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NBER Reporter Online

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National Bureau of Economic Research (NBER), Cambridge, Mass.

*Suggested Citation:* Taylor, Alan M. (2005) : Globalization and new comparative economic history, NBER Reporter Online, National Bureau of Economic Research (NBER), Cambridge, MA, Iss. Winter 2005/06, pp. 18-21

This Version is available at:

<https://hdl.handle.net/10419/61878>

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# Globalization and New Comparative Economic History

Alan M. Taylor\*

Globalization is probably one of the most overused words in economics, as it is in many other realms of academic and public debate. Nonetheless, it cannot be avoided, if only because an understanding of the modern world requires us to confront it. Economically, its potential benefits seem all too apparent: for example, the fast growing industrializing economies of Asia are well connected to global markets for goods and capital. Conversely, no economically isolated country has prospered. As UN Secretary General Kofi Annan has pointed out: “The main losers in today’s very unequal world are not those that are too exposed to globalization, but those who have been left out.”

My recent research has focused on the causes and consequences of globalization, and is based on an interdisciplinary approach that straddles international economics, economic growth, and economic history. Methodologically, an historical approach has appeal because the global “economic laboratory” provides data not only across space (for cross-country comparisons) but also across time (from previous centuries to the present era). Historical data contain more variation than contemporary data alone, providing a wealth of information to be exploited. An emerging sub-field of New Comparative Economic History is devoted to exploring relationships in the very

long run in the economic environment (institutions, regimes, policies, and so on) and economic outcomes (growth, inflation, trade, capital movements, and so on).

In that vein, I have been working to address several important questions that help us understand economic globalization over the last 100–150 years, allowing us to understand the economic outcomes of today with a deeper perspective. In this research summary I highlight two strands of this work: the evolution of global capital markets and the evolution of world trade. These topics address such issues as: how can we measure the extent of globalization? What explains the rise and fall of globalization in different eras and in different countries? What are the costs and benefits of globalization?

## The Ebb and Flow of Global Capital

The forces of economic globalization appear particularly strong at present, but economic historians have been at pains to point out that we are now living in the second era of globalization, not the first. The first stretched from roughly 1870 until the start of World War I in 1914 and saw unprecedented integration in international market for goods, capital, and labor. Since a key issue for the intellectual enterprise of New Comparative Economic History is whether the past can provide useful lessons for the present, we have first to answer the question of whether this past era in any way resembles the present. A first challenge is to assess quantitatively when and where the extent of market integration in the past bore any resemblance to that seen

today.

Much of my own research, including a large project in collaboration with my fellow NBER Research Associate Maurice Obstfeld, has been concerned with this question of measuring market integration over time, with a focus on global capital markets.<sup>1</sup> There is no agreed upon method for evaluating market integration, although we have made some progress recently using nonlinear theoretical and empirical models to better estimate transactions costs in markets using high-frequency price data. For most applications both price and quantity criteria remain relevant. Each have their weaknesses — quantities may flow, and prices may converge, between locations despite large obstacles — and auxiliary assumptions and information must be carefully considered using either criterion. Yet what we find, broadly, is that global capital markets were just as impressive in their degree of integration a century ago as they are today. Some very simple quantity criteria can sum up the story.

For example, we can look simply at the ratio of the stock of foreign investment in the world to global GDP. Plotted over time, this series has a distinctive shape. It rose dramatically from 1870 to 1914, from 7 percent to 18 percent. From 1914 to 1950 it fell precipitously to just 5 percent. It rose slowly but stayed fairly low through the 1980s, and it then surged quickly in the last two decades of the twentieth century from 25 percent to 92 percent. The data suggest that we have indeed lived through two eras of globalization, and using this yardstick, the international movement of capital one hundred years ago was no less impressive

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than that witnessed today. The data also reveal two major reversals in the twentieth century: a steep decline in capital movement in the interwar years and a steep rise in the 1980s, creating a distinctive “U-shape” pattern when these data are plotted.

More formal tests are possible. For example, turning from stock data to flow data, we can look at the correlation of saving and investment rates across countries and across time. As the seminal work of Martin S. Feldstein and Charles Y. Horioka points out, a small open economy need not see any correlation of domestic investment and saving in the short run, so any correlation between the two may be considered *prima facie* evidence of capital market frictions.<sup>2</sup> We can gain some preliminary insight if we apply this methodology across time and space, using annual data from 1870 to the present. We suppose that investment is driven by where the best profit opportunities are, at home or abroad; saving is driven by consumption choices, which the household can in principle de-link from firm investment choices; and the difference between saving and investment is the current account. We need only to add the caveat that, in the long run, the two must be correlated: the long-run budget constraint of the economy dictates that “on average” the current account be in balance, allowing for initial wealth.

Econometric results show that the correlation between saving and investment almost never goes to zero — indeed, the long-run budget constraint tends to keep the measure between a minimum of 0.5 and a maximum of 1 for reasonable model simulations under a wide range of parameters. Yet this range still provides a useful yardstick. Sure enough, we find correlations in the data close to the low of 0.5, implying low frictions, in both eras of globalization: a century ago and today. We find high correlations close to the high of 1, implying high friction, in between: during the interwar

period and the Bretton Woods era (the latter being the period studied by Feldstein and Horioka). The familiar story of two globalizations — and the same “U-shape” — emerges again.

The “U-shape” pattern, which recurs in many other tests based on a variety of data and empirical methodologies, also conforms to the broad contours of the history of macroeconomic policymaking in the world’s major economies that are the main focus of the study (quite different patterns apply to developing countries). In the two eras of globalization, capital controls were notably absent and were typically frowned upon; in between, at the bottom of the “U,” capital controls became prevalent and came to be judged as the norm. How and why the history of policymaking followed these twists and turns then becomes an important question.

A central concept in international macroeconomics presents itself as a candidate explanation: the “trilemma.” The trilemma posits that economic policy cannot simultaneously achieve three goals — a fixed (or even managed) exchange rate, which may be desired for stability purposes; international capital mobility, which may be desired for access to foreign capital; and autonomous monetary policy, which may be desired for managing the business cycle or providing a lender of last resort. The logic is that under a fixed exchange rate and capital mobility, simple interest parity means that the local interest rate must equal the “world” interest rate, and monetary policy is rendered ineffective (or impossible). Something has to give if monetary policy is to be enabled: either the exchange rate must float or capital controls must be applied to suspend parity and admit interest differentials.

Prevailing narratives that tell the history of the world in four parts (that is, the macroeconomic history since 1870) build on the trilemma’s logic.<sup>3</sup> In the classical gold standard (1870–1914) monetary

policy was subordinated to the goals of capital mobility and a fixed exchange rate. In the interwar period, perhaps because of increasing democratic pressure, governments felt the need to use autonomous monetary policy; what gave was the peg (the collapse of the gold standard) or, in some cases, capital mobility. But the economic chaos and instability of the interwar period was intolerable to those planning the contours of the postwar global economy at Bretton Woods, and fixed exchange rates were still viewed as a *sine qua non* for a stable world economy. The new arrangements would sacrifice capital mobility to keep currencies on “adjustable” pegs to the dollar and yet preserve monetary policy autonomy. Still, this system could not endure: capital movements (often disguised) grew in the 1960s, the adjustability of pegs invited speculative attacks, and importing rising inflation from the U.S. anchor currency imposed costs on the other players. From 1971 onwards, the major economies have floated, adapting to (even encouraging) capital mobility, and resolving the trilemma in the only other way that preserves policy autonomy.

The trilemma sounds like a nice story, but what is its explanatory power and historical relevance? This hitherto unexplored question can be addressed by examining the degree of correlation between “local” and “world” interest rates, controlling for the type of exchange rate regime and capital control regime in operation. Tested in this way, the trilemma finds strong support in all historical eras from the Gold Standard to the present and under a wide variety of macroeconomic regimes. These findings provide an evidentiary base for our accounts of global macroeconomic history; they also give much-needed empirical weight to the idea of the trilemma, one of the most fundamental constraints that economic policymakers have all too often ignored, to their peril.

## The Rise and Fall of World Trade

The historical patterns of globalization seen in capital markets also carry over to goods markets and the history of international trade. Circa 1870, the ratio of world trade to GDP stood at 10 percent, rising to 21 percent by 1914, falling to 9 percent by 1938, and then rising to 27 percent by 1992: a first phase of globalization followed by that twentieth-century “U-shape” again. What can explain this rise and fall (and rise) of world trade? This has been another major goal in my research.<sup>4</sup>

To understand trade patterns in the long run requires that we adopt a theoretical model and estimate its parameters using long-run data. Two models stand out as leading contenders for this job. First, the Heckscher-Ohlin model, in which trade happens as a result of differences in countries’ factor endowments; second, the so-called gravity model, in which countries export differentiated products in proportion to their own country size and subject to distance-related transport costs.<sup>5</sup>

Getting the Heckscher-Ohlin model to match real world data has generated endless problems with postwar data: relative abundance (or scarcity) of a particular factor is a poor predictor of whether said factor will tend to be exported (respectively, imported) by any given country. Instead, the so-called factor content of trade goes the “wrong” way. And, even more perplexing, the volume of trade is far too small to be consistent with the model — the so-called paradox of “missing trade,” which can only be solved (or assumed away) theoretically with strong anti-trade axioms of home bias. It thus might be expected that with data from distant history, from the period 1870-1939, we might also encounter problems with the theory. This is broadly true, although we can find some weak support for the model as it applies to nat-

ural resources — arguably the factors that were uppermost in Heckscher and Ohlin’s minds.<sup>6</sup>

Turning to the gravity model, however, results in something more like an empirical success with historical data, as I have found in research with various collaborators. Again, this matches the empirical success of the gravity model using postwar data. Yet if our goal is to understand why trade rose and fell so markedly over time, an unadorned gravity model is not much help, since relative country sizes and distances change little over time. Instead we need to include other measures of policies, institutions, and the changing economic environment, and some obvious candidates stand out here for the late nineteenth and early-to-mid twentieth century: the rise and fall of the gold standard, a monetary arrangement which was believed to be a stimulus of world trade; the transportation revolution, which dramatically lowered long-distance shipping costs before 1914 through technological change in shipping and the construction of major canals; changes in tariff policy, particularly after 1914 when trade policy activism became common; and the impact of wars, particularly the two World Wars which affected a large fraction of the world economy.

The results of these studies give little hope that a monocausal explanation will suffice to explain the history of world trade. We find that the gold standard made a difference, and when two countries both go onto the gold standard their bilateral trade rises by 42 percent, which helps to account for much of the rise in trade before 1914, and much of its disappearance by 1939. There are direct parallels here, of course, with the contemporary debate over the impact of common currencies on trade, especially the long-run impacts of the euro. We also find that the decline of transport costs likewise made a big difference in the 1870-1914 period, explaining a large fraction of the trade boom; but after 1914, trade costs

rose (relative to wholesale prices) helping to turn the boom into a bust. Interwar tariff policy, especially in the 1930s, was also an important culprit in the collapse of world trade.

Finally, war matters. In very recent work, we have found that wars have a profound — and very persistent — effect on trade between countries.<sup>7</sup> In wartime perhaps 90 percent or more of trade between countries simply disappears; but even after the war ends, we find that it takes about ten years for trade to return to normal “peacetime” levels. This also helps to explain the precipitous drop in interwar trade and the slow post-1945 recovery: globally about 10 to 20 percent of world trade was probably destroyed by the “war effect” alone. We also find large “negative externalities” from war, in the sense that even neutral countries suffer a drop in trade when their trading partners enter a conflict. A speculative and rough estimate of the costs of such “lost trade” finds that they might be significant in welfare terms, of the same order of magnitude as the costs of lost human capital (measured by lost wages attributable to deaths or injuries). We have therefore been able to document a quantitatively important cost of war that is subject to large spillovers, and that has been little understood until now.

## Future Research

Historical research on the past evolution of the global economy sheds new light on the causes and consequences of economic integration and the problems and challenges it may cause for people, firms, and policymakers today and tomorrow. In recent years we have arrived at new insights using the systematic, quantitative, cross-country and cross-time approach of the New Comparative Economic History, but there remain many unanswered questions.

Understanding the frictions in the global economy is a central task for students of international trade and

finance in the past and present.<sup>8</sup> Methodologically, we shall continue to develop better techniques to assess how globalization has evolved, and how well integrated markets are at any given time.<sup>9</sup> We can then better understand how close we are to a hypothetical single market in goods and capital or how severe is “market failure.” These assessments also need to take into account the wide ranges of policies and institutions that have operated across time and space and which have encouraged or inhibited international trade and finance.

The latest research casts doubt on simple generalizations that globalization is always beneficial or always harmful; rather, its benefits appear to be greater in countries that climb up the ladder of institutional quality. In time we will develop a more detailed knowledge of how globalization has worked in different contexts. We will then be better placed to know whether the promises of prosperity held out by the process of globalization will be shared by only a few, or — as Kofi Annan and many others hope — by many.

<sup>1</sup> This research was recently published in book form: M. Obstfeld and A.M. Taylor, *Global Capital Markets: Integration, Crisis, and Growth, Japan-U.S. Center Sanwa Monographs on International Financial Markets* (Cambridge: Cambridge University Press, 2004). We gratefully acknowledge the financial support of the Sanwa Prize in International Economics and Financial Markets. The related background papers, all of which appeared as NBER Working Papers, were published as follows: M. Obstfeld, J.C. Shambaugh, and A.M. Taylor, “The Trilemma in History: Tradeoffs among Exchange Rates, Monetary Policies, and Capital Mobility,” NBER Working Paper No. 10396, March 2004, and *Review of Economics and Statistics* 87 (August 2005), pp.423–38; “Monetary Sovereignty, Exchange Rates, and Capital Controls: The Trilemma in the Interwar Period,” NBER Working Paper No. 10393, March 2004, and *IMF Staff Papers* 51 (Special Issue 2004):

pp.75–108; M. Obstfeld and A.M. Taylor, “Sovereign Risk, Credibility, and the Gold Standard: 1870–1913 versus 1925–31,” NBER Working Paper No. 9345, November 2002, and *Economic Journal* 113 (April 2003), pp.1–35; “Globalization and Capital Markets,” NBER Working Paper No. 8846, March 2002, in *Globalization in Historical Perspective*, M. D. Bordo, A. M. Taylor, and J. G. Williamson, eds. (Chicago: University of Chicago Press, 2003); A.M. Taylor, “A Century of Current Account Dynamics,” NBER Working Paper No. 8927, May 2002, and *Journal of International Money and Finance* 21 (November 2002), pp. 725–48; A.M. Taylor, “A Century of Purchasing Power Parity,” NBER Working Paper No. 8012, November 2000, and *Review of Economics and Statistics* 84 (February 2002), pp.139–50; M. Obstfeld and A.M. Taylor, “The Great Depression as a Watershed: International Capital Mobility in the Long Run,” NBER Working Paper No. 5960, May 1999, in *The Defining Moment: The Great Depression and the American Economy in the Twentieth Century*, M. D. Bordo, C. D. Goldin, and E. N. White, eds. (Chicago: University of Chicago Press, 1998)

<sup>2</sup> See M.S. Feldstein and C.Y. Horioka, “Domestic Saving and International Capital Flows,” *Economic Journal* 90 (1980), pp. 314–29.

<sup>3</sup> For an influential example, see B.J. Eichengreen, *Globalizing Capital: A History of the International Monetary System* (Princeton, N.J.: Princeton University Press, 1996).

<sup>4</sup> The relevant published papers are as follows, and all appeared first as NBER Working Papers: A. Estevadeordal, B. Frantzi, and A.M. Taylor, “The Rise and Fall of World Trade, 1870–1939,” NBER Working Paper No. 9318, November 2002, and *Quarterly Journal of Economics* 118 (May 2003), pp. 359–407; A. Estevadeordal and A.M. Taylor, “Testing Trade Theory in Ohlin’s Time,” NBER Working Paper No. 8842, March 2002, in *Bertil Ohlin: A Centennial Celebration, 1899–1999*, R. Findlay, L. Jonung, and M. Lundahl, eds. (Cambridge: MIT Press, 2002); A. Estevadeordal and A.M. Taylor, “A Century of Missing Trade?” NBER Working Paper No. 8301, May 2001, and *American Economic Review* 92 (March 2002), pp.383–93.

<sup>5</sup> For a thorough survey of these models see R.C.

Feenstra, *Advanced International Trade: Theory and Evidence* (Princeton, N.J.: Princeton University Press, 2004).

<sup>6</sup> The application of the Heckscher-Ohlin model to the late nineteenth century works rather better when its price predictions, rather than quantity predictions, are put to the test. See K.H. O’Rourke, A.M. Taylor, and J.G. Williamson, “Factor Price Convergence in the Late Nineteenth Century,” NBER Historical Working Paper No. 46, November 1996, and *International Economic Review* 37(1996), pp. 499–530; and K.H. O’Rourke and J.G. Williamson, *Globalization and History: The Evolution of a Nineteenth-Century Atlantic Economy* (Cambridge: MIT Press, 1999).

<sup>7</sup> R.Glick and A.M. Taylor, “Collateral Damage: Trade Disruption and the Economic Impact of War,” NBER Working Paper No. 11565, August 2005.

<sup>8</sup> See, for example, M. Obstfeld and K. Rogoff, “The Six Major Puzzles in International Finance: Is There a Common Cause?” NBER Macroeconomics Annual (2000), pp. 339–90; and J.E. Anderson and E. van Wincoop, “Trade Costs,” *Journal of Economic Literature*, 42 (2004), pp. 691–751.

<sup>9</sup> In this area, one of the most promising avenues appears to be the use of nonlinear models of price adjustment to infer transaction costs. See E. Canjels, G. Prakash-Canjels, and A.M. Taylor, “Measuring Market Integration: Foreign Exchange Arbitrage and The Gold Standard, 1880–1913,” NBER Working Paper No. 10583, June 2004, and *Review of Economics and Statistics* 86 (November 2004), pp. 868–82; M.P. Taylor and A.M. Taylor, “The Purchasing Power Parity Debate,” NBER Working Paper No. 10607, July 2004, and *Journal of Economic Perspectives* 8 (Fall 2004), pp. 135–58; A.M. Taylor, “Potential Pitfalls for the Purchasing-Power Parity Puzzle? Sampling and Specification Biases in Mean-Reversion Tests of the Law of One Price,” NBER Working Paper No. 7577, March 2000, and *Econometrica* 69 (March 2001), pp. 473–98; M. Obstfeld and A.M. Taylor, “Nonlinear Aspects of Goods-Market Arbitrage and Adjustment: Heckscher’s Commodity Points Revisited,” NBER Working Paper No. 6053, June 1997, and *Journal of the Japanese and International Economies* 11 (December 1997), pp. 441–79.