"Exchange Rate Regimes and Globalization: From International to National Standards"

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Section 1: Introduction

In this paper we explore the role of the exchange rate regime in the process of globalization. A longstanding view sees exchange rate stability as promoting international trade because of a reduction of the transaction costs of volatile exchange rates and a reduction of exchange rate risk. Similarly stable exchange rates are believed to promote international capital movements because of reduced exchange rate risk and because a pegged exchange rate serves as a commitment mechanism to constrain the actions of national policymakers.

The view that exchange rate stability – in its most extreme form, a fixed exchange rate system - is a pre-requisite for international economic integration is deep rooted among macroeconomists and policy makers. The heyday of this view was certainly at the time when the Bretton Woods treaty was signed. The breakdown of the international trading system in the 1930s has long been attributed to the rise of protectionism to offset the adverse consequences of beggar-thy-neighbor devaluations undertaken (Nurkse 1944). Indeed, this was the case made for the Bretton Woods system of current account convertibility, pegged (but adjustable) exchange rates and capital controls (Bordo1993).

By contrast, the experience of the pre WWI gold standard was presented as an example of how stable exchange rates and trade expansion could go hand in hand. This view had in fact a long and respectable tradition, precisely dating back to the pre war years. As is well known the exchange crises of the 1890s had bred – or served as a justification – for some of the protectionist measures that had been adopted in this period by many countries. Alphonse Allard's (a free trader and noted economist) famous pamphlet, *Le change, fossoyeur du libre échange* (exchange rates are the gravediggers of free trade) encapsulates very well one aspect of the ideology of the pre WWI years.

Bretton Woods and the GATT agreements, it is argued, were largely responsible for the postwar resurgence of international trade (Irwin 1993), but this was not the case for the international financial markets. In reaction to the perception that the 1930's hot money movements were an important contributor to the breakdown of the international payments system, capital controls were sanctioned by the Bretton Woods articles. It took the move to floating exchange rates and the elimination of capital controls in the 1970s, to reopen the capital markets for advanced countries and a similar outcome for many emerging countries a decade later.

Today the world is characterized by national monetary standards and managed floating exchange rates among advanced countries, a move towards the perfectly fixed arrangements of currency unions for Europe and a number of very small countries, currency boards for Argentina and the Baltic states and a still not successful move away from pegs and towards floating by many emerging countries (Calvo and Reinhart 2000).

The survival of the perception linking fixed exchange rates to globalization in more recent years is something of a challenge. The generalized float that has developed in the recent period is a companion phenomenon of the process of "globalization". To be provocative, it could almost be argued, that at first sight, while 19th century's globalization meant exchange rate stability, today's globalization means exchange rate fluctuations.

In a nutshell, we argue that the exchange rate regime has little role per se in the process of globalization. Globalization occurred in the pre 1914 era under fixed rates (the international monetary standard) and it has been progressing in the past three decades under floating rates (national monetary standards)

In both eras, globalization was compatible with the respective exchange rate regimes because in each case the advanced countries had domestic political and institutional mechanisms consistent with the maintenance of the regime. Under the pre 1914 gold standard, sound monetary and fiscal institutions were the norm consistent with adherence to the rule of gold convertibility. Under the managed float, representative democracy, responsible fiscal mechanisms, independent central banks and rules such as inflation targeting to pin down the nominal anchor have evolved. Moreover in both eras of globalization there was a sharp contrast between the experience of the core (advanced) countries and the peripheral (emerging) countries. In each case, the peripheral countries relied on the currencies of the senior currencies (to invoice trade and to issue international securities) because they had not developed the strong domestic institutions and stable polities requisite to doing it themselves.

In the years between WWI and the 1970's, as has been well documented (see Obstfeld and Taylor 1998, Eichengreen 1996), other factors (such as a changing political consensus which attached greater importance to policy independence), made the international monetary standard incompatible with globalization and led to the proliferation of protection and capital controls. The re-emergence of globalization under floating in turn required the development of domestic political and institutional mechanisms necessary to reduce the controls and make national monetary standards a true option.

In the rest of the paper we document the evolution of exchange rate arrangements in section 2. « Globalization » is an elusive concept. In the empirical literature, two main ways have been used to measure it. One is the Feldstein Horioka test of financial

integrations, and the other is the gravity model of international trade. Both approaches allow for a fairly natural way to handle the interrelations between exchange rate stability and international integration. We consider the insights from these two approaches in turn in section 3 and 4.

In section 5 we present some historical evidence based on the currency denomination of international currencies for what we call the "Maturity" hypothesis - - that mature countries are able to issue international securities in terms of their own currencies whereas emerging countries need to do so in terms of the senior currencies. This holds under both international and national monetary standards.

Section 6 concludes with some lessons from history.

Section 2: Exchange Rate Arrangements 1880 - 2000

To be written

Section 3: Feldstein Horioka Tests

Feldstein-Horioka (1980) tests measure the degree of financial integration by examining the relationship between saving and investment. These tests were later used by Bayoumi [1990], Eichengreen [1992], Obstfeld [1995], Jones and Obstfeld [1997], Bayoumi [1997], Taylor and Obstfeld [1998], and Flandreau and Rivière [1999] to assess the progresses of financial integration over the very long run. Based on samples of increasing sizes that are heavily loaded with OECD countries (except for Flandreau and Rivière [1999] who consider several emerging countries for the recent period), these tests portray an evolution of international financial integration where the pre 1914 period and the recent period of float stand out as comparatively much more integrated than the inter-war and the dollar based Bretton Woods systems. Including emerging countries in the most recent period qualifies this conclusion however making the recent globalization appear as a more strictly OECD phenomenon (Flandreau and Rivière [2000]).

Since these tests are largely accepted in the literature, and since their empirical results have by and large been stable, they constitute a natural place to start. Our strategy is the following: rather than seeking to make pair-wise comparisons between regimes, as has been done so far (e.g. comparing pre 1914 to inter-war, Bretton Woods, or recent float) we seek to identify within given periods, sub groupings of countries that have been characterized by arrangements implying exchange rate stability. The goal of this exercise is to see whether these sub groupings succeed in achieving significantly higher levels of integration than the sample at large. The intuition is that, if exchange rate stability is an instrument meant to unlock, for participating countries, one's current account constraints, then we should observe lower betas (for sub-groupings) than for the sample at large.

Results are reported in table 1a and 1b. The data used is from Flandreau and Rivière (1999).[1] The estimation technique exploits the panel of country-years in a different way than has been done in the previous literature. While previous work has focused on "between" estimates (i.e. regressions on the average saving and investment for each country) we use here "within" estimates (i.e. regressions that look at the variations of the saving investment relation). The difference between the two estimates may be significant especially in periods of volatile current account. Working with "between" estimates may in that case produce an upward bias in the beta coefficient since average saving and investment will be closer to each other. What is at hand here is the need to measure the ability of countries to finance change in their current account position. Table 1.b illustrates this and shows how working with "between" estimates has led to an exceedingly high measure of financial disintegration for the inter-war years (without changing the basic conclusion of a way less integrated inter-war period), while they

[1] . The sample in Flandreau and Rivière encompasses earlier samples and makes a number of corrections. For instance, French current account data have typically been based on Villa (1993) who constructs it as a residual. Direct estimation of France's balance of payment by Lévy-Leboyer ( )is a more reliable source,which has the advantage of not showing France as a frequent importer of capita l before 1914, which is was not. Full details in Flandreau and Riviere (1999). The countries included in the sample1880-1996 are Argentina, Australia, Canada, Denmark, Finland, France, Germany, Italy, Japan, Norway, Portugal, Spain, Sweden, Uk,US. For the period 1951-1996 we also include: Austria, Belgium, Brazil, Greece, Ireland, Iceland, Luxemburg, Switzerland, Mexico, Korea, Indonesia, Malaysia and Thailand.

portray an exceedingly high level of financial integration for the recent period suggesting that the move towards globalization is perhaps less clear cut than commonly argued.

The results that are of interest to us are reported in Table 1.b. They show that for the pre WWI period, restricting our attention to the countries that strictly adhered to gold do not seem to have been able to achieve a significantly greater degree of financial openness than those that didn't. The estimated betas for both the entire population and the restricted sample shows figures that are very close to each other. The inter-war years reveal an interesting pattern: we see that countries that adhered to gold, as well as members of the sterling zone, actually achieved less integration than the international average reported in Table 1.a. The straightforward interpretation of this is probably that members of the inter-war gold standard could only retain membership at the expense of capital controls thus actually achieving less integration than the sample at large. A similar result is in fact obtained for the Bretton Woods period, probably for the very same reason. Finally, moving to the recent experience we see that ERM membership did succeed in a non-negligible way in reducing the beta parameters compared to the entire sample. At the same time, since we know that the convergence to the Euro was accompanied by a companion capital movement liberalization within European countries, it is not clear whether the greater integration is due to exchange rate stability or to lower controls.

Table 1.a. Financial Integration: whole sample

	CLASSICAL GOLD STANDARD (1880-1913)	INTERWAR (1918-1939)	BRETTON WOODS (1945-1973)	GENERALIZED FLOAT (1974-1996)
Pooling	0.460 (0.030)	0.768 (0.027)	0.863 (0.019)	0.339 (0.026)
Within	**0.437 (0.030)**	**0.641 (0.030)**	**0.784 (0.022)**	**0.681 (0.106)**
Between	0.482 (0.184)	0.971 (0.082)	0.944 (0.090)	0.224 (0.035)

Source: Flandreau and Rivière (1999)

Table 1.b. Financial Integration: Within estimates of Sub sample restrictions

	Gold Standard (1880-1913)	Inter-war (1918-1939)	Bretton-Woods (1945-1973)	Generalized Float (1974-1996)
Within – restriction to Gold Standard	**0.475 (0.037) nob = 433**	**0.876 (0.082) nob = 59**		
Within – restriction to Sterling Zone		**0.804 (0.088) nob = 63**		
Within – restriction to G. S. + Gold Bloc		**0.864 (0.056) nob = 82**		
Within – restriction to Gold Bloc		**0.676 (0.060) nob = 19**		
Within – restriction to Dollar Standard			**0.809 (0.030) nob = 372**	
Within – restriction to ERM				**0.502 (0.079) nob = 196**

Source : see text. Nob = number of observations.
Remark: gold bloc does not contain enough observations 1918-1939.

One forceful conclusion of this section is that fixed exchange rate regimes appear to have been by no mean an instrument for financial integration. Financial integration has been directly related to the presence or absence of capital controls, and these controls have been used in both periods of fixed and flexible exchange rates. The pre 1914 period stands out as one that was exceptionally free from these controls rather than one whose globalization was related to exchange rate stability since, as observed, the restriction of the integration coefficient to those countries that did not float is not higher than the one obtained by the entire sample. In fact, it is quite striking to see that even with fixed exchange rates, even with no capital controls at all, the degree of integration achieved was not perfect. In other words the trend towards exchange rate flexibility is a quite distinct movement from the more specific issue of international financial integration.

3. Exchange Rate Regimes and Trade Globalization

The second type of evidence we consider here on globalization and exchange rate regime is the relation between exchange rate regimes and trends in the international trading system.

The effect of exchange rate regimes on trade integration is notoriously difficult to sign. From a theoretical point of view it is not clear why one should expect a huge cost from

international exchange rate variations given that cover instrument exists. With appropriate hedging products, importers and exporters should be by and large indifferent to the exchange rate regime. Empirical tests aimed at determining the consequences of exchange rate gyrations have been extensively used, often with quite different results (will have to survey in final draft). Here again, a serious obstacle when identifying a clear cut relation between international trade and exchange rate volatility comes from the fact that the past 30 years have witnessed both a considerable expansion of trade and various bouts of exchange rate volatility. Thus depending upon the decade under scrutiny, one may get different conclusions. This in itself would point towards a similar message to the one derived from the Feldstein Horioka tests: that globalization does not « prefer » a fixed or flexible exchange rate system.

Before we proceed with this conclusion however, we must consider the evidence from gravity equations, which have produced a less mixed message on this issue. Gravity equations are used to determine the effect that a number of variables - typically understood as transaction costs - have upon bilateral trade, resulting in more or less trade than is predicted by the pure forces of « gravity », i.e. the effect of market size and distance that respectively favor and hinder trade. Exchange rate volatility has sometimes been used in such regressions, focusing on various epochs. Pioneering work has examined the inter-war record (Eichengreen and Irwin (1995), Maurel (1995) before researchers turned their attention to other eras. Post WWII estimates were obtained by Rose (2000), while figures for the pre 1914 period are derived in Flandreau and Maurel (2000), Lopez and Meissner (2000). The evidence for all these eras has systematically pointed to a negative association between exchange rate volatility and international trade.

There are however two limitations that suggest that one should not take the effect of exchange rate volatility as exceedingly important. The first is the fact that in all these exercises, the estimated effect of volatility on bilateral trade, while always significant and negative was typically fairly small. Flandreau and Maurel for instance compare the effect of protection and exchange rate volatility before 1914 and find the former to be typically smaller than the latter. The second limitation is that in effect, the exact significance of the

negative association between exchange rate volatility and trade might in fact be operating the other way round. That is, countries with significant trade relations might be willing to coordinate their exchange rates, and will thus display less relative exchange rate volatility. In other words, the mild negative association in gravity equations might come from greater trade causing lesser exchange rate volatility, rather than the other way round.

Section 5: The Maturity Hypothesis: Senior Vs Junior Currencies

Before 1914, the world was on the international gold standard. Today we have moved from an international monetary standard to a national monetary standard and floating exchange rates. One century ago the signature of a financially mature country was to adhere to gold convertibility, and peripheral countries were castigated for floating. Today by contrast, while financially mature countries tend to float, the periphery still seeks to engage in pegs (to Calvo and Reinhart 2000). The big change that has occurred has taken place at the core of the international monetary system.

We seek to explain this transition by looking at the way currencies are treated in international financial markets. It is well known that before 1914, all currencies were defined in terms of specie. Yet not all countries credibly adhered to specie convertibility. Hence when issuing debt in foreign markets such countries " junior countries" were pressed to denominate their debts explicitly in terms of specie and also in many cases in terms of the specie standard of the lender's currency (i.e. sterling, francs or marks). This dichotomy can also be observed in the dynamic evolution of monetary standards.

We argue that the development of monetary standards differed between core and peripheral countries. In core countries, the evolution of monetary standards is rooted in the development of domestic political/institutional mechanisms. These countries have experienced a process of consolidation of their domestic institutions (e.g. the development of representative democracy, responsible fiscal mechanisms, and independent central banks) which led them to transit from specie based to polity based

monetary standards (i.e. the nominal anchor is based on inflation targeting and other monetary rules instead of specie convertibility). By contrast peripheral countries have had to rely on external pegs, for lack of sufficiently strong domestic institutions and stable politics and thus have continued to rely on senior currencies. As countries transit from periphery to core status, they develop what we call domestic monetary standards.

Our central conjecture is that the move to generalized floating reflects both a change in the institutional foundations of mature countries and an increase in their number. We shed light on this hypothesis by examining the currency denominations of international securities issued in the global capital markets. We view the ability to issue sovereign debt or other instruments denominated in ones own currency as a measure of fiscal and financial maturity.

To address this issue we have assembled a data base from Burdett's Official Intelligence over the period 1880-1933 that allows us to distinguish the currency denomination of international securities listed on the London Stock Exchange by a large number of countries. The manual gives information on the location and size of the offering, the time to maturity, the discount from par of the IPO, the IPO yield and the currency (in most cases) in which the security was issued and payable.

A preliminary analysis reveals that only 6 countries issued securities in terms of their own currencies before 1914(England, France, Germany, Netherlands, Belgium and the United States). We conjecture that this number expanded somewhat in the inter-war and again in the postwar but that it is confined to the most advanced countries.

We hope to then isolate the determinants of currency denominations of international financial assets in terms of a set of macroeconomic fundamentals and political institutional variables.

Section 6: Conclusion

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