and time-specific fixed effects respectively; BC_{it} is the deviation of (the natural logarithm of) real GDP from its trend; and ε is a well-behaved residual that represents the host of other factors determining dispute initiation. Real GDP is extracted from the Penn World Table 7.0 (available through 2009); it is adjusted for PPP deviations.

Appendix 2.

Results from my regression are presented in five columns, one for each of five popular de-trending techniques. Consider the top-left entry in Table 1. This indicates that the effect of an increase in output above the trend level of real GDP (de-trended with the Baxter-King filter) on WTO dispute initiation is negative but negligible, both economically and statistically. The cells immediately to the right show that this (non-)result does not depend on the precise de-trending method. Succinctly, there is no evidence here that protectionism is countercyclic.

Table 1. Responsiveness of WTO disputes to business cycles

Business Cycle De-trending:	Baxter-King	Christiano-Fitzgerald	Hodrick-Prescott	First-Differencing	Linear in Time
Default	-.0 (2.5)	1.0 (2.3)	1.7 (2.2)	.01 (.01)	-.29 (.65)

Country FE only	.74 (2.3)	.56 (2.0)	1.7 (1.9)	.00 (.01)	.34 (.60)
Time FE only	3.0 (3.5)	-.40 (.28)	3.2 (3.0)	.01 (.02)	.11 (.66)
Without 3σ outliers	3.0* (1.5)	2.8* (1.3)	2.3 (1.3)	.01 (.01)	.30 (.38)
Substitute 1st Lag of BC	.2 (2.3)	1.5 (2.2)	1.9 (2.1)	.00 (.01)	-.38 (.64)
Poisson	1.6 (1.6)	1.9 (1.7)	2.4 (1.6)	.01 (.01)	.29 (.65)
GATT Disputes (1950-1994)	1.0 (.6)	.6 (.6)	.8 (.5)	.005 (.004)	.14 (.15)

Each cell is a coefficient from a separate regression of number of WTO disputes filed on deviation of log real GDP from trend. 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. Default sample: 42 countries that have ever filed a WTO dispute, 1995-2009. EU counted as single observation; most cells have 627 observations.

The rows beneath indicate that this result is insensitive to a number of underlying assumptions. For instance, the results are robust to dropping time-specific fixed effects, country-specific effects, or outliers. Perhaps the relationship between protectionism and the business cycle is not contemporaneous? To investigate, I substitute the first lag of de-trended output in place of contemporaneous de-trended output. Likewise, using a Poisson estimator instead of least squares (to take account of the count nature of the regressand) does not strengthen the case for countercyclic protectionism. The last row at the bottom of the table shows that using historical evidence on disputes initiated under the GATT (as opposed to the WTO) changes little.

Appendix 3.

In Table 2 the first row uses the number of anti-dumping cases initiated; these are insignificantly related to business cycle fluctuations. I also use a variety of protectionist measures available from the World Bank's *World Development*

Indicators including: the percentage of all products with protection at the bound tariff limit; the simple average of the bound rate (averaged across all products); customs duties measured as percentages of both goods imports, and of tax revenue; export taxes measured as a percentage of tax revenue; the share of tariff lines (across products) with international peaks; and tariffs measured four ways (both applied and most-favored nation rates, averaged both simply and with trade weights.) I also use the index of trade freedom (from the Heritage Foundation) and the number of regional trade agreements either initiated or completed.

Table 2. Responsiveness of other measures of protectionism to business cycles

Regressand:	Baxter-King	Christiano-Fitzgerald	Hodrick-Prescott	First-Differencing	Linear in Time
Anti-Dumping Cases Initiated	21.1 (22.7)	16.6 (20.5)	28.8 (20.3)	.11 (.13)	-.8 (4.7)
Binding Coverage %	-.44 (.23)	-.32 (.19)	-.32 (.19)	-.000 (.001)	-.13* (.05)
Bound Rate, simple average	.86 (.61)	2.3 (1.3)	1.86 (1.35)	.01 (.01)	2.0** (.4)
Customs Duties, % Goods Imports	-.02 (.04)	.03 (.04)	-.01 (.04)	-.00 (.00)	-.05** (.01)
Customs Duties, % taxes	2.4 (4.9)	6.3 (4.8)	.9 (4.7)	.04 (.03)	.8 (1.6)
Customs Duties, % GDP	1.4 (1.0)	1.5 (1.1)	.9 (1.0)	.01 (.01)	.06 (.36)
Exports Taxes, % Taxes	.3 (3.1)	-2.1 (4.0)	-1.2 (4.0)	.00 (.03)	2.9* (1.5)
% Tariffs with intern'l peaks	-3.7 (10.2)	2.5 (8.9)	-.0 (8.8)	-.02 (.05)	1.9 (2.3)
Applied Tariff Rate, simple	4.3 (5.5)	1.1 (4.4)	.8 (4.3)	-.03 (.03)	-3.4** (1.1)
Applied Tariff Rate, weighted	-3.5 (9.8)	-6.1 (7.6)	-7.1 (7.5)	-.03 (.04)	-2.6 (1.9)
MFN Tariff Rate, simple	6.9 (5.5)	3.1 (4.4)	3.1 (4.4)	-.02 (.03)	-2.8* (1.1)

MFN Tariff Rate, weighted	-4.1 (9.8)	-6.0 (7.6)	-6.7 (7.5)	-.02 (.04)	-2.1 (1.9)
Trade Freedom (Index of Economic Freedom)	-4.9 (6.5)	-2.5 (5.9)	-5.9 (5.9)	.03 (.04)	4.4** (1.7)
Number RTAs initiated/completed	.14 (.26)	.15 (.25)	.16 (.24)	.001 (.001)	-.02 (.07)

Each cell is a coefficient from a separate regression (left column) on deviation of log real GDP from trend. 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. Default Sample: annual observations from as far back as 1978 through 2009. EU counted as single observation. Principal factor is first factor (eigenvalue of 3.1, with 94% variation explained) extracted from: binding coverage as a percentage; customs duties as a percentage of taxes taxes; duties as a percentage of merchandise imports; share of tariffs with international peaks; applied tariff rate weighted; trade freedom; and number of regional trade agreements (RTAs) initiated/signed.

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[1] As a crude measure of public interest on the topic, I also add in a plot for the number of articles in *The New York* Times that use the term 'protectionism'. I note in passing that American (as opposed to global) growth is poorly correlated with both *NYT* citations (.04) and American initiations of GATT/WTO disputes (.20).

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