

# ***The Tariff Response to World Market Integration in the Periphery Before the Modern Era***

**Jeffrey G. Williamson  
Harvard University**

June 1 draft

Paper to be presented to the *Market Integration Workshop*, European University Institute, Fiesole, Italy (July 1-4, 2004). It draws heavily on three previous papers: "Explaining World Tariffs 1870-1938: Stolper-Samuelson, Strategic Tariffs and State Revenues," in R. Findlay, R. Henriksson, H. Lindgren and M. Lundahl (eds.), *Eli F. Heckscher, 1879-1952: A Celebratory Symposium* (Cambridge, Mass.: MIT Press, 2004 forthcoming); "The Roots of Latin American Protectionism: Looking Before the Great Depression," in A. Estevadeordal, D. Rodrik, A. Taylor and A. Velasco (eds.), *FTAA and Beyond: Prospects for Integration in the Americas* (Cambridge, Mass.: Harvard University Press, 2004), with J. Coatsworth; and "Always Protectionist? Latin American Tariffs from Independence to Great Depression," *Journal of Latin American Studies* (2004 forthcoming), also with Coatsworth. In addition, the paper relies heavily on a long term project which has involved four other collaborators besides John Coatsworth: Luis Bértola, Chris Blattman, Michael Clemens and David Clingingsmith. I am grateful to all five of them, but errors remaining belong to me. I also acknowledge generous financial support from the National Science Foundation SES-0001362.

## 1. Thinking about Tariff Policy

What determines tariff policy? It can't be conventional economics, since every mainstream economist agrees that free trade is a good thing (Smith 1776; Mill 1909; Bhagwati 2000). Yet, the politics of free trade have been surrounded by controversy ever since Alexander Hamilton tried shoving his protectionist policies down the throats of a new United States congress after 1789, and since Robert Peel ruined his political career by shoving free trade down the throats of the British Parliament in 1846. Political leaders have never been solely, or even largely, interested in maximizing national income, let alone maximizing world income. Rather, their main goal has always been "to get a larger slice [of the pie] for their supporters" (McGillivray et al. 2001: p. 2). Protection and free trade have always been for sale in the political market place (Grossman and Helpman 1994), but having said so doesn't make the question -- what determines tariff policy? -- any easier to answer. After all, nations will adopt different tariff policies to the extent that there are different economic interests lobbying for those policies, to the extent that the economic environment impacting on those interests is different, and to the extent that different political institutions dictate which economic interests have the most votes.

Thus, to explain tariff policy, we need to understand the underlying economic, political and institutional fundamentals at work. There are three ways that endogenous tariff theory has tried to uncover the fundamentals (McGillivray et al. 2001: pp. 3-16): by comparing tariffs across industries within countries; by comparing tariffs between countries at various points in time; and by exploring country tariffs over time. This essay will exploit the second and third by exploring quantitatively annual tariff rate data for 35 countries between 1870 and 1938 (accounting for almost 83 percent of the world's 1900 population). The central focus, however, is the periphery rather than the industrial core, and the central question is how the autonomous part of the periphery dealt with the technological events that contributed so much to world market integration before 1913.

The next section will review the pre-modern tariff evidence, identifying the tariff facts most needing explanation. Section 3 explores the familiar Stolper-Samuelson corollary and its recent

extensions, showing why it is so important to find out whether it was the central force driving tariffs in the past. Section 4 does the same for the infant industry argument. Section 5 lays out the contending determinants of tariff policy, while section 6 explores their role empirically. It appears that tariff policy before World War II was driven primarily by Stolper-Samuelson forces, revenue needs and strategic tariff behavior, not by infant industry.

## **2. World Tariff Facts 1870-1938**

This essay uses the computed average tariff rate<sup>1</sup> to explore the policy experience of 35 countries between the 1860s and World War II: the United States; 3 members of the European industrial core (France, Germany, United Kingdom); 3 non-Latin European offshoots (Australia, Canada, New Zealand); 10 from the industrially-lagging European periphery (Austria-Hungary, Denmark, Greece, Italy, Norway, Portugal, Russia, Serbia, Spain, Sweden); 10 from Asia and the Mideast (Burma, Ceylon, China, Egypt, India, Indonesia, Japan, the Philippines, Siam, Turkey); and 8 from Latin America (Argentina, Brazil, Chile, Colombia, Cuba, Mexico, Peru, Uruguay). Figure 1 plots average world tariffs from the 1860s to the 1990s, and Figure 2 plots it up to 1938 for some regional clubs.<sup>2</sup> There are six regions plotted in Figure 2 – the US, the European industrial core, the European periphery, the European non-Latin offshoots, Asia and Latin America – the country members of which have just been identified.

Note first the significant role played by inflations and deflations at key points in the past. Import duties were typically specific until modern times, quoted as pesos per bale, dollars per yard, or yen per ton. Under a regime of specific duties, abrupt changes in price levels can change import values in the denominator, but not the legislated duty in the numerator, thus producing big percentage point changes in equivalent *ad valorem* tariff rates. The impact of inflation during World War I was quite spectacular, and it had nothing to do with policy. Thus, tariff rates in all six regions fell sharply between 1914 and 1919,<sup>3</sup> and part of the rise in tariffs immediately after the war was also due to post-war deflation and the partial

resumption of prewar price levels. The post-1929 price deflation was even more spectacular, and it too served to raise tariff rates at least on duties that were still specific (import values now declining). While the specific-duty effect certainly played a role at these critical points, I will show that it was not an important factor in accounting for long run trends during peacetime or for differences between countries.

Second, the well-known surge to world protection in the 1920s and 1930s is certainly revealed in Figure 1. What is less well known, however, is the pronounced protectionist drift worldwide between 1865 and about 1900. And what looks in Figure 1 like a modest pre-World War I anti-globalization backlash -- a retreat from the liberal pro-global trade positions in mid-century (Williamson 1998; 2002; 2004) -- is *far* more dramatic when the world averages are disaggregated in Figure 2. Indeed, there is a very pronounced rise in tariffs across Latin America, across the non-Latin European offshoots (the United States being the major exception) and across the European periphery. This steep rise up to the 1890s in the periphery's tariff rates *far* exceeds that of the European core, a notable fact given that almost nothing has been written about this anti-global tariff trend in the periphery.

Third, note the enormous variance in levels of protection between the regional averages. The richer new world European offshoots had levels of protection almost three times that of the European core around the turn of the last century. When the US is shifted to the rich European offshoot club, the ratio of European offshoot tariffs to that of the core is more than three to one. To take another example, in 1925 the European periphery had tariffs about two and a half times higher than those in the European part of the industrial core. To take yet another example, in 1885 the poor but independent parts of Latin America (Brazil, Colombia, Mexico and Peru) had tariffs almost five times higher than those in the poor and dependent parts of Asia (Burma, Ceylon, China, Egypt, India, Indonesia and the Philippines), while the poor but independent parts of Asia (Siam, Turkey and Japan) had tariff rates about the same as the poor but dependent parts of Asia. Of course, colonial status, lack of autonomy and "unequal treaties" all played an important role in Asia, and I will control for that fact in what follows.

Fourth, there was great variance *within* these regional clubs. In 1905, tariffs in Uruguay (the most protectionist land-abundant and labor-scarce country) were about two and a half times those in Canada

(the least protectionist land-abundant and labor-scarce country). In the same year, tariffs in Brazil and Colombia (the most protectionist poor but autonomous countries in Latin America) were almost ten times those in China and India (the least protectionist poor and non-autonomous countries in Asia). The same high-low range appeared within the industrial core (the United States five times the UK) and the European periphery (Russia six times Austria-Hungary). After 1919, tariff variance between countries was about the same as tariff variance over time, but before 1914, tariff variance between countries was more than twice that of the tariff variance over time. Thus, explaining differences in tariff policy between countries is at least as challenging as explaining changes in tariff policy, perhaps more so.

The empirical analysis later in this essay will treat countries as the unit of observation, but for a moment let us linger a little longer on the regional clubs. Prior to World War I, tariffs were much higher in the rich European offshoots than anywhere else. Furthermore, and as I have already mentioned, they would have been even higher had I allocated to this club one of the most protectionist, the United States (which is allocated instead to the core).<sup>4</sup> The European members of the industrial core (France, Germany, UK) had the lowest tariffs, although the United States serves to raise the club average. Most members of the poor periphery in Asia were colonies or quasi-colonies of the industrial core (Burma, Ceylon, Egypt, India, Indonesia, the Philippines), or were forced to sign free trade agreements (“unequal treaties”) with the core since the latter had naval guns trained on their potential trading partners (China, Japan), or viewed nearby gunboats as a sufficient threat to go open on their own (Siam). Thus, tariff rates in Asia were pretty much like those of the core early on, but they started drifting towards protection after the 1880s, long before the post-World War II independence movement.

I should also stress that colonial status did not necessarily imply lack of local influence on tariff policy. There are five colonies in my sample from Asia -- Burma, Ceylon, India, Indonesia and the Philippines, although foreign influence was strong enough (including occupation) to make Egypt behave like a colony. A previous paper (Clemens and Williamson 2002) has shown that while colonial tariff policy did indeed mimic that of their masters, local conditions mattered as well. Thus, I retain the full sample of 35, although I will take care to control for colonial status and tariff autonomy.

In any case, while Asia had the lowest tariffs in 1865, they were approaching that of the protectionist rich European offshoots by 1914. The European periphery leaped to high levels of protection after the 1870s, with Russia leading the way. There is plenty of evidence of rising world protection before World War I, but the much-studied European continental backlash plotted in Figure 2 looks pretty bland compared with the rest of the world. Indeed, the pre-1914 global backlash took place mainly in Latin America, the European offshoots (excluding the United States, which retreated from its enormous Civil War tariffs) and the European periphery.

There are some surprises in these tariff data that have not been given much notice by previous scholars. For example, the traditional literature has made much of the tariff backlash on the continent to the “grain invasion” after the 1870s (Kindleberger 1951; Bairoch 1989; O’Rourke 1997): between the 1870s and the 1890s, average tariff rates rose by 5.7 percentage points in France (to 10.1 percent) and 5.3 percentage points in Germany (to 9.1 percent). However, this anti-liberal move to higher tariffs by the leading economies on the continent is repeated in the European periphery (up 4.2 percentage points to 16.8 percent) and in our four poor Latin American countries (up 6.9 percentage points to 34 percent), regions where, one assumes by symmetry, a “manufactures invasion” must have been the motivating event. The traditional literature also teaches that the Latin American reluctance to go open in the late 20<sup>th</sup> century was the product of the Great Depression and the import substitution industrial (ISI) strategies that arose from it (Diaz-Alejandro 1984; Corbo 1992). Yet, Latin America already had by far the highest tariffs in the world by the mid-late 19<sup>th</sup> century (Coatsworth and Williamson 2004a; 2004b). Thus, whatever explanation is offered for the Latin American commitment to high tariffs, it must search for origins well before the Great Depression. Finally, it is not true that Asia waited for post World War II independence to switch to protectionist policies. We have already noted that there was an upward surge in tariff rates in Asia after the 1880s and early 1890s, illustrated best by Burma, India, the Philippines, Siam and Turkey. With the exception of Egypt and Japan, all of the Asian countries underwent a surge to high tariffs in the 1930s, and most of these countries stuck with these higher tariffs into the 1940s and the modern era. To give some sense of how large the rise in tariff barriers was around an Asian periphery

dominated by allegedly passive and free-trading colonies, the tariff rate rose in India by 22 percentage points between 1920 and 1939, by 36.7 percentage points between 1920 and 1939 in Egypt, by 26.9 percentage points between 1918 and 1936 in Siam, and by 34.1 percentage points between 1923 and 1937 in Turkey. We need to know how much of the surge in Asian tariffs from the 1880s to the 1930s was due to a weakening colonial grip and to the expiration of “unequal treaties” (signed decades earlier), both of which would have given the region the necessary autonomy to set higher tariffs according to local political economy forces.

So, what determined who protected and when in the century and a half before World War II?

### **3. Was It Stolper-Samuelson or Something Else, and Why Does It Matter?**

Was the rise in tariffs and/or high tariffs before World War I driven by some anti-global reaction, that is, by some backlash? Until the race towards autarky in the 1930s, the free traders were members of the industrial core, their colonies, or those who their gunboats had intimidated to open up. The rest had erected high tariff walls. Was the autonomous periphery simply defending itself against the forces of world market integration unleashed by the technologies embedded in steam ships, canals and railroads? In the three decades or so following 1865, the rise in tariff rates was ubiquitous world-wide. Was this upsurge a policy response to the spectacular fall in transport costs which was serving to integrate world commodity markets and to blow the winds of international competition down the necks of import-competing industries which geography had protected before? It is essential to get answers to these questions if the modern debate about the future of globalization is to be properly informed by history. Simply to show high and/or rising tariffs is not enough. Did globalization backlash account for it?

The most elegant backlash explanation has its roots in the work of Eli Heckscher and Bertil Ohlin who showed us how endowments could account for trade patterns, factor abundance dictating competitiveness in world markets and what would be exported by whom. In addition, Heckscher (1919: reprinted in Flam and Flanders 1991) showed how foreign trade effects the distribution of income, but

most economists had to wait for Wolfgang Stolper and Paul Samuelson (1941) to elaborate the corollary in English, namely that the scarce factor should favor protection and the abundant factor should favor free trade. Fifteen years ago, Stolper-Samuelson thinking was used with great skill by Ronald Rogowski (1989) who applied it to country trade policy the world around from 1840 to the present. There are two limitations to the way Rogowski used the Stolper-Samuelson corollary, however. First, the corollary only tells us who votes for what, not who wins the voting. Since the landed elite dominated voting in land-scarce Europe,<sup>5</sup> the import-competing sectors got the protection from foreign grains that the landed elite wanted. What happens, however, when the scarce factor does not have the vote, as was true of labor throughout most of the world before the 1930s?<sup>6</sup> Did labor get the protection of import-competing manufacturing that it should have wanted in labor-scarce Latin America, in the labor-scarce English-speaking new world, and in labor-scarce southeast Asia? Second, Rogowski uses the corollary to speak only to *levels* of protection, not to *changes* in protection. We want to know whether a rise in protection can be attributed to globalization backlash and to compensation of the damaged scarce factor, so a dynamic version of Stolper-Samuelson is more relevant.<sup>7</sup>

When the import-competing sector is damaged by an adverse price shock (that is, *by an improvement in the periphery country's terms of trade*), induced by world market events or by declining seaborne transport costs that reduce import and raise export prices, is there always a “compensation effect” that drives up tariffs? The answer will depend largely on whether the factors in the slumping sector can escape to the booming sector. Stolper-Samuelson has a far better chance of explaining 19<sup>th</sup> century tariff policy when, after all, most trade was in primary products and (immobile) specific factors played a big role. It has a far poorer chance of explaining modern tariff policy when trade is dominated by manufactures and most factors -- labor, skills and capital -- are mobile.<sup>8</sup>

Finally, when and where should we look for such de-industrializing price shocks in the periphery? There are two forces that will help yield that result: relatively rapid productivity advance in manufacturing in the industrial core; and a relatively dramatic decline in transport costs between core and

periphery. Both of these forces should cause a world trade boom, and they should also cause the terms of trade to soar for the primary-product-exporting periphery where the two forces reinforce each other. The best place to look for these forces are the first six to eight decades of the 19<sup>th</sup> century, since the rate of industrialization in the core slowed down thereafter and the world transport revolution had pretty much finished its secular boom by the 1890s (Mohammed and Williamson 2004). And that is exactly what we find (Clingsmith and Williamson 2004). The Egyptian terms of trade rose by two and a half times between 1820-1824 and 1855-1859, or 2.7 percent per annum, and it continued to drift upwards until the 1890s (Figure 3); the Ottoman terms of trade increased by two and a half times between 1815-1819 and 1855-1859, or 2.4 percent per annum, and it kept those gains for the rest of the century (Figure 4); and the Latin American terms of trade increased by 1.7 times between 1820-1824 and 1855-1859, or 1.7 percent per annum, and the boom continued to the 1890s (Figure 5). Is it a coincidence that “re-industrialization” in the periphery starts after the 1860s when the rise in its terms of trade stops (except for export-booming Latin America)?

#### **4. Was It Infant Industry or Something Else, and Why Does It Matter?**

It has always been believed that a second powerful motivation for high tariffs on imported manufactures in the early-industrial periphery is development policy. Central authorities were persuaded for much of the 20<sup>th</sup> century that industrialization was the only vehicle for development and that protection fostered that process. Indeed, they have often cited 19<sup>th</sup> century experience to help support these claims. I will call this motivation the infant industry argument for short, with the understanding that it includes development and industrial policy.

Does protection help or hinder growth? It should be useful to answer this question first to see whether policy makers in the autonomous parts of the periphery could have used such evidence to support their protectionist policies in the century before the 1930s. Of course, policy makers of that time didn't have the models, methods and evidence that we can exploit today, but they certainly would have had the

intuition. Were we asking this question about the late 20<sup>th</sup> century, then the evidence would strongly support the position that protection *hindered* growth. But what about the 19<sup>th</sup> century? Did protection foster<sup>9</sup> growth in the pre-World War I periphery where those tariff rates were so high?

Policy makers in those parts of the periphery which had tariff autonomy were certainly aware of the pro-protectionist infant-industry argument offered for the German *Zollverein* by Frederich List and for the United States customs union by Alexander Hamilton. This was certainly true of late 19<sup>th</sup> century Latin America (Bulmer-Thomas 1994: p.140). However, it is important to stress “late” in the previous sentence since the use of protection specifically and consciously to foster industry does not occur in Mexico until the early 1890s, Brazil and Chile a little later in the 1890s, and Colombia in the early 1900s (Coatsworth and Williamson 2004a; 2004b). So, the qualitative evidence suggests that domestic industry protection becomes a significant motivation for Latin American tariffs only near the turn of the previous century. It turns out that there is absolutely no pre-World War I quantitative evidence which would have supported infant industry arguments for Latin America either: high tariffs were correlated with slow growth, just like the late 20<sup>th</sup> century (Coatsworth and Williamson 2004a). We must look elsewhere for plausible explanations for the exceptionally high (and often rising) tariffs in the autonomous periphery in the century before the Great Depression. One of the alternative explanations that I will explore in the next section involves the revenue needs of central governments. As a signal of things to come, I simply note here that the causation probably went the other way round in the autonomous periphery. That is, countries achieving rapid GDP per capita growth also underwent faster growth in imports and in other parts of the tax base, thus reducing the need for high tariff *rates*. And countries suffering slow growth would have had to keep tariff *rates* high to ensure adequate revenues.

Why is it important to find no evidence supporting a protection-fosters-growth correlation in the periphery before the interwar decades? The answer, of course, is that such evidence would add more support to the view that those high and rising tariffs in the periphery represented a globalization backlash as it was “flooded with manufactures” from the industrial core. The periphery *was* flooded with ever-cheaper manufactures, as the natural barriers of geography fell in response to the railroad and steamship,

and as industrial Europe and North America underwent impressive productivity advance in manufacturing. If the periphery was in fact hoping to stimulate industrial development by protection, tariffs would have had to rise higher and higher to offset the continued fall in the landed price of imported manufactures.

## 5. The Political Economy of Tariffs: Some Preliminaries

### Tariffs for Revenue

Were revenues a strong motive for high tariffs? If so, were those high pre-World War I tariffs in Latin America and the European periphery really all that the market could bear? As Douglas Irwin (1998a: pp. 8-12) has recently stressed for the United States, the revenue-maximizing tariff hinges crucially on the price elasticity of import demand. Tariff revenue can be expressed as  $R = tpM$ , where  $R$  is revenue,  $t$  is the average *ad valorem* tariff rate,  $p$  is the average import price and  $M$  is import volume. Totally differentiating with respect to  $t$ , and assuming that the typical 19<sup>th</sup> century country in the periphery was a price taker for manufacturing imports, yields  $dR/dt = pM + (tp)dM/dt$ . The revenue-maximizing tariff rate,  $t^*$ , is found by setting  $dR/dt = 0$  (the peak of some Laffer Curve) in which case  $t^* = -1/(1 + O)$ , where  $O$  is the price elasticity of demand for imports. Irwin (1998a: p. 14) estimates the price elasticity to have been about -2.6 for the United States between 1869 and 1913. Since the import mix for countries around the periphery was similar to that of the United States, assuming the price elasticity for the former around -3 can't be too far off the mark. Under those assumptions, the revenue-maximizing tariff in the periphery would have been very high indeed, about 50 percent.

Suppose some government in the periphery – riding an export boom -- had in mind some target revenue share in GDP ( $R/Y = r$ ) and could not rely on foreign capital inflows to balance the current account (so  $pM = X$ ), then  $r = tpM/Y = tX/Y$ . Clearly, if foreign exchange earnings from exports (and thus imports) were booming (an event which could be caused by a terms of trade boom, denoted here by a fall in the relative price of imports,  $p$ , or by a supply-side expansion which increased export quantities,

X), then the target revenue share could have been achieved at lower tariff rates,  $\underline{t}$ . The bigger the export boom, the higher the export share, the bigger the import share, and the lower the necessary tariff rate.

So, did independent governments in Latin America, the European periphery and Asia act as if they were meeting revenue targets? *Ceteris paribus*, did they lower tariff rates during world primary product booms when export shares were high and rising, and did they raise them during world primary product slumps?

Of course, countries in the periphery which were successful in getting external finance from the European core would have had less reason to use high tariffs to augment revenues in the short run and medium term. Since world capital markets became increasingly well integrated up to 1913 (Obstfeld and Taylor 2003; Clemens and Williamson 2004), high tariffs that were necessary in 1865 would no longer have been necessary in 1913 if “revenue smoothing” was a key motivation. However, there may have been plenty of motivation to raise them again when world capital markets fell apart in the interwar years. Furthermore, countries that developed internal (and less distortionary) tax sources would have had less need for high tariffs, an event that started in the late 19<sup>th</sup> century industrial core, accelerating during the interwar rise of the welfare state (Lindert 2004). Such developments lagged behind in the periphery, however.

### **The Stolper-Samuelson Theorem and Scarce Factor Compensation**

The Stolper-Samuelson theorem tells us that protection benefits owners of factors in which that society is poorly endowed. According to this kind of thinking, Latin American capitalists should have been looking to form protectionist coalitions as soon as the transport revolutions of the *belle époque* began to threaten them with freer trade. In most cases, they did not have to look far, either because they managed to dominate oligarchic regimes that excluded other interests, or because they readily found coalition partners willing to help, or both (Rogowski 1989; Coatsworth and Williamson 2004a).

Why no scarce labor in the Latin American tale? Growth, peace and political stability after 1870 did not necessarily produce democratic inclusion in Latin America. Most countries in the region limited

the franchise to a small minority of adult men until well into the 20<sup>th</sup> century. Literacy and wealth requirements excluded, as we have seen, most potential voters in virtually every country (Engerman, Haber and Sokoloff 2000). Thus, the late 19<sup>th</sup> century tended to produce oligarchic governments in which urban capitalists -- linked to external trade and finance -- played a dominant role. In countries that specialized in exporting agricultural products, free-trading landowners formed the second dominant part of the governing oligarchy. Free-trading mineral export interests usually had less direct leverage in governmental decision making, despite the size and significance of their investments. Thus, unambiguous protectionist outcomes would hardly have been predicted for every Latin American country.

To the extent that Stolper-Samuelson thinking is useful it should help account for the variance in tariff rates around the periphery before World War II. After all, the land-abundant English-speaking new world countries were places where scarce labor had a powerful political voice to lobby for protection, joining scarce capital. The European periphery had scarce land and capital lobbying for protection, while the voices of free-trading labor were suppressed. Southeast Asia had scarce labor and capital, but with political participation limited to free-trading landed interests. The rest of Asia was pretty much land and capital scarce, but free-trading labor had little or no political voice. The important point here is that the Stolper-Samuelson theorem tells us who should vote for free trade and who should vote for protection, but it does not tell us who gets the most votes.

### **De-Industrialization Fears and Scarce Factor Compensation**

Were high and rising tariffs in the periphery generated by de-industrialization fears and/or Stolper-Samuelson compensation of scarce factors at home in response to falling import prices?

Three things are essential to the survival of any import competing industry: low costs of inputs -- like labor, power and raw materials; high productivity in the use of those inputs; and high market prices of output. Policy makers in the periphery could not do much about the first two,<sup>10</sup> but they could do a great deal about the third by pushing up tariff barriers, excluding foreign imports and thus raising the domestic price of manufactures relative to other products produced for home or foreign markets. Whether

they could be raised enough to *offset* the impact of rapid productivity advance in the industrial core and of transport revolutions world wide – both serving to reduce the relative price of manufactures in periphery markets – is another matter. When industrial productivity advance in the core was fast, world market prices of manufactures declined relative to other products, and foreign firms were increasingly competitive in local periphery markets. Thus, policy makers in the periphery who favored industry, and/or the scarce factors used there, had reason to raise tariffs in response to any sharp decline in the relative price of manufactures, especially relative to prices of the primary products the periphery exported to the core. In short, if the periphery had de-industrialization fears, or wanted to compensate the damaged scarce factors, it would have raised tariffs in response to falling prices of manufactures relative to primary products in world markets – to repeat, *in response to an improvement in the periphery's terms of trade*.

As we have seen, the periphery's terms of trade *did* improve across most of the 19<sup>th</sup> century, thus, in theory, encouraging the use of tariffs there to compensate the import-competing industries. We also saw how the terms of trade fell from those high plateaus after the early 1890s (Figures 3-5), an epoch of terms of trade deterioration when there should have been *less*, not more, need for tariffs to compensate the import-competing industries. So, did these secular terms of trade movements provoke the tariff responses in the periphery that theory predicts?

### **Falling Geographic Barriers and Scarce Factor Compensation**

High transport costs on goods imported from one's trading partner are just as protective as high tariffs. When new transport technologies induce a dramatic fall in freight costs, the winds of competition thus created give powerful incentives to import competing industries (and scarce factors) to lobby for more protection. Since there certainly was a transport revolution across the 19<sup>th</sup> century (O'Rourke and Williamson 1999: Chp. 3; Mohammed and Williamson 2004), there was plenty of incentive for manufacturing interests in the periphery and agricultural interests in the European core to lobby for protection as the natural barriers afforded by transport costs melted away. This connection was confirmed

long ago for the “invasion of grains” into Europe from the United States, the Ukraine and elsewhere. But what about the “invasion of manufactures” into the periphery from industrial Europe?

The transport revolution took many forms, but three mattered most: a decline in overseas tramp freight rates; the appearance of major canals, like the Suez and the Panama; and the penetration of railroads into interior markets. Tramp freight rates fell everywhere, but mainly on routes carrying high bulk intermediates and foodstuffs to Europe, much less on routes carrying low bulk manufactures to the periphery. Meanwhile, railroads penetrated everywhere, and this fact might have been especially relevant for tariff policy where markets were mainly located in the interior. If railroads exposed previously-isolated interior local manufacturing to increased foreign competition, those interests should have lobbied for more protection, and railroad penetration of the interior was especially important in Latin America, eastern Europe and even India.

### **Strategic Trade Policy, the Terms of Trade and Tariffs**

A well-developed theoretical literature on strategic trade policy predicts that nations have an incentive to inflate their own terms of trade by raising tariffs, unless, of course, trading partners agree to mutual concessions (e.g. Dixit 1987; Bagwell and Staiger 2002; Clemens and Williamson 2004). According to this kind of thinking, a country’s own tariffs will depend at least in part upon the country’s external tariff environment. Elsewhere, a principal-trading-partners’-tariff index has been calculated for our 35 countries (Blattman, Clemens and Williamson 2002) and the index is revealing. In the two decades before World War I, every region except the industrial core and Latin America faced much lower tariff rates in their main export markets than they themselves erected against competitors in their own markets. The explanation, of course, is that the main export markets were located in the European core, where tariffs were much lower. Thus, most of the periphery faced much lower tariffs than did the core, although this was not true of Latin America for whom the protectionist United States was such an important market. During the interwar there was convergence: every regional club faced very similar and high tariff

rates in export markets, but those rates facing the periphery were rising very steeply as the core made that big policy switch from free trade to protection.

It might pay to repeat that Latin America, for example, faced *far* higher tariffs than anyone else since they traded with the heavily-protected United States. So, did this “hostile” policy environment abroad trigger a like response at home? While the strategic trade thesis holds promise in helping account for higher tariffs in Latin America and in that part of the European periphery trading with more-protectionist France and Germany, it holds less promise for that part of the European periphery whose exports were sent to free-trading United Kingdom. Indeed, between 1900 and World War I a decline in partner tariffs took place everywhere in the periphery *except* in the European periphery, suggesting a leader-follower reaction in the periphery that depended on who the dominant trading partner was, e.g. an ultra-protectionist United States lowering tariffs, a moderately protectionist France and Germany raising tariffs, or a free trade Britain standing pat (Blattman, Clemens and Williamson 2002).

### **Controls: Price Instability and the Specific-Duty Effect**

Inflations and deflations can have a powerful influence on average tariff rates. Recall that import duties were typically *specific* until modern times, and under such regimes abrupt changes in price levels change import values in the denominator, but not the legislated duty in the numerator, thus producing big equivalent *ad valorem* or percentage rate changes. The specific-duty effect has been explored most fully for the United States (Crucini 1994; Irwin 1998b: p. 1017), but also for Mexico (Marquez 2002: p. 307), and, more generally, for Latin America (Coatsworth and Williamson 2004a). Yet, the literature does not tell us why specific duties seem to be much more common in poor countries. One answer might be this: Honest and literate customs inspectors are scarce in poor countries, but they are essential for implementing an *ad valorem* tariff where import valuation is so crucial. So, legislators impose specific duties to minimize the “theft” of state tariff revenues by dishonest and illiterate customs agents. Another answer might be this: Poor countries export primary products, concentrating only on a few, thus exposing

themselves to price instability. Since export revenues and import expenditures are highly correlated, unstable export prices imply unstable tariff revenues. Specific duties tend to smooth out the impact of the export price instability on government finances.

### **Controls: Policy Packages and Real Exchange Rate Trade-Offs**

Few policies are decided in isolation. Indeed, there were other ways that governments could have improved the competitive position of import-competing industries, if such protection was their goal, and they explored many of these alternatives in the 1930s and in the ISI years that followed. Yet, they clearly understood these alternatives even before World War I. One powerful alternative involved manipulating the real exchange rate. If governments chose to go on the gold standard or to peg to a core currency, they got more stable real exchange rates in return (and an attractive advertisement for foreign capital). However, since protection via real exchange rate manipulation was forgone, tariff rates would have to go up to reclaim that protection lost. Did countries exploit this trade-off both during the years of gold standard commitment before World War I and during the interwar years when everybody went off gold?

## **6. The Political Economy of Tariff-Rate Setting: Empirical Analysis**

The potential explanations for tariff policies can be allocated to four main motives: infant industry, strategic trade policy, revenue needs, and scarce factor compensation. I take the infant industry development goal to be mainly a mid-late 20<sup>th</sup> century motivation. While the remaining three motives need not have been competing in the pre-modern era, we would still like to know which played the biggest roles, and in which periods and places. Elsewhere, an econometric attack has been launched on the problem two ways (Blattman, Clemens and Williamson 2002; Clemens and Williamson 2002; Coatsworth and Williamson 2004a; Williamson 2004): first, by treating the experience as comparative world economic history and thus exploring time series only (TS); and second, by exploring the cross-section variance across these 35 countries using time fixed effects (CS). The cross-section results are

transformed to remove serial correlation (using the AR(1) Cochrane-Orcutt correction), and the time series are estimated using random effects (RE) after likewise correcting for serial correlation (with a Baltagi-Wu estimator). What I report here summarizes the main findings.

Table 1 presents the time series and cross section results. Each of these contains five columns, necessitated by the fact that data coverage for inflation and the terms of trade is inferior to that of the other regressors. The right-hand side variables suggested by the previous discussion are the following (all but dummies in logs), allocated to the three central motives.

#### *Revenue Motive*

**Lagged Export Share**. This export/GDP ratio is a measure of export boom, where we expect booms in the previous year to diminish the need for high tariff rates this year -- if government revenues are a key motivation -- thus yielding negative coefficients in the regression.<sup>11</sup>

#### *Strategic Tariffs Motive*

**Lagged Partner Tariffs**. Strategic tariff policy suggests that countries should have imposed higher tariffs this year if they faced higher tariffs in their main export markets abroad last year.

#### *Stolper-Samuelson Scarce Factor Compensation Motive*

**Terms of Trade Index**. In the periphery, this terms of trade variable measures the price of each  $j$ th country's primary product exports ( $P_{xj}$ ) relative to the price of manufactures ( $P_m$ ) in world markets. In the core, the opposite is the case. If de-industrialization fears in the periphery were dominant, a positive coefficient should appear: price shocks in world markets that were good for the periphery's export sectors were bad for import competing sectors inviting compensation for the injured parties. Thus, the sign on  $\ln$  (Lagged  $P_x/P_m$ ) should tell us whether de-industrialization fears dominated in the periphery. In the European core and in land scarce Asia (like Japan), imports were dominated by foodstuffs and raw materials. Here,  $P_x/P_m$  speaks to an "invasion of grain" fear, whether wheat or rice, inviting compensation for the injured parties in this case too;

**GDP per capita** and **Schooling**, the latter the primary school enrollment rate. These variables are taken as proxies for skill endowments, with the expectation that the more abundant the skills, the more

competitive the industrial sector, and the less the need for protection, thus yielding a negative coefficient in the regression;

**Effective Distance**. The distance from each country to either the United States or the United Kingdom (depending on trade volume), adjusted by seaborne freight rates specific to that route. If protection was the goal, effective distance should have served as a substitute for tariffs, so the regression should yield a negative coefficient;

**Railway Mileage** added in kilometers. Poor overland transport connections to interior markets serve as a protective device. Railroads reduce that protection, requiring higher tariffs to offset the effect. Thus, the regression should yield a positive coefficient;

**Urbanization**, taken as share of population in cities and towns greater than 20,000. This urbanization statistic is taken to be a Stolper-Samuelson proxy for the lobbying power of urban capitalists and artisans in the periphery, thus yielding a positive coefficient in the periphery regressions.

### *Controls*

**Inflation and inflation-squared**. To the extent that countries used specific duties, inflation should have lowered tariff rates, thus yielding a negative coefficient. However, very rapid inflation might well have triggered a speedier legislative reaction with increases in specific duties, thus yielding a positive and offsetting coefficient on the squared term in the regression;

**Population**. Large countries have bigger domestic markets in which it is easier for local firms to find a spatial niche. Alternatively, bigger populations imply higher density, a fact which makes domestic tax collection easier and tariff revenues less necessary. In either case, the demand for protection should be lower in large countries, and the regression should produce a negative coefficient;

**Federal**, a dummy variable; if a federal system = 1, if centralized = 0. Federal governments had a stronger need for customs duties (joining members retained their tax authority), while centralized governments could better exploit internal revenue sources. Thus, the regression should report a positive coefficient;

**Colony**, a dummy variable; if a “colony” = 1, 0 otherwise.<sup>12</sup>

### **Comparative Tariff History Results**

Turning first to the time series in Table 1, we see that all coefficients have the expected sign with the exception of schooling (at least some of the time). Revenue motivation is revealed since export booms were associated with lower tariffs. Backlash and compensation forces are revealed too, and in many ways. Decreases in overseas transportation costs were associated with an offsetting rise in tariff barriers, and increases in the length of the domestic rail network were associated with a symmetric rise in tariffs. As geographic barriers evaporated, import-competing industries were compensated by higher tariffs. Also, an improvement in a country’s terms of trade in world markets generated a strong anti-global reaction. For the periphery, this took the form a de-industrialization reaction since an improvement in the relative price of their primary product export in world markets implied a fall in the relative price of imported manufactures, inviting a tariff-raising lobbying reaction by industrial interests at home. For the European core, this took the form of a grain invasion reaction, as a rise in the relative price of their manufacturing exports implied a fall in the relative price of their imported foodstuffs, inviting a tariff-raising lobbying reaction by landed interests at home. There is strong support for strategic tariff motives, since partner tariffs has a positive and significant coefficient throughout. The results for both schooling and urbanization depend on whether we control for inflation or not. Since including inflation reduces the sample size by almost half, however, we do not know if the different results for schooling and urbanization are due to the restricted sample or to the fact of controlling for inflation. In the full sample, an increase in urbanization was associated with an increase in tariffs, just as the Stolper-Samuelson theorem would predict, at least in the capital-scarce periphery. Tariff rates fell with increases in GDP per capita, a result consistent with modern surveys of global attitudes (O’Rourke and Sinnott 2001) but which I also find consistent with the Stolper-Samuelson theorem. Internal market size mattered in the predicted way: large countries had lower tariff rates. Finally, note that while inflation had the predicted effect

throughout the period, it was not statistically significant. Thus, while inflation had its predicted effects during wartime (Figure 1), it did not during peacetime.

Judging by the estimated elasticities, increases in trading partner tariffs were by far the most powerful determinant of increases in own tariffs over the full seven decades, at least on the economic margin. Changes in GDP per capita, population, and schooling had elasticities next in size. The combined influence of geography -- the sum of falling effective sealand distance and rising railway mileage -- also had high elasticities, but they still were only half that of partner tariffs. The same is true of the terms of trade index. Much to my surprise, the lowest elasticity reported in Table 1 is that attached to changes in the export share, suggesting that a revenue motive was not the dominant force *after* 1870, although it was the dominant force *before* that date (Williamson 2004).

Having analyzed both statistical significance and marginal economic importance, what about *historical* significance? To appreciate the difference, consider this example: Suppose that own tariffs were highly responsive to partner tariffs in the European periphery. Suppose also that own tariffs rose in the European periphery. Was this anti-global tariff rise due to changes in partner tariffs or some other force? We cannot answer this question without knowing how much partner tariffs changed. To pursue this example further, if partner tariffs barely changed, then we would have to look elsewhere for explanations of the historical rise in own tariffs *despite* the fact that for a *given* change in partner tariffs we see a large change in own tariffs. This case illustrates the difference between big marginal economic impact and big historical significance.

Why were tariffs on the rise nearly everywhere in the decades before 1900? Elsewhere, it has been shown that growing GDP per capita and population size were serving to *lower* tariffs everywhere, but these were overwhelmed by tariff-raising forces (Blattman, Clemens and Williamson 2002). The push for higher tariffs came mostly from two sources: first, a protectionist reaction as a compensation to import-competing industries as openness was thrust upon them by advances in transportation technology (both on land and sea); and second, domestic political economy forces associated with urbanization and schooling. Only in the European periphery do we observe partner tariffs making a major contribution to

the anti-global, tariff-raising dynamics during this period. Falling transportation costs certainly did contribute to rising tariff barriers in the European core, in the non-Latin European offshoots and in Asia. Yet, transport revolutions along the sea lanes had little impact on tariffs in Latin America and the European periphery, simply because the fall in overseas freight rates were more modest there. In addition, there is strong evidence of de-industrialization fears in the periphery, joining de-agricultural fears in the core. Overall, it appears to have been rising levels of railway penetration, schooling, urbanization (associated with changes in domestic politics) and improving terms of trade (at least up to the 1890s) that drove tariffs upwards world wide.

The revenue motive is certainly significant in the time series. Furthermore, revenue needs help explain the high tariff *levels* in the autonomous periphery. But *rising* revenue needs do not explain *rising* tariff rates in periphery up to 1900.

For the period from the 1890s to World War I, those anti-global domestic political economy and (dissipating) transportation forces pushing tariffs upwards were finally overwhelmed by surging pro-global forces: falling tariffs were associated with rising per capita incomes in Europe, their non-Latin offshoots and Latin America, carried in large part by mass migrations and capital exports. Once again, the terms of trade effect was operative, but now in a pro-global way. As the long run deterioration in the relative price of primary products (made famous by Raoul Prebisch) started after the 1890s, the relative rise in the price of imported foreign manufactures eased the competitive pressure on local industry in the periphery. During the interwar decades, the massive increases in tariffs were driven almost entirely by increases in partner tariffs, a force that seems to eclipse everything else.

### **Cross Section Results**

Now consider the cross-section results in Table 1. Here we control for two additional characteristics: colonial status—an indicator of autonomy over tariff policy; and federal status—an indicator of the decentralization of governance.

Three variables appear to have a different impact in time series relative to cross section: partner tariffs, schooling and urbanization. The partner tariffs variable is not significant in cross section and appears to be negative. How can this be consistent with a world in which, as we have seen, *changes* in a country's own tariff is closely associated with *changes* in its trading partners' tariffs? This cross sectional pattern suggests that initial conditions were such that, before reacting to *changes* in their partners' tariffs, countries began from a distribution in which high own tariffs just happened for other reasons to be associated with low partner tariffs and *vice versa*. This pattern would appear to fit Asia's initial conditions at the dawn of the 20<sup>th</sup> century: their own tariffs were forced to be low, either as colonies or as victims of gunboat diplomacy, while high tariffs prevailed in their American and European trading partners. The European periphery would appear to fit this characterization too: their backlash before World War 1 left them with high tariffs at a time when their trading partners in the European core had recently moved toward freer trade. This shows up in time series as a positive coefficient on trading partner tariffs, but the initial distribution of tariffs shows up in cross section as a negative coefficient. A similar argument can explain the predominantly negative (but insignificant) cross-sectional coefficient on urbanization. I have no explanation for the non-robust coefficients on the schooling variable.

What about historical significance? Why were tariffs so low before 1914 across Asia, the Middle East, and the European core? One reason was the large internal markets in these labor rich and land scarce economies. Another was the industrial competitiveness of the European core as captured by GDP per capita. Why were tariffs so high in both Latin and non-Latin European offshoots? It appears that smaller domestic markets in the Latin and non-Latin European offshoots made it harder for firms to survive in a niche without walls to protect them, and, of course, they were less competitive. While the revenue motive is certainly present, and while the signs and magnitudes on the export share coefficient are the same in cross section and time series, the influence is less powerful in the cross section.

## 7. Where Do We Go from Here?

This essay relies on a data base documenting average tariffs between 1865 and 1938 for thirty-five countries. While tariff policy for industrial Europe and the United States has been studied extensively, the rest of the world has not, and of our sample of thirty-five, the majority are from the periphery: ten are from the European periphery; another ten are from Asia and the middle East; and the remaining eight are from Latin America. The advantage of this large panel data base is obvious since it documents an enormous range of tariff policy experience, by period and by country.

What accounts for this immense variety in both cross section and time series? What were the underlying fundamentals driving tariff policy the world around? I think these questions should be at the top of the international economist's agenda. After all, even if we see high and rising tariffs out there in history, we need to know why they were high and rising if this history is to be used to understand the future of globalization in the present century. We have learned a fair amount in this essay: de-industrialization fears were a major determinant of tariff policy in the periphery before World War I, joining grain-invasion fears in the European core; revenue needs were an important determinant of tariff rates in the periphery, and especially for young republics; geography mattered, so that where and when the natural protection of distance and topography was conquered by transport technology, tariffs rose to compensate the import competing industries; and, finally, there was strategic tariff policy behavior at work everywhere after World War I.

## References

- K. Bagwell and R. W. Staiger (2002), *The Economics of the World Trading System* (Cambridge, Mass.: MIT Press).
- P. Bairoch (1989), "European Trade Policy, 1815-191." In P. Mathias and S. Pollard (eds.), *The Cambridge Economic History of Europe, vol. III* (Cambridge: Cambridge University Press).
- L. Bértola and J. G. Williamson (2003), "Globalization in Latin America Before 1940." In V. Bulmer-Thomas, J. Coatsworth and R. Cortés Conde (eds.), *Cambridge Economic History of Latin America* (Cambridge: Cambridge University Press, forthcoming).
- J. N. Bhagwati (2000), *Free Trade Today* (Princeton, NJ: Princeton University Press).
- C. Blattman, M. A. Clemens, and J. G. Williamson (2002), "Who Protected and Why? Tariffs the World Around 1870-1938." Paper presented to the *Conference on the Political Economy of Globalization*, Trinity College, Dublin (August 29-31).
- V. Bulmer-Thomas (1994), *The Economic History of Latin America Since Independence* (Cambridge: Cambridge University Press).
- M. A. Clemens and J. G. Williamson (2002), "Closed Jaguar, Open Dragon: Comparing Tariffs in Latin America and Asia before World War II," *NBER Working Paper 9401*, National Bureau of Economic Research, Cambridge, Mass. (December).
- M. A. Clemens and J. G. Williamson (2004), "Why Did the Tariff-Growth Correlation Reverse After 1950?" *Journal of Economic Growth* (forthcoming).
- D. Clingingsmith and J. G. Williamson (2004), "Indian De-Industrialization Under British Rule: New Ideas, New Evidence," paper to be presented to the Fifth World Congress of Cliometrics, Venice (July 8-11).
- J. H. Coatsworth and J. G. Williamson (2004a), "The Roots of Latin American Protectionism: Looking Before the Great Depression." In A. Estevadeordal, D. Rodrik, A. Taylor and A. Velasco (eds.), *FTAA and Beyond: Prospects for Integration in the Americas* (Cambridge, Mass.: Harvard

- J. H. Coatsworth and J. G. Williamson (2004b), "Always Protectionist? Latin American Tariffs from Independence to Great Depression," *Journal of Latin American Studies* (forthcoming).
- V. Corbo (1992), "Development Strategies and Policies in Latin America: A Historical Perspective," *International Center for Economic Growth, Occasional Paper No. 22* (April): 16-48.
- M. J. Crucini (1994), "Sources of Variation in Real Tariff Rates: The United States 1900-1940," *American Economic Review* 84 (June): 732-43.
- C. Diaz-Alejandro (1984), "Latin America in the 1930s." In R. Thorp (ed.), *Latin America in the 1930s* (New York: Macmillan): 17-49.
- A. Dixit (1987), "Strategic Aspects of Trade Policy." In T. F. Bewley (ed.), *Advances in Economic Theory: Fifth World Congress* (New York: Cambridge University Press).
- S. Engerman, S. Haber and K. Sokoloff (2000), "Institutions, Factor Endowments, and Paths of Development in the New World," *Journal of Economic Perspectives* (Summer 2000): 217-32.
- G. Grossman and E. Helpman (1994), "Protection for Sale," *American Economic Review* 84, 4 (September): 833-50.
- E. F. Heckscher (1919: 1991), "The Effect of Foreign Trade on the Distribution of Income." Translated and reprinted in H. Flam and M. J. Flanders (eds.), *Heckscher-Ohlin Trade Theory* (Cambridge, Mass.: MIT).
- D. A. Irwin (1998a), "Higher Tariffs, Lower Revenues? Analyzing the Fiscal Aspects of the Great Tariff Debate of 1888," *Journal of Economic History* 58 (March): 59-72.
- D. A. Irwin (1998b), "Changes in U.S. Tariffs: The Role of Import Prices and Commercial Policies?" *American Economic Review* 88 (September): 1015-26.
- C. P. Kindleberger (1951), "Group Behavior and International Trade," *Journal of Political Economy* 59 (February): 30-46.
- P. H. Lindert (1998), "Poor Relief Before the Welfare State: Britain versus the Continent 1780-1880," *European Review of Economic History* 2 (1998): 101-40.

- P. H. Lindert (2004), *Growing Public: Social Spending and Economic Growth Since the Eighteenth Century, Volume I* (Cambridge: Cambridge University Press).
- P. H. Lindert and J. G. Williamson (2003), "Does Globalization Make the World More Unequal?" In M. Bordo, A. M. Taylor and J. G. Williamson (eds.), *Globalization in Historical Perspective* (Chicago: University of Chicago Press).
- G. Márquez (2002), "The Political Economy of Mexican Protectionism, 1868-1911," PhD thesis, Harvard University (March).
- F. McGillivray, I. McLean, R. Pahre and C. Schonhardt-Bailey (2001), "Tariffs and Modern Political Institutions: An Introduction." In F. McGillivray et al. (eds.), *International Trade and Political Institutions: Instituting Trade in the Long Nineteenth Century* (Cheltenham, UK: Edward Elgar).
- J. S. Mill (1909), *Principles of Political Economy* (London: Longmans).
- S. S. Mohammed and J. G. Williamson (2004), "Freight Rates and Productivity Gains in British Tramp Shipping 1869-1950," *Explorations in Economic History* 41 (April): 172-203.
- M. Obstfeld and A. M. Taylor (2003), "Globalization and Capital Markets." In M. Bordo, A. M. Taylor and J. G. Williamson (eds.), *Globalization in Historical Perspective* (Chicago: University of Chicago Press).
- K. H. O'Rourke (1997), "The European Grain Invasion, 1870-1913," *Journal of Economic History* 57 (December): 775-801.
- K. H. O'Rourke and R. Sinnott (2001), "What Determines Attitudes Towards Protection? Some Cross-Country Evidence." In S. M. Collins and D. Rodrik (eds.), *Brookings Trade Forum 2001* (Washington, D.C.: Brookings Institute Press).
- K. H. O'Rourke and J. G. Williamson (1999), *Globalization and History* (Cambridge, Mass.: Cambridge University Press).
- R. Rogowski (1989), *Commerce and Coalitions: How Trade Effects Domestic Political Arrangements* (Princeton, N.J.: Princeton University Press).

- A. Smith (1776: 1976), *An Inquiry into the Nature and Causes of the Wealth of Nations* (Oxford: Clarendon Press).
- W. Stolper and P. Samuelson (1941), "Protection and Real Wages," *Review of Economic Studies* 9: 58-73.
- J. G. Williamson (1998), "Globalization, Labor Markets and Policy Backlash in the Past," *Journal of Economic Perspectives* 12 (Fall): 51-72.
- J. G. Williamson (2002), "Two Centuries of Globalization: Backlash and Bribes for the Losers," *WIDER Annual Lecture*, Copenhagen (September 5).
- J. G. Williamson (2004), "Explaining World Tariffs 1870-1938: Stolper-Samuelson, Strategic Tariffs and State Revenues," in R. Findlay, R. Henriksson, H. Lindgren and M. Lundahl (eds.), *Eli F. Heckscher, 1879-1952: A Celebratory Symposium* (Cambridge, Mass.: MIT Press, forthcoming).
- G. Wright (1990), "The Origins of American Industrial Success, 1879-1940," *American Economic Review* 80 (September): 651-68.

---

1 The average tariff rate is measured here as the share of customs revenues (import duties only) in total import values. It is part of the Williamson Tariff Project data base, used with collaborators in a series of papers (Bértola and Williamson 2003; Clemens and Williamson 2002, 2004; Coatsworth and Williamson 2004a; Blattman, Clemens and Williamson 2002; Williamson 2004). Atonie Estevadeordal and I are now constructing a data base documenting tariff *structure* in Latin America and much of the rest of the world between the 1820s and the early 1970s, the peak of ISI policy in the Third World.

2 I have also calculated (but do not report here) weighted tariff averages for the regional clubs in Figure 2, where weights are the country's total export share in regional exports or its GDP share. However, I prefer to treat countries as independent policy units regardless of size.

3 Of course, embargoes and soaring transport costs served to produce the same, or even bigger, protective effects.

4 The United States has always presented a problem to historians and economists alike. The canonical frontier economy with scarce labor and abundant resources, by 1900 it was also the world's industrial leader (Wright 1990) and a central market for the exports from the rest of the world. So, while the United States was certainly a rich European offshoot, I allocate it to the industrial core.

5 In 1831, only 8.6 percent of the males in the United Kingdom had the right to vote, and even in 1866, after the First Reform Act in 1832, the figure was still only 17.8 percent. (See Lindert 1998: Table 4.) These were, of course, the wealthy at the top of the distribution.

6 As late as 1940, the share of the population voting in Latin America was never higher than 19.7 percent (Uruguay), while the lowest figures were for Ecuador, Bolivia, Brazil and Chile (3.3, 4.1, 5.7 and 6.5 percent, respectively). Engerman, Haber and Sokoloff (2000: Table 2, p. 226).

---

<sup>7</sup> While the Ricardo-Viner-Cairnes specific-factor model yields results similar to the Stolper-Samuelson model – import-competing industries favor protection, Stolper-Samuelson thinking is probably more effective for long-run analysis.

<sup>8</sup> Industrial manufactures have been a rapidly rising share of Third-World output and exports. For example, for all “developing” countries, manufactures rose from only 17.4 percent of commodity exports in 1970 to 64.3 percent by 1994. Enough of the Third World is now labor-abundant and natural-resource-scarce so that the growth of trade has helped it industrialize. The classic image of Third World specialization in primary products is obsolescing. See Lindert and Williamson (2003: footnote 22).

<sup>9</sup> Caution suggests using the phrase “was associated with” rather than “fostered.” I press on without caution, but subject to this understanding.

<sup>10</sup> Except, of course, that they could keep the price of imported raw material intermediates low by giving such imports tariff concessions.

<sup>11</sup> In related paper on Latin America (Coatsworth and Williamson 2004a), capital inflows from Britain were added to the analysis for the years 1870-1913. This variable measured annual British capital exports to potential borrowing countries. Countries favored by British lending were shown to have had less need for tariff revenues and thus had lower tariffs. The variable does not appear here since our source does not report the period 1914-1938. Similarly, I do not report the gold standard effect here, although we now have the data to report the answer: being on the gold standard was associated with higher tariff rates, as predicted.

<sup>12</sup> New analysis not reported here replaces the “colony” dummy with a “tariff autonomy” dummy – to include Asian countries with unequal treaties – and the results are even stronger than those reported in Table 1.

**Table 1. Tariff Rate Determinants the World Around 1870-1938**

Dependent variable: In Own Tariff

Includes AR(1) Baltagi-Wu (TS) or Cochrane-Orcutt (CS) serial correlation correction

Specification	TS, country RE						CS, year dummies			
	1870-1938	1870-1938	1870-1938	1870-1938	1870-1938	1870-1938	1870-1938	1870-1938	1870-1938	1870-1938
Years										
Countries	All	All	All	All	All	All	All	All	All	All
<b>Revenue Motive</b>										
In Export Share	-0.0285 (-1.36)	-0.0832 (-3.02)	-0.0609 (-2.30)	-0.0463 (-2.07)	-0.0924 (-3.32)	-0.0397 (-1.37)	-0.0645 (-1.67)	-0.0601 (-1.60)	-0.0539 (-1.80)	-0.0753 (-2.02)
<b>Strategic Tariff Motive</b>										
In Partner Tariffs	0.2490 (9.06)	0.2507 (6.64)	0.2992 (8.45)	0.2246 (7.54)	0.2526 (6.67)	-0.0440 (-1.22)	-0.0983 (-1.82)	-0.0338 (-0.60)	-0.0648 (-1.76)	-0.0953 (-1.73)
<b>Stolper-Samuelson Scarce Factor Compensation Motive</b>										
In Terms of Trade Index				0.0798 (2.22)	0.1219 (2.68)				0.1037 (2.55)	0.1371 (2.66)
In GDP per capita	-0.1412 (-2.40)	-0.2227 (-2.86)	-0.1745 (-2.28)	-0.1810 (-2.95)	-0.2260 (-2.90)	-0.1025 (-1.48)	-0.1445 (-1.44)	-0.1228 (-1.24)	-0.1439 (-2.00)	-0.1435 (-1.45)
In Schooling	0.1640 (4.02)	-0.0560 (-0.82)	-0.0573 (-0.84)	0.1719 (4.30)	-0.0416 (-0.61)	0.0672 (1.49)	-0.3046 (-2.96)	-0.2993 (-3.01)	0.0548 (1.22)	-0.3053 (-2.99)
In Effective Distance	-0.0735 (-4.86)	-0.1072 (-4.95)	-0.1267 (-5.97)	-0.0584 (-3.76)	-0.1086 (-5.02)	-0.0169 (-0.74)	-0.0644 (-1.53)	-0.0514 (-1.28)	-0.0309 (-1.29)	-0.0616 (-1.48)
In Railway Mileage	0.0354 (3.38)	0.0639 (2.25)	0.0579 (1.98)	0.0347 (3.41)	0.0590 (2.08)	0.0055 (0.80)	0.0212 (0.93)	0.0190 (0.84)	0.0042 (0.56)	0.0219 (0.94)
In Urbanization	0.0478 (2.13)	0.0198 (0.30)	0.0013 (0.02)	0.0462 (2.10)	0.0235 (0.36)	0.0242 (0.99)	-0.0890 (-1.58)	-0.0989 (-1.66)	0.0211 (0.79)	-0.0787 (-1.41)
<b>Controls</b>										
In Population	-0.1084	-0.1716	-0.1441	-0.1172	-0.1721	-0.1224	-0.0433	-0.0545	-0.1302	-0.0504

	(-2.50)	(-3.35)	(-2.81)	(-2.58)	(-3.38)	(-2.85)	(-0.84)	(-1.12)	(-3.00)	(-1.00)
Federal						0.0100 (0.35)	0.0524 (1.45)	0.0585 (1.55)	0.0071 (0.25)	0.0509 (1.35)
Colony						-0.0033 (-0.05)	-0.1649 (-0.83)	-0.2797 (-1.58)	-0.0695 (-1.50)	-0.1515 (-0.79)
Inflation			-0.0004 (-1.45)		-0.0005 (-1.46)			-0.0004 (-0.90)		-0.0003 (-0.69)
Inflation Squared			0.0000 (2.45)		0.0000 (1.77)			0.0000 (0.44)		0.0000 (0.52)
Constant	2.7797 (4.75)	5.8022 (7.80)	5.4237 (7.45)	2.6333 (4.28)	5.1674 (6.68)					
N	2,138	1,169	1,300	1,951	1,169	2,067	1,116	1,238	1,889	1,116
Groups	35	30	35	35	30					
Avg. obs / group	61.1	39	37.1	55.7	39					
R-squared over:	0.224	0.271	0.25	0.251	0.266	0.144	0.203	0.195	0.149	0.211
DW original	0.222	0.242	0.251	0.227	0.245	0.083	0.107	0.115	0.083	0.111
DW transformed						1.972	1.979	1.948	1.982	1.987

t-statistics are in parentheses below each coefficient estimate. War years (1914-1918) omitted. Schooling is measured as the number of people per 10,000 below the age of 15 who are enrolled in primary school. The terms of trade = 100 in 1900.

**Source:** Blattman, Clemens and Williamson (2002), Table 3 (revised).

**Figure 1: Unweighted World Average Own Tariff, 35 Countries, %**

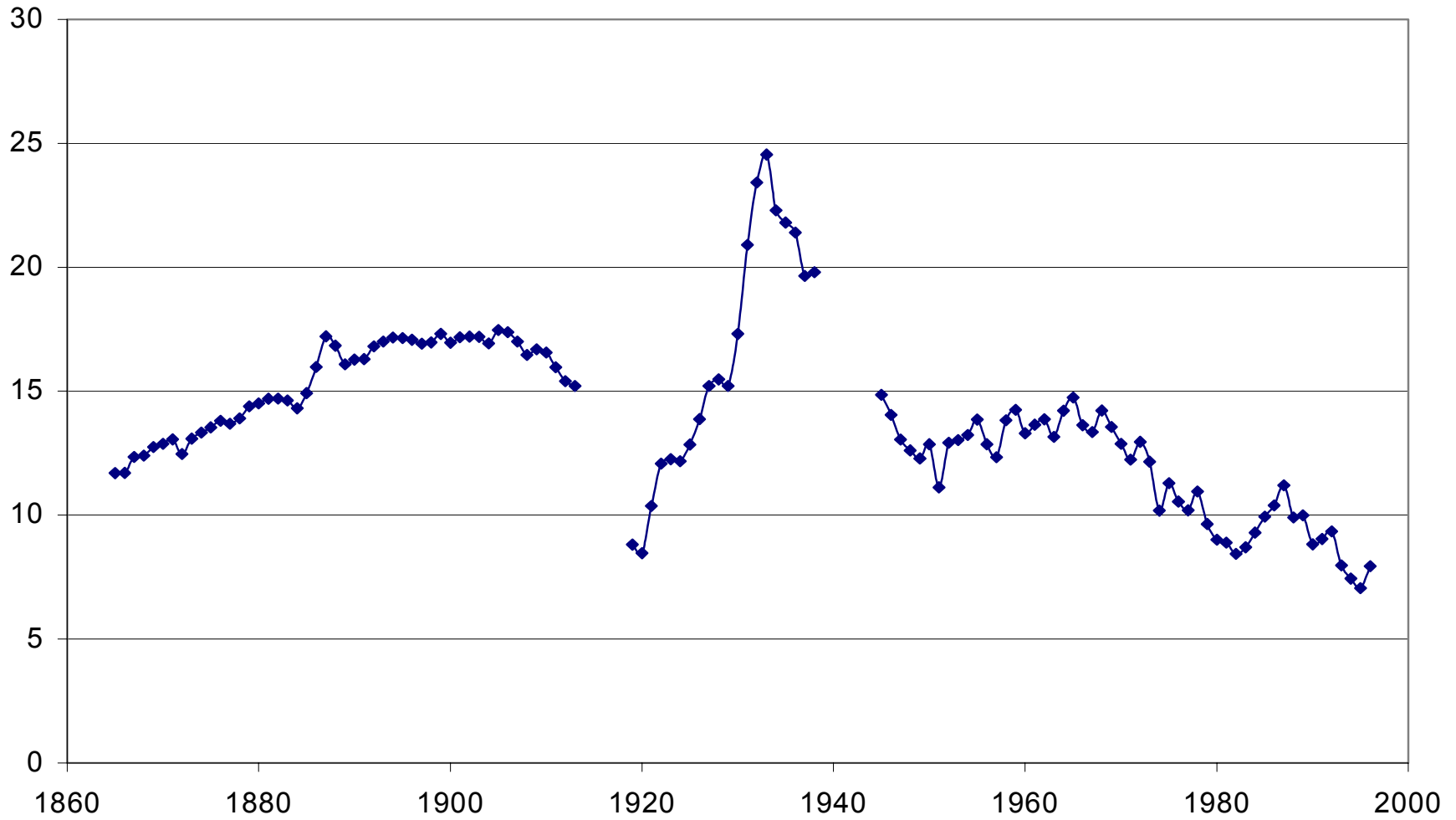
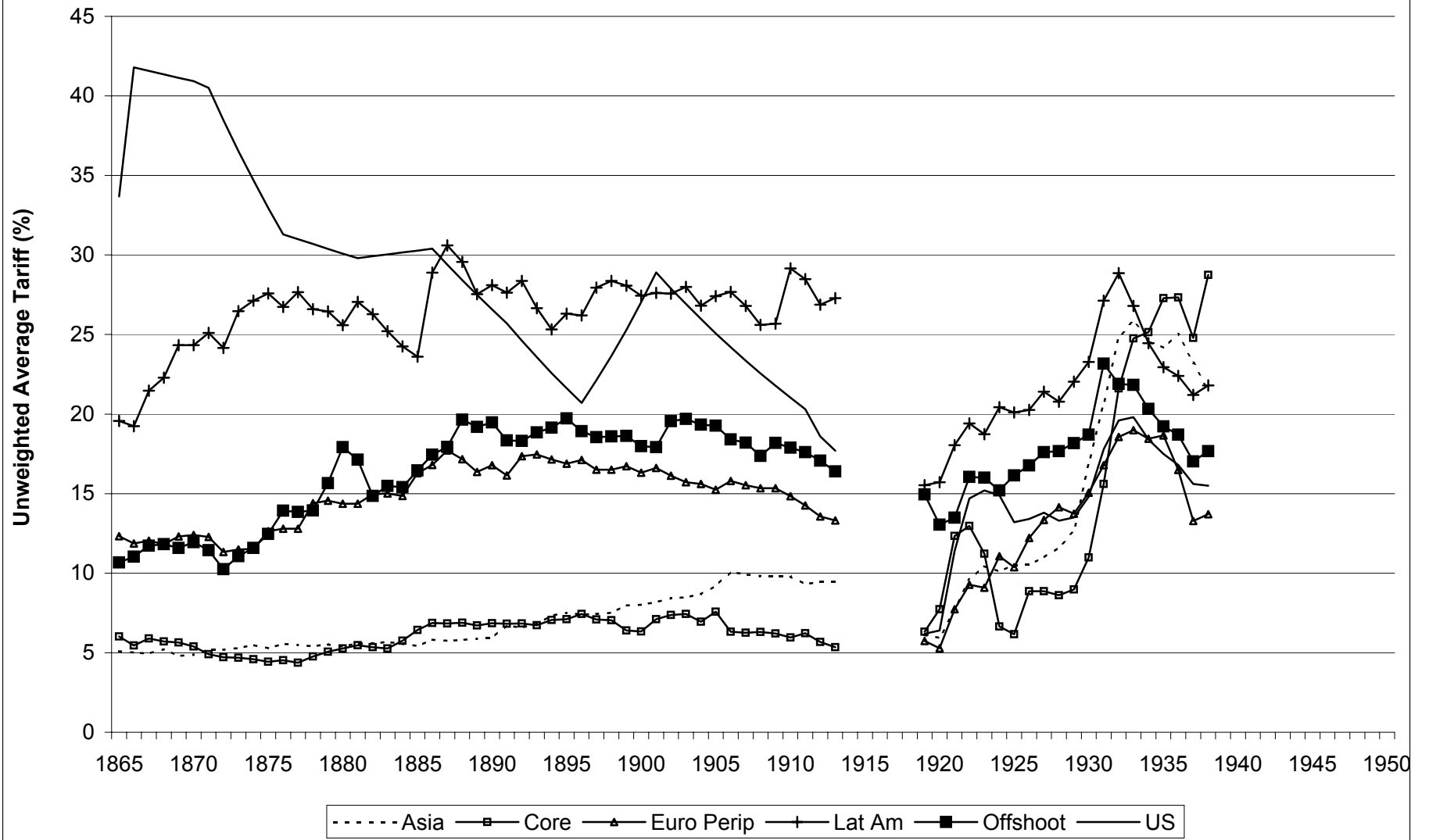
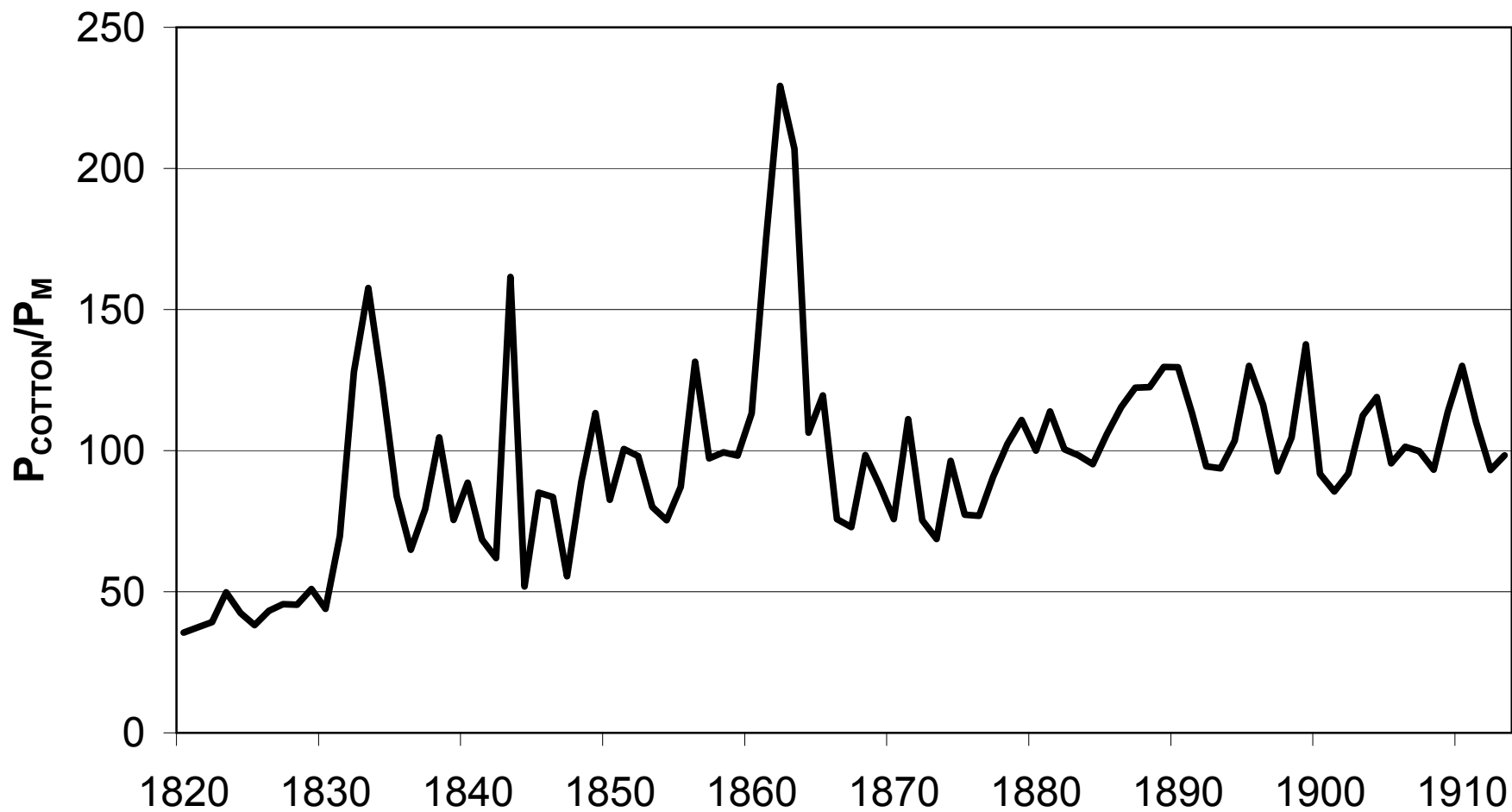


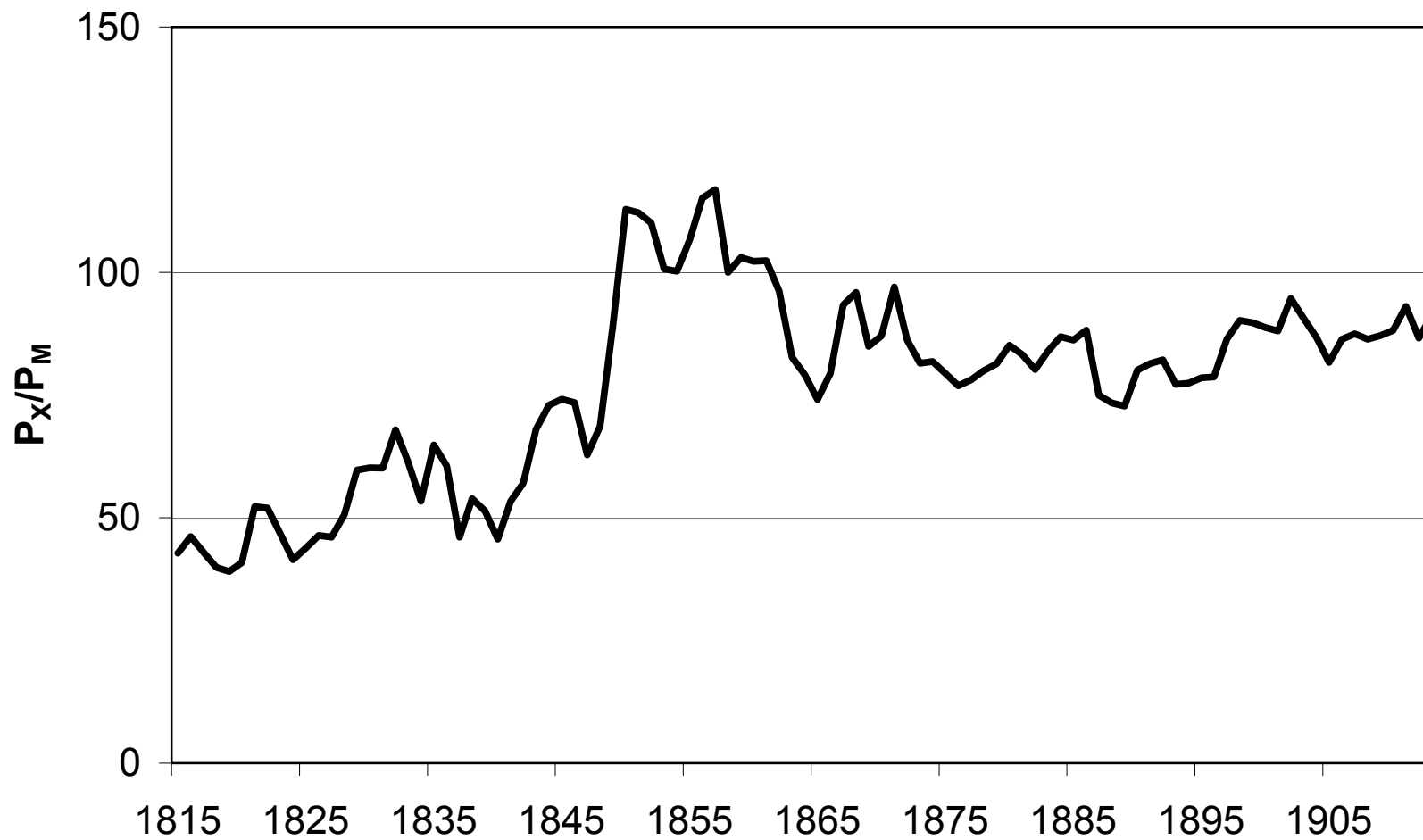
Figure 2 Unweighted Average of Regional Tariffs Before World War II



**Figure 3**  
**Egyptian Terms of Trade 1820-1913 (1880=100)**



**Figure 4**  
**Ottoman Terms of Trade 1815-1913 (1858=100)**



**Figure 5**  
**Latin American Terms of Trade 1820-1950**

