Why Do Countries Peg the Way They Peg?
The Determinants of Anchor Currency Choice[1]

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PRELIMINARY DRAFT; COMMENTS WELCOME

Abstract

Conditional on choosing a fixed exchange rate regime, what determines the currency to which countries peg? We test various hypotheses using de facto exchange rate regime classifications. Our sample covers a broad range of countries for the period 1980 to 1995. We emphasize that network externalities play a role in peg choice, and we argue that the composition of anchor currencies in the international monetary system is path dependent. We also control for capital flows, cultural ties, original sin, the symmetry of shocks and credibility problems. At the same time, with our multinomial logit model, we control for factors that determine whether to peg or float.

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I. INTRODUCTION

In the past few decades, much has been written about the conditions under which countries choose, or should choose, to peg or to float. More recently, several papers have started to analyze why countries float the way they float (Hausman, Panizza, and Stein, 2001; Calvo and Reinhart, 2002). Thus far, however, little empirical work has been offered on why countries peg the way they peg. That is, while we know something about the determinants of the choice between pegs and floats, we know very little about how countries choose between different anchors for those pegs.[3] If the transaction costs associated with exchange rate volatility decrease trade as Frankel's (2003) survey suggests, then the geography of the international monetary system may be a very important determinant of the size and direction of global trade and investment flows.

In this paper, we aim to first describe the historical evolution of anchor choices for pegs, and then to identify the factors that explain these choices. The record shows that, around 1950, countries chose from at least a half dozen anchor currencies. But strikingly, virtually all countries that have chosen to peg their currencies in some form to another currency have converged over the last fifty years to using either the U.S. dollar or the euro as anchors. We find that a key factor explaining this convergence is the existence of network externalities, which arise because the benefits of using a particular anchor increase with the amount of trade with countries that use the same anchor. As particular anchors grow in popularity, it seems that usefulness of other options diminishes leading to a strong bandwagon or snowball effect.

Using a panel multinomial logit framework, we find the effect of network externalities to be robust to different time periods, as well as to the inclusion of various other factors that are likely to influence exchange rate regime or anchor choice. Among the determinants of regime choice per se, we include standard factors such as trade and capital account openness, sensitivity to real and nominal shocks, reserve cover, and the strength of governments. Among the determinants of anchor currency choice, we include, apart from network benefits, the symmetry of shocks, the currency denomination of debt, and information on legal origins as a proxy for shared cultural factors. Our anchor data are derived from the *de facto* exchange rate regime classification recently developed by Reinhart and Rogoff (2004), and hence we follow the increasingly standard practice of avoiding the use of reported regimes.

The significance of network externalities as a major determinant of anchor currency choice implies that aggregate regime choice is non-linear, giving rise to possible multiple equilibria.

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[3] An extensive literature of econometric studies on pegs versus floats exists. Previous work, in chronological order includes, but is not limited to: Dreyer (1978); Heller (1978); Holden, Holden, and Suss (1979); Cuddington and Otoo (1990); Savvides (1990); Edwards (1996); Bernhard and Leblang (1999); Bayoumi and Eichengreen (1997, 1999); Rizzo (1998); Frieden, Ghezzi, and Stein, (2000); Masson (2001); Poirson, (2001); Juhn and Mauro (2002) Alesina and Wagner (2003).

In addition, it implies that the choices of a small number of countries can have large effects on the geography of the international monetary system, something which should be taken into account when advising a country on its appropriate exchange rate regime. The evidence for spillovers seems clear and, hence, because of initial, possibly random or idiosyncratic conditions prevailing in one important country, a group of countries may lock into using a particular exchange rate anchor, even when later it might be optimal for some portion of the group to collectively use another anchor instead. For example, east Asian countries have mainly chosen the dollar as their anchor, while it may be preferable for them based on trade and investment flows to form a Yen bloc, or perhaps a bloc based on a basket of east Asian currencies. Another example of a possible coordination failure is the popularity of U.S. dollar anchors in many former Soviet Union countries, most of which trade more with the euro area than with the United States, and therefore might benefit from a coordinated switch from a dollar to a euro anchor.

We begin this paper by describing the historical evolution of anchor choice. We then discuss the economic and political factors that one would expect to determine the choice of regime and of anchor currency. Next, we present our empirical methodology and results and an estimate of the strength of network externalities. We end by summarizing and discussing the policy implications of our findings.

II. The Evolution of Anchor Currency Choice

A. Measuring Anchor Currency Choice

In order to determine when countries use a certain anchor currency for their exchange rate regime, and which anchor they use, we use newly available data from Reinhart and Rogoff's (2004) *de facto* ("natural") exchange rate regime classification.

A stream of recent research has highlighted that the exchange rate regime a country claims to follow (as reported in the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions*) often differs from the regime actually in place. In recognition of this fact, several *de facto* exchange rate regime classifications have been developed as an alternative to the IMF's *de jure* classification (e.g., Ghosh, Gulde, Ostry, and Wolf, 1997; Bubula and Ötker-Robe, 2002; Levy-Yeyati and Sturzenegger, 2003; Reinhart and Rogoff, 2004). [4]

We choose to use the Reinhart-Rogoff (henceforth RR) classification largely because it is the only de facto classification that contains easily accessible information on anchor currencies. That is, if a country is classified as having a pegged exchange rate regime, the "chronologies" of the RR-classification describe to which currency a country pegs. To our knowledge, this dataset is the first to present this information in a systematic way for de facto

[4] The IMF itself also moved to a de facto classification system in 1999, the details of which are reported in IMF (1999).

pegs.[5] We undertook the electronic coding of anchor currency choice based on the written descriptions included in the working paper version of Reinhart and Rogoff. Appendix I explains in more detail how the de facto anchor was determined.

In addition, the RR classification has three other advantages over other de facto regime classifications. First, the RR classification is the most longitudinally complete data set, and allows us to follow the experience of over 150 countries over more than 40 years. Second, Reinhart and Rogoff use information on parallel market exchange rates, where appropriate, to determine the actual (*de facto*) rather than the stated (*de jure*) exchange rate policy. Finally, the RR classification distinguishes a “freely falling” category. This is important because the “free falls” are usually associated with financial crises, hyperinflations or the exit from an unsustainable peg. Including such episodes in the floating category could potentially confound the determinants of an actual float.

Like other de facto classifications, the RR classification distinguishes between different degrees of “hardness” of pegs, depending on whether the volatility of bilateral exchange rates is below a certain threshold.[6] Appendix I summarizes the algorithm used to determine these different types of pegs (e.g., currency boards, pre-announced pegs, de facto pegs, crawling pegs, and crawling bands).

For our purposes, we define “pegs” as anything from a moving band that is narrower than +/- 2 percent to a country with no separate legal tender currency (i.e., anything from category 1 through 11 in Table 1 in Appendix 1).[7] We define “floats” as consisting of either managed floating or freely floating regimes. Following Reinhart and Rogoff (2004), we also include “freely falling regimes” as a separate category.

[5] While the IMF de jure classification does contains information on anchor currencies, we decided not to use this classification since it classifies many de facto pegs as intermediate regimes or floats, and therefore contains much less information on anchor currency choice.

[6] A criticism of this methodology is that exchange rates may appear “pegged” due to the mere absence or symmetry of shocks, rather than due to a policy intention to peg the exchange rate. However, if an exchange rate consistently appears to be pegged (or anchored) to one currency, but not to another, one may ask whether this absence of variability is really a coincidence or whether there is an unobservable policy being followed. Moreover, if it were the case that there were no intentional policy and our results were consistent with an optimal currency area line of argument, then we might argue that there would be little economic loss in making the exchange rate arrangement more formal through an announced peg or similar.

[7] As part of our robustness checks, we eliminate the countries with a fine classification between 9 and 11 from our pegs. That is, we no longer considered wide crawling bands, de facto crawling bands, and moving bands as “pegs”

B. Stylized Facts on Anchor Currency Choice

Virtually all countries that have chosen to peg their exchange rates in some way to another currency have converged over the last fifty years to using either the U.S. dollar or the euro as their anchor currency (see Figure 1).

Between 1940 and 1972, the U.S. dollar was the most popular anchor currency chosen by advanced countries, followed by the British pound and the German mark. For developing countries, the predominant anchor currencies were the U.S. dollar, the British pound, and the French franc, with the latter choices largely being determined by colonial history and the consequent economic relationships.[8]

With the colonial dissolution of the 1950s and 1960s and later the collapse of Bretton Woods, the anchor currency distribution changed considerably. The U.S. dollar declined in popularity (especially in advanced countries), and the British pound disappeared entirely from the menu of anchor choices. While the breakup of Bretton Woods did give rise to an increased number of free and managed floaters, the majority of advanced countries ended up tying their currency in some form to the German mark, and later the euro. Developing countries largely switched to using the U.S. dollar as anchor, except the group of former French colonies that continued to peg to the French franc.

While the overall distribution of anchor currencies did not change much in the 1990s, apart from the introduction of the euro in 1999, the behavior of transition economies during this period is illustrative for the dynamics of anchor currency choice. Following the breakup of the Soviet Union in the early 1990s, most transition economies initially fell in the “freely falling” category for several years, and then increasingly started tying their currencies in some form to the German mark and the U.S. dollar. Interestingly, the choice of anchor was almost perfectly divided among regional lines: while Central and Eastern European countries chose to anchor to the German mark (later the euro), most former Soviet Union republics chose the U.S. dollar as their anchor (with the exception of Estonia, which adopted a currency board arrangement with the German mark; and Latvia, which chose the SDR). As we will show, this divide between the euro and the dollar cannot be explained solely on the basis of trade flows with Europe or the United States, but is partially the result of network externalities arising from trade partners’ anchor currency choices.

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[8] In RR’s sample, the numbers of all countries of floats and pegs to the dollars and mark according to the natural classification in 1950, 1970, and 1990 were: Floats--19, 8 and 21;Dollar--18, 45 and 44;Mark--0, 5 and 20.

III. Determinants of Regime and Anchor Choice

A. Determinants of Regime Choice

We follow standard theoretical arguments and some of the extant empirical literature in choosing a fairly large set of determinants for the peg/float choice. While the list is surely not fully complete, and alternative sets could be used, this proves a useful starting point for comparison to earlier approaches and can easily be amended. To a certain degree, efficiency gains arising from parsimony have been traded for possible increases in bias of the coefficients.

Trade Openness

After controlling for patterns of trade, it is not clear whether more open countries would prefer to peg or to float. Countries that trade a lot could be exposed to terms of trade shocks and could benefit from flexibility in the nominal exchange rate. On the other hand there may be greater transaction cost gains from stabilization of the exchange rate. Our data come from the IMF *International Financial Statistics* database. Openness is measured as the total imports and exports divided by nominal GDP.

Capital Account Openness

The effect of capital account openness is also theoretically ambiguous. On the one hand, countries that borrow abroad may have strong incentives to peg the exchange rate. Because there may not be hedging mechanisms, or possibly because countries want to economize on such insurance contracts, an exchange rate peg can ensure that the volatility of returns is not affected (too much) by exchange rate slippage. On the other hand, large capital flows and a pegged exchange rate are not compatible with an independent monetary policy according to the Trilemma argument (see, for example, Obstfeld and Taylor, 1998). Hence countries exposed to large capital flows may forgo a peg and opt for a float in order to avoid loss of an independent monetary policy. We measure capital account openness as in Juhn and Mauro (2002). This is the total of inflows and outflows of assets and liabilities divided by nominal GDP. The data come from the IMF *International Financial Statistics.*

Reserve Cover

Countries holding large amounts of reserves can more easily maintain the credibility of a peg and so may be more likely, all else equal, to choose a pegged exchange rate. In a simple first generation currency crisis model (e.g., Krugman, 1979), a government running an excessively expansionary policy runs out of reserves over time. This precipitates the speculative action that dooms a peg. The likelihood of seeing a peg in any given year, then, is a function of international reserves. We normalize reserves by M2 and in certain specifications by the amount of annual imports. All data come from the *IFS.*

Financial Development

Financially developed countries may be more successful at adopting and maintaining pegs. Prudent regulation of the banking system and financial markets may allow for a deep financial system to emerge and more sustainable outcomes rather than booms and busts due to oversight, recklessness and cronyism. But again, there is the possibility of ambiguity here. As argued in Levy-Yeyati, Sturzenegger and Reggio (2002), a more developed financial system could be synonymous with greater exposure to international capital flows. For countries wishing to maintain autonomous monetary policy, this would mitigate against the choice of a peg. To measure financial development, we use the proportion of quasi-money (M2) in the total monetary stock. As another control for financial development, we also control for the log of the population and the log of real PPP-adjusted GDP or the general level of economic development. All monetary data come from the *International Financial Statistics.* GDP and population data come from the World Bank's *World Development Indicators.*

Credibility

Countries may be able to import monetary policy credibility by pegging the exchange rate to the currency of a country with a reputable monetary authority or by foregoing control over monetary policy. The recent past has seen the implementation of new currency boards in Argentina, Bosnia and Herzegovina, Bulgaria, Djibouti, Estonia, and Lithuania. Other examples are currency unions of small countries such as the Eastern Caribbean Currency Union and the CFA franc zone in Africa. We measure the potential need to import policy credibility with the average of the previous three-years' inflation rate. Inflation rates come from the *International Financial Statistics*.[9]

Real and Nominal Shocks

According to standard open-economy macroeconomic theory embodied in the Mundell-Fleming-Dornbusch type of models, countries with large real shocks relative to nominal shocks might prefer to use the exchange rate as a shock absorber, and therefore might be less likely to peg. Conversely, in countries where nominal shocks are more important, a peg or quasi-peg can eliminate or reduce these shocks by forcing the money supply to adjust in the appropriate direction. We measure real shocks with the volatility of the previous five-year's investment to GDP ratio. Exposure to nominal shocks is measured by the volatility of the previous five-years' velocity of the money supply. Data on the money supply and real output come from the *IFS*.

[9] Unfortunately our multinomial logit methodology does not allow us to explore how the inflation rates of our three potential pegs influenced regime choice. While it is surely the case that the dollar or mark makes a better potential peg than the peseta or the peso the difference between the dollar and mark is probably insubstantial and moreover there is no obvious way to include the inflation rates of other potential pegs like the peso or the peseta when no country chose such pegs.

Political Variables

Since the exchange rate regime is normally a political decision, it must be the case that political interests and institutions affect the observed outcomes. Indeed, an intuitive interest group story lies behind the anchor currency choice which we discuss below.[10] In terms of pegs versus floats, we believe institutions and interests are also important. For example, weak governments may not be able to sustain the stabilization policies necessary to make a peg viable (e.g., Argentina), while a governing party with a strong majority may find it easy to enact the restrictive policies necessary to maintain a peg. In the other direction, political systems that give rise to weak governments, such as proportional representation systems, have trouble making the political deals and compromises necessary to implement stabilization reforms and might find a peg a convenient and expedient way to gain credibility or stabilize the economy even if it is momentary (as argued in Bernhard and Leblang 1999).

We use a Herfindahl index of political parties in the polity to measure how likely the system is to give rise to a government with homogeneous interests. So as the index rises, the expected stability (in terms of the likelihood of a coalition breaking apart) and homogeneity of the governing party (or parties) is likely to rise and hence give rise to a float. The percentage of seats held in the legislative assembly by the governing party measures the strength of the actual governing party. This political data comes from the *Database of Political Institutions*.[11]

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[10] That is, groups with trade links with a given bloc will exert pressure on politicians to decrease their transaction costs of trade by implementing a peg. Implementing a peg reduces transaction costs by lowering risk arising from exchange rate volatility and/or decreasing the hedging costs. The more a country trades with a particular bloc, the greater the political incentive (assuming equally responsive governments) to adopt a particular anchor currency a) in order to reduce existing transaction costs and b) to benefit from the likely gains in trade. Frankel (2003) estimates the increase in trade accruing to a country from adopting the dollar or the euro would be a three-fold increase of trade with the given bloc. Finally the idea that those already trading more with a bloc achieve the largest gains could bias our econometric estimates of the correlation between trade flows and regime choice. While we are fairly certain about the positive correlation we find below, future work will need to quantify the bias arising from such endogeneity.

[11] In future work, we would like to include additional political variables such as a measure of whether the country has a majoritarian system or not and the amount of opposition in a proportional system, as in Bernhard and Leblang (1999). We also would like to add some variable for the degree of political ties between two countries (e.g. voting patterns in the UN) as a potential determinant of anchor currency choice. Pegs imply a choice must be madder about fighting inflation versus easing unemployment. Frankel (2003) suggests that symmetry in political preferences may make it easier to generate a political consensus about the right way to adjust to such a shock.

Regime Persistence

Countries are not likely to actively engage in a decision making process about their regime in each year. But if we were to use a multinomial logit model on a panel data set we would be implicitly assuming that the choice was taken independently in each and every year. Econometrically there would likely be serial correlation in regime choice making inference problematic. A more realistic assumption might be that countries come to a point when a decision needs to be made and that decision persists until events change radically. This would be if a speculative attack a major political event or an economic shock hit. To capture this idea of persistence, we include the lagged values of certain choice variables. We also include an indicator for whether the country was pegged or freely falling in the previous year.[12]

B. Determinants of Anchor Currency Choice

Our empirical analysis of the cross-country determinants of anchor currency choice is one of the principal contributions of this paper. We identify four main determinants of anchor currency choice (1) trade network externalities; (2) symmetry of shocks; (3) the currency denomination of debt; and (4) legal and/or cultural heritage.

Trade Network Externalities

According to Optimal Currency Area (OCA) theory, an important determinant of whether a country is part of an optimal currency area is the potential reduction in transaction costs. In the case of currency unions, the transaction costs include the costs associated with exchanging currencies (as measured by the bid-ask spread), the costs associated with hedging to avoid exchange risk, as well as the costs in terms of lost trade due to exchange rate uncertainty. As a measure of the potential reduction in transaction costs from adopting a particular anchor currency for a peg, we use the total amount of trade with the "currency bloc," i.e., with all the countries that are pegged to this particular currency (including, of course, the country that issues this currency if one exists). The reasoning for this is straightforward. If there are transaction costs to trade arising from exchange rate volatility or exchange rate uncertainty, then the benefits to pegging should be gained on each unit of trade with a particular bloc.[13]

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[12] In addition, we include in some specifications a set of time indicators which can, under certain assumptions, allow for duration dependence or serial correlation in regime choice (see Maddala 1987 or Beck, Katz and Tucker 1997 and Bernhard and Leblang 1999). While indicators for lagged anchor currency choice might also be appropriate, this would result in too many parameters to feasibly estimate.

[13] Another interpretation of this variable is that it measures the relative strength of competing interests that are vying to make the government choose a particular peg.

We normalize by GDP so that we have a measure of the intensity of the value in standard units. Again, we view this as a proxy for how economically and politically important an interest group is in an economy. More interestingly, it is this transaction cost saving property of pegged exchange rate regimes that we believe give rise to important strategic complementarities or network externalities in the regime choice. Measuring these effects will allow us to gauge how important such effects are for determining the proportion of countries belonging to each type of anchor currency bloc. In our robustness checks, we allow for the problem of endogeneity between trade levels and exchange rate regime choice (or equivalently exchange rate volatility) by including simply the number of countries in a region that are pegged to a particular anchor.

A related approach has been taken by Eichengreen and Bayoumi (1999), who regress bilateral exchange rate volatility on the level of bilateral trade, the synchronicity of output shocks and a few other variables to control for the choice of whether to peg or not. However, this approach, unlike ours, is unable to explain why two small countries pegging to the dollar with little bilateral trade but lots of trade with the US would have such low bilateral exchange rate volatility. These countries would be extreme outliers to the extent that trade flows matter in their final specification.[14]

Symmetry of shocks

Of course there are costs to linking up to a particular currency when there are large asymmetries in output shocks. These would naturally make policy autonomy more valuable. The larger the asymmetries in shocks between one country and another, the more costly it would be for these countries to have identical monetary policies. We operationalize these asymmetries by using the standard deviation of the log difference in national output over the previous fifteen years.

Currency denomination of debt

OCA theory was born in an era when international capital movements were relatively limited. But today capital flows are very important for a large group of countries. Perhaps countries attempt to lock the exchange rate in order to minimize transaction costs on capital flows. As a proxy for these benefits, we use data made available by the Bank for International Settlements on the level of total outstanding claims (loans, securities and other liabilities) to all sectors issued abroad and denominated in the anchor currencies. We convert

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[14] In addition, their approach looks at the choice as a bilateral option with a simple linear relationship, while we prefer to think of the choice between blocs as a possibly highly nonlinear relationship.

all values into US dollars.[15] Finally, as with trade, we normalize these liabilities by nominal GDP.

Legal origin

It could also be the case that other non-economic factors such as legal origins associated with colonial heritage are decisive for regime choice. For instance, the Sterling bloc was formed largely of colonial offshoots of the British empire and similarly for many countries that now use the French franc as their anchor. Whether these links are important, after controlling for trade links, can be verified by controlling for whether a country has a cultural and legal legacy of the British, French or German empires. These data come from the World Bank Global Development Network at http://www.worldbank.org/research/growth/GDNdata.htm.

IV. EMPIRICAL METHODOLOGY

We use a multinomial logit setup to predict regime choice. Country-years are the observational unit, and it is assumed that countries choose the exchange rate regime that provides maximal benefits amongst all alternative regimes. We write these benefits as a function of country-level characteristics. When time dummies are included, these control for environmental or global factors.

Formally, we write that the value or "utility" to country *i* in year *t* from a peg to any particular anchor currency A is given by

$$V_{it}^{A} = \sum_{j} \beta_{j}^{A} x_{itj} + \sum_{k} \beta_{k}^{Peg} y_{itk} + \varepsilon_{it}^{A}$$

where $x_{it.}$ stands for the vector of attributes of a country that affect the choice of anchor, A, and where we include a constant term in these attributes and $y_{it.}$ is the vector of attributes of county i that determines whether to peg, float or fall. Note that the coefficients on anchor choice are allowed to vary over regime and anchor choice, but that the coefficients pre-multiplying the peg or fall choices are constrained to be the same over all anchor choices. We assume that the country level error terms are independent and identically distributed Weibull, so as to implement a standard multinomial logit model with maximum likelihood.

At the same time, we normalize the utility from floating to 0 and assume that the utility from freely falling is given by

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[15] The data were graciously provided to us by Ugo Panniza. Some indication of the construction of the data and the sources is given at http://www1.oecd.org/dac/debt/. We also exclude some of the countries with the highest debt to GDP values as these appeared to be extreme outliers. Depending on whether this selection process is unrelated to the other regressors or not, this could have consequences on our estimated coefficients.

$$V_{it}^{Fall} = \sum_k \beta_k^{Fall} y_{itk} + \varepsilon_{it}^{Fall}.$$

Note that the vector of characteristics that enters the choice to fall is the same as that in the choice to peg. Moreover we constrain the parameters from the anchor choice to be zero for the falling category.

An alternative specification to the basic multinomial logit would be a nested logit model, where the top level choices would be to fix, float or freely fall, and the bottom level choice, after having decided to peg, would be to choose amongst a set of anchor currencies. One might want to do this if there were common, unobserved factors driving the choice to peg to any anchor versus floating or falling.[16] It turns out that there is little justification to do so with the data at hand.

The benefit of using nested logit is that over certain groups of choices one can relax the independence of irrelevant alternatives (IIA) assumption of the multinomial logit. However, in our case, it turns out that there is no evidence that IIA does not hold once we condition on trade links and other factors. Hausman-type tests, when included categories are omitted, do not meet the asymptotic criteria but the coefficient magnitudes do not seem to change too much.

In order to determine what factors are related to the peg or float outcome we constrain the coefficients on the variables in Section 3.A above to be the same across all types of anchors (but different for the freely falling category). This implicitly assumes that these factors do not differentially affect whether a country pegs to the dollar, the franc or the mark.[17]

The categories we use are peg to US dollar, peg to French franc, peg to German mark, float, or freely falling.[18] Thus, we analyze whether countries, if they pegged, preferred to peg to the

[16] We tried several nested logit specifications, but did not find any evidence of unobservable common traits amongst our anchor choices, hence we can reject this type of specification.

[17] Testing this directly with the full set of variables is difficult because in the multinomial logit setup there are quite a large number of coefficients to estimate relative to the observations we have. Our justification is purely based on theoretical considerations. Nevertheless it is probably misleading to say a variable like the level of reserves would have exactly the same coefficient for any two choices. We are aware that doing so may bias these coefficients. But since we are mainly interested in other variables and in the qualitative marginal effects rather than the exact magnitudes of these marginal effects we have chosen to specify the model this way.

[18] While other anchors appear in our data set, the complete set of macro control variables only allows us to use these three blocs in our tests. We can include the British pound if we eliminate certain macro variables but we believe the bias outweighs the efficiency gain here. Additionally it is infeasible, given our control variables, to include anchors like the Yen, the Rand or the Australian dollar, which have very few adherents.

dollar, the mark, or the franc. We look at the period until 1995 because some of our time series end then.

V. RESULTS

A. Determinants of Regime Choice

The output from maximum likelihood estimates is fairly consistent with the traditional economic interpretation of pegs versus floats. More financially developed countries appear to be less likely to peg. Rich countries seem less likely to peg. Finally, countries with greater volatility of real shocks, as measured by the volatility of domestic investment, are less likely to peg their exchange rates. Trade openness is positively associated with pegging (or quasi-pegging). The estimated coefficient is significant at the 87 percent level of confidence while the marginal effects are significant.

Other economic factors do not seem to play an important role. For example, using lagged average inflation as an indicator for the need to import credibility, this coefficient has a negative association with pegged arrangements and is not statistically significant. Reserves and exposure to capital flows have small coefficients and are also very statistically insignificant. Finally, the incidence of nominal shocks as measured by the volatility of the velocity of money, has a sign that is opposite from that of the theoretical literature and a standard error that is too large to make the coefficient statistically indistinguishable from zero.

Neither do our political economy variables show up as significant. This is not to say that political constraints do not matter. These are limited indicators. Perhaps more work should go into the nuances of these variables or at least including other factors as mentioned above.

Our results also show that there is very strong persistence in regime choice. The estimated marginal effect on the lagged indicators for each regime suggest that regime choice is strongly explained by the previous year's regime choice. For example, countries choosing to peg in one year are 70 percent more likely than floaters to peg again in the next year. On the other hand, countries which had a pegged exchange rate system in the previous year appear to be 88 percent less likely to float than countries which floated in the previous year. It is notable that when we predict regime adherence our predictions are a year behind actual regimes at times of transition, suggesting that it is difficult to predict exactly when a switch will occur. It would appear that our main source of identification is cross-sectional rather than time series variations in the variables.

B. Determinants of Anchor Currency Choice

Trade Network Externalities

We believe our most important and most robust finding is that trade network externalities matter a lot for anchor currency choice. This is evidenced by the large number of positive signs on our coefficients associated with anchor bloc trade and anchor choice, reported in Table 1. On the one hand, we find that, for each type of anchor choice, trade within a given bloc is strongly positively associated with regime choice. On the other hand, trade with other blocs is negatively associated with the benefits associated with a particular anchor currency. In the next section, we provide some way to gauge how important these trade variables might have been for determining the patterns of regime adherence we have seen in the past.

A notable exception is when countries are considering a dollar peg. Apparently they are more likely to choose a dollar peg whether they trade more with the franc bloc or the dollar bloc, and the coefficient on trade with the dollar bloc is only significant at the 75 percent level *in this specification*. Perhaps the weak association with the dollar bloc integration variable arises because the dollar holds a special place in anchor currencies due to its inflationary record or international standing as a vehicle currency. It might also be the benefits are accrued through savings in transaction costs on capital flows rather than on trade flows.

Symmetry of shocks

The estimated coefficients and their marginal effects on the variable associated with synchronicity of shocks also gives some support for an OCA interpretation of anchor choice. In all cases, an increased co-movement of nominal output is associated with an increased propensity to adopt a particular anchor. This can be seen in Table 1 in the columns showing the marginal effects. In this case, the only significant marginal effect or coefficient is the term associated with choice of the US dollar versus other types of anchor. There are also some interesting cross-terms in this estimation. Decreased synchronicity with the US economy increases the chances of a German mark or French franc adoption though only the former is statistically significant.

Currency denomination of debt

Table 2 reports the results of a multinomial regression including the currency denomination of debt. Including debt data seems to improve the predictive power of the model slightly. We still over-predict dollar pegs and under-predict free falls but to a lesser extent than in Table 1. We find little evidence that currency denomination of debt is more relevant than trade patterns when the question is one of anchor choice. We still see strong network externality coefficients on the trade flows but the capital flows are rarely significant.

The coefficient on the dollar liabilities means that more dollar liabilities are associated with a lower probability of pegging to the dollar, which is counterintuitive. Interpreted as a straightforward transaction costs argument similar to that of trade, the only coefficient that makes sense is that on franc liabilities. More of such debt relative to GPD seems to be associated with an increased propensity to peg to the franc. This table suggests that there is no straightforward transaction costs relationship between various types of debt and anchor choice. Perhaps this is because hedging is possible or insurance strategies exist such that the exchange rate regime makes little difference for a given structure of capital flows. Why transaction costs of hedging would matter for trade however seems to be a mystery then. This could be indirect evidence that trade lobbies are stronger than financial services lobbies or on the other hand perhaps it is due to multicollinearity of the two types of flows. This topic surely deserves more research in the future. Most important, our sample excludes many countries here and more work should address this issue.

Legal Origins

We also allowed for a German or French legal or colonial heritage to influence the decision of anchor. This result is not presented, but the results are available upon request. The difference in results with this specification is that we find countries with a French legal origin are very much more likely to adopt a franc peg. Moreover, the positive coefficient on trade with the dollar bloc is now statistically significant and positive in terms of choosing a dollar peg.

Model Fit

To measure how well our model fits the data, we provide predictions and actual tabulations for the sample in Tables 1 and 2. To decide which regime a country is predicted to have, we simply assign each country to the regime that had the highest predicted probability. We find that our baseline model over-predicts dollar pegs, and also quite seriously under-predicts free falls. One possible explanation for this is that free falls are generally crisis episodes, and our variables are poor predictors of such crises. Moreover, it could be that countries that pegged to the dollar are more likely to suffer crises, if only because dollar pegs are more preponderant than other types of pegs.

C. Other Specifications and Robustness Checks

We tried several other modified specifications from the baseline, but found that our baseline results qualitatively changed very little. This strengthens our confidence in our results. Four robustness checks we undertook are as follows.

First, we included **year dummies** in the baseline specification. We find that time dummies are jointly significant though individually they are not. None of the other variables become insignificant when time dummies are included. Moreover the improvement in fit as measured by the increase in the likelihood value is marginal.

Second, instead of including the trade-weighted anchor regime choice, we simply included the **number of countries** pegging to each anchor currency in a country's region.[19] The benefit of using such a measure of external regime choice is that we avoid somewhat the endogeneity between trade flows and exchange rate volatility. However, spatially correlated decisions (i.e., policy spillovers) could also confound estimates here, just as much as when we use the trade weighted sum of anchor adherents.

The results are in line with Table 1 and, if anything, the OCA regime coefficients are even more precisely estimated. One small change is that openness is now a significant predictor of a peg probably because the collinearity between our trade network variables and openness has been diminished. Also the predictive power in terms of percentage of total countries correctly predicted has increased. In fact, in our sample, we predict exactly the number of floats and falls and very nearly so the various anchor currency pegs.[20]

In order to determine whether it is trade network externalities as opposed to simply the regional "popularity" of an anchor currency that matters, we tried including the controls for regional regime numbers and the trade-weighted global numbers of adherents in the same specification. Interestingly, we find some evidence that both trade quantities and regional numbers matter. This could imply that policy spillovers exert more influence the greater are trade links since the network variables are essentially interactions between the regional regime choices and the trade flows.

For the US dollar, both the number and trade variables have positive coefficients, but the regional numbers coefficient (estimated at 0.02) is significant at the 93 percent level, while the trade weighted average (estimated at 0.05) is significant at the 85 percent level. This is similar to the franc and mark results but both coefficients in both cases are estimated to be statistically significant. The coefficients on the trade values are always larger. In terms of *negative* externalities, these appear to only operate through trade channels. The franc and mark coefficients on the trade values are negative when another anchor choice is being made.

Third, another robustness check we carried out was to re-classify countries so as to **exclude some of the more "flexible" pegged regimes** from the pegged category. Here, we include countries in the peg column only if they had a fine code greater than 8 as in Table A.1 in Appendix 1. In other words, we no longer considered wide crawling bands, de facto crawling

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[19] We define a region as those countries which border a country and those which have geographical centers within 1800 kilometers by great circle distance. As a reference point Argentina and Brazil are 1707 kilometers apart based on our distance measures. These measures come from data in the CIA *World Factbook* but were used by and defined in Reuven Glick and Andrew Rose (2002).

[20] This is not to say we are not mis-classifying some observations. At the country level a number of mis-predictions arise stemming from the lagged term in the equation. In particular we typically see in years of regime change that we do not predict the change until a year later. This is where most of the mis-classifications arise.

bands, and moving bands as "pegs". The results from this exercise were still broadly in line with our baseline. However, statistical significance falls for investment volatility (a measure of real shocks), while trade openness becomes significant.

Finally, we checked robustness by **excluding developed countries** from our sample. Doing this shows there is little evidence that the factors driving anchor choice are different than with the full sample. However, the choice to peg or not is apparently different. Openness is now strongly significant (possibly due to the fact that many small island economies have pegs), while GPD is not statistically associated with pegging.

VI. HOW STRONG ARE NETWORK EXTERNALITIES?

The existence of network externalities in anchor currency choice implies the possibility of market failure (or coordination failure). For example, suppose one country initially decides to peg to the dollar for some "good reason" (e.g., because its main exports are sold to the United States or its liabilities are dollarized). Next, suppose another country that trades heavily with this country also decides to peg to the dollar in order to minimize bilateral exchange rate fluctuations with the first country. Then if the original reason for the peg goes away, the first country still may continue to peg to the dollar just because an important trade partner does so, and the second continues to do so because the first does it.

This could be a coordination failure in the sense that both countries might be better off if they simultaneously decided to switch to pegging to each other's currency or perhaps decided to create a local monetary arrangement.[21] While re-coordinating in this simple illustrative example would be relatively simple, the complexity of negotiating another arrangement when more countries are involved (e.g., think here of how long it took to establish EMU) could delay or even deter the emergence of the socially optimal arrangement. Moreover the example serves to illustrate the path dependent nature of the international monetary system.

In order to get a sense of the strength of network externalities, and therefore the likelihood of market failure, we would like to measure how strongly other countries' choices affect the geography and incidence of particular anchor currencies. Our simple answer is that within-bloc trade is crucial. To show this, we ran the following counterfactual for each type of anchor. Suppose for each country that trade with a given bloc were X percent of actual trade with that bloc in each year. For X we chose the values 100, 50, and 0. Then we simply substituted this new counterfactual trade level for actual trade and then predicted regime choice. The most plausible counterfactual would allow us to gauge what might have happened to the other blocs if we apportioned this "lost" trade to trade with these other blocs. We present results where we simply add 0, 50, or 100 percent of all trade (relative to GDP) with countries on a dollar bloc to trade with the mark bloc (again, relative to GDP).[22]

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[21] Ogawa and Ito (2000) look at a theoretical model which displays such possibilities.

[22] One might also ask what our model predicts about regime substitution when no assumptions are made about where trade goes. Would peggers adopt alternative pegs in the

(continued…)

Figure 2 plots actual dollar pegs, and predicted dollar pegs for trade at the 100 percent (actual), 50 percent and 0 percent levels when the lost trade is apportioned to the mark bloc. In many years, the size of the dollar bloc is almost half the size of the actual bloc when trade with that bloc is reduced by 50 percent. There is also a larger gap between counterfactual predictions and the predictions using actual data in the early, mid-1990s compared to the 1980s. In particular, our findings suggest that trade factors may have been more important in the 1990s for deciding anchor choice.

It is also interesting that the reduction in the number of countries pegging to the dollar is larger when moving from 100 to 50 percent trade than when moving from 50 to 0 percent of actual trade. This illustrates how regime choice is non-linear in trade flows, and so a relatively small amount of regime change can have large effects on the geography of the international monetary system at certain levels. This also tends to indicate that marginal additions to the bloc, when these are defections from another bloc, become more and more important for regime choice implying perhaps a snowball effect.

Figure 3 shows what might have happened to the mark bloc if each country experienced significant falls in links with the dollar bloc and hence increases in connection with the mark bloc. The mark bloc gains massively in size and even captures more adherents than are predicted to be lost in the dollar bloc.[23] This is consistent with the idea that transaction cost benefits per dollar of GDP, as estimated by the model, are larger in the mark bloc than those arising from the dollar peg. Also, the lack of change in the franc bloc shows that the dollar and mark blocs do not provide strong attractions in terms of transaction costs savings for countries that have considered a franc peg.

VII. CONCLUSION

Virtually all countries that have chosen to peg their currencies in some way to another currency have converged over the last fifty years to using either the U.S. dollar or the euro as anchors for those pegs. Moreover, a group of six Arab countries as well as a group of six West African countries are planning to establish monetary unions, with common currencies

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case their most preferred peg changed attributes or would do countries choose between an anchor and a float? We think they choose among anchors after having made the decision to peg. We substitute actual dollar trade with *X* percent decreases in dollar trade and find that predicted floats do not change, countries appear to switch most heavily into mark pegs and the franc gains relatively fewer new adherents. In 1995, for a 75 percent drop in dollar trade, the change in the predicted adherents to the dollar, the mark, the franc and floating regimes respectively are: -5; +3; +2; 0.

[23] In the case where all trade with the dollar bloc disappears and all of it is apportioned to the mark bloc, the franc bloc barely changes in size. This figure and the underlying data are available upon request.

that would be either pegged to the U.S. dollar or to the euro.[24] Why have some countries chosen to peg their currency to the U.S. dollar while others have chosen to peg to the euro? Why are other currencies no longer popular as anchors? More generally, what determines the choice of anchor currency in a pegged (or nearly pegged) exchange rate regimes?

In this paper, we presented important evidence on the determinants of anchor currency choice for pegged exchange rate regimes, as well as on the determinants of the choice to peg itself. Using a new dataset on de facto exchange rate regimes and a panel multinomial logit framework, we presented evidence that a key factor explaining the convergence to mark franc and dollar pegs is the existence of network externalities, which arise because the benefits of using a particular anchor increase with the amount of trade with countries that use the same anchor.

The results seem consistent with an "optimal currency area theory" of anchor currency choice. Importantly, we find that trade relations matter, in the sense that exchange rate regime choices appear to be chosen with reference to trading partners' regimes. We also presented some evidence that the size of each currency bloc matters quite a lot when it comes time to choose an anchor. For example, our results predict that, if trade were to exogenously increase with those countries pegging to the U.S. dollar, it would be individually optimal for these countries to switch to a dollar peg.

In terms of the determinants of the choice to peg as opposed to float, our results are generally in line with standard economic theory. However, just as in many other empirical studies of regime choice determinants, our results do not seem very robust. This is consistent with Juhn and Mauro's (2002) finding that there are no robust empirical regularities in how countries choose their exchange rate regimes.

Two important lessons emerge about the geography of the international monetary system. First, policy advice or political choices regarding exchange rate regimes could have repercussive effects for regime choice in other countries. For example, if a major trading partner adopts a dollar peg for a given reason, a number of other trading partners may be expected to follow suit. Depending on the size of the bloc, this could have very large effects on other countries' regime choices. Second, if a large number of countries are pegging to a certain currency, then, in the absence of a large crisis or some other unanticipated extreme event, it may be difficult to break out of this pattern into another perhaps more socially beneficial set of arrangements.

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[24] The first group are the six members of the Cooperation Council for the Arab States of the Gulf (Bahrein, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates), who plan to establish, by 2010, a common currency pegged to the U.S. dollar (Fasano, 2003). The second group includes Nigeria, Ghana, Guinea, Liberia, Sierra Leone, and The Gambia, who plan to establish a monetary union by 2004, which would be either pegged to the euro (and thereby to their neighboring countries of the CFA-franc zone) or to the U.S. dollar. For more on the prospects of monetary union in West Africa, see Masson and Pattillo (2001).

In summary, our findings indicate that path dependence and multiple equilibria are very likely to be present in the international monetary system. This seems intuitive after looking at the emergence of the gold standard as an international regime and the evolution of exchange rate regime choice since 1950, but we now have a stronger empirical foundation for such a claim.

APPENDIX I: THE NATURAL CLASSIFICATION

This Appendix, based on Rogoff and others (2003), summarizes the data and algorithm used to construct the natural classification. More details are provided in Reinhart and Rogoff (2004).

Table A.1 Regime Classification Codes and Descriptions.

fine	course	Description
1	1	No separate legal tender
2	1	Pre announced peg or currency board arrangement
3	1	Pre announced horizontal band that is narrower than or equal to +/-2%
4	1	De facto peg
5	2	Pre announced crawling peg
6	2	Pre announced crawling band that is narrower than or equal to +/-2%
7	2	De factor crawling peg
8	2	De facto crawling band that is narrower than or equal to +/-2%
9	3	Pre announced crawling band that is wider than or equal to +/-2%
10	3	De facto crawling band that is narrower than or equal to +/-5%
11	3	Moving band that is narrower than or equal to +/-2% (i.e., allows for both appreciation and depreciation over time)
12	3	Managed floating
13	4	Freely floating
14	5	Freely falling
15	6	Dual market in which parallel market data is missing

The Data

The natural classification classifies exchange rate regimes into fifteen fine and six coarse categories as summarized above. The classification is based on monthly data on official and market-determined exchange rates for the period 1946-1998.[25] The market-determined exchange rate data come from various issues *Pick's Currency Yearbook*, *Pick's Black Market Yearbooks*, and *Pick's World Currency Report* and the official rate comes from the same sources as well as from the IMF. The quotes are end-of-month exchange rates and are not subject to revisions. For the countries that had one or more monetary reforms, involving changes in the units in which the exchange rate is expressed, the data has been converted as necessary to ensure continuity.

[25] In some instances, the data for the market-determined rates are available for a shorter period. Observations where the parallel market was known to be substantial but parallel rate data were not available were marked "unclassified."

The Algorithm

1. First, a separation is made between countries with either official dual or multiple rates or active parallel (black) markets.

2. If there is no dual or black market, a check is done to see if there is an official pre-announced arrangement, such as a peg, crawling peg, or band. If there is, the announced regime is verified by examining the mean absolute monthly change over the period following the announcement.[26] If the regime is verified (according to rules analogous to those described in step 3 below), it is then classified according to the announcement.[27]

3. If there is no pre-announced path for the exchange rate, or if the announced regime fails to be verified by the data (which is often the case), and if the twelve-month rate of inflation is below 40 percent, the regime is classified on the basis of actual exchange rate behavior:

   a) If the absolute monthly percent change in the exchange rate is equal to zero for four consecutive months or more, that episode is classified (for however long its lasts) as a de facto peg (if there are no dual or multiple exchange rates in place).[28]

   b) If the probability that the monthly exchange rate change remains within a +/-1 % band over a rolling 5-year period is 80 percent or higher, then the regime is classified as a de facto peg or crawling peg over the entire 5-year period. If the exchange rate has no drift, it is classified as a fixed parity; if a positive drift is present, it is labeled a crawling peg; and, if the exchange rate also goes through periods of both appreciation and depreciation it is a moving peg.

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[26] The advantage of using mean absolute deviations, rather than variances or standard deviations, is that this minimizes the impact of outliers. For example, when the exchange rate is fixed but subject to periodic large devaluations, the variance or standard deviation would overstate the extent of exchange rate flexibility in the period around the devaluation.

[27] When the announced regime is as peg to an undisclosed basket of currencies, tests are done to see if the "basket" peg is really a de facto peg to a single dominant currency (or to the SDR). If no dominant currency cannot be identified, the episode is not labeled as a peg. Potentially, this implies that the natural classification may be missing some de facto basket pegs. However, according to Reinhart and Rogoff (2002: 39), "this is almost certainly not a major issue."

[28] This allows for the identification of relatively short-lived de facto pegs as well as those with a longer duration. For instance, this exercise allowed for identification of the Philippines *de facto* peg to the US Dollar during 1995-1997 in the run-up to the Asian crisis as well as the numerous European *de facto* pegs to the DM well ahead of the Euro.

c) The approach regarding de facto bands (as well as pre-announced bands) follows a parallel two-step process. Thus, if the probability that the monthly exchange rate change remains within a +/-2 % band over a rolling 5-year period exceeds 80 percent, then the regime is classified as a de facto narrow band, narrow crawling band, or moving band over the entire period through which it remains continuously above the 80 percent threshold.

4. If the twelve-month rate of inflation is above 40 percent, these episodes are classified as "freely falling".[29]

5. The remaining regimes (those that have not already been classified by steps one through four) become candidates for "managed" or "freely" floating. To distinguish between the two, the degree of exchange rate flexibility is measured by the statistic ε / P($\varepsilon < 1\%$), where ε is the mean absolute monthly percent change in the exchange rate over a rolling five-year period. If this ratio falls within the 99 percent confidence interval or is in the upper tail of the distribution of the floater's group, the episode is characterized as freely floating. If the ratio falls in the lower one-percent tail, the null hypothesis of freely floating is rejected in favor of the alternative hypothesis of managed float

6. When dual or multiple rates are present or parallel markets are active, steps two through five above are applied to the market-determined rates instead of the official exchange rates to identify the regime.

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[29] In the highly exceptional cases where, despite inflation over 40 percent, the market rate nevertheless follows a confirmed, pre-announced band or crawl, the pre-announced regime takes precedence.

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Figure 1. Anchor Currency Choices, 1940-2001

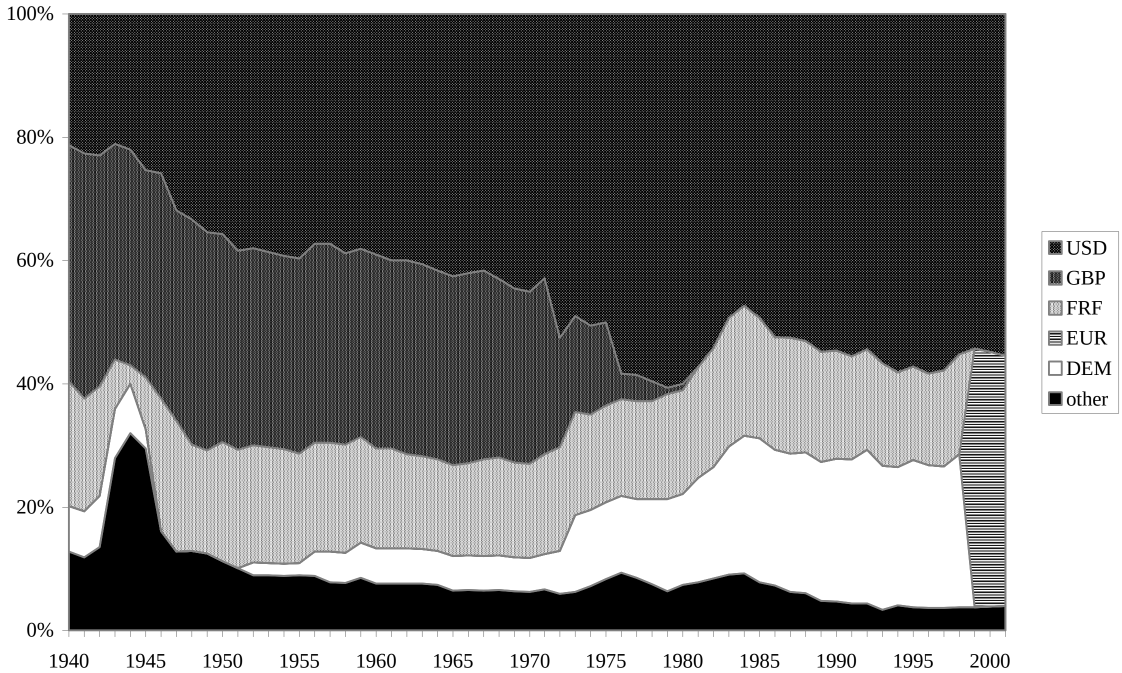
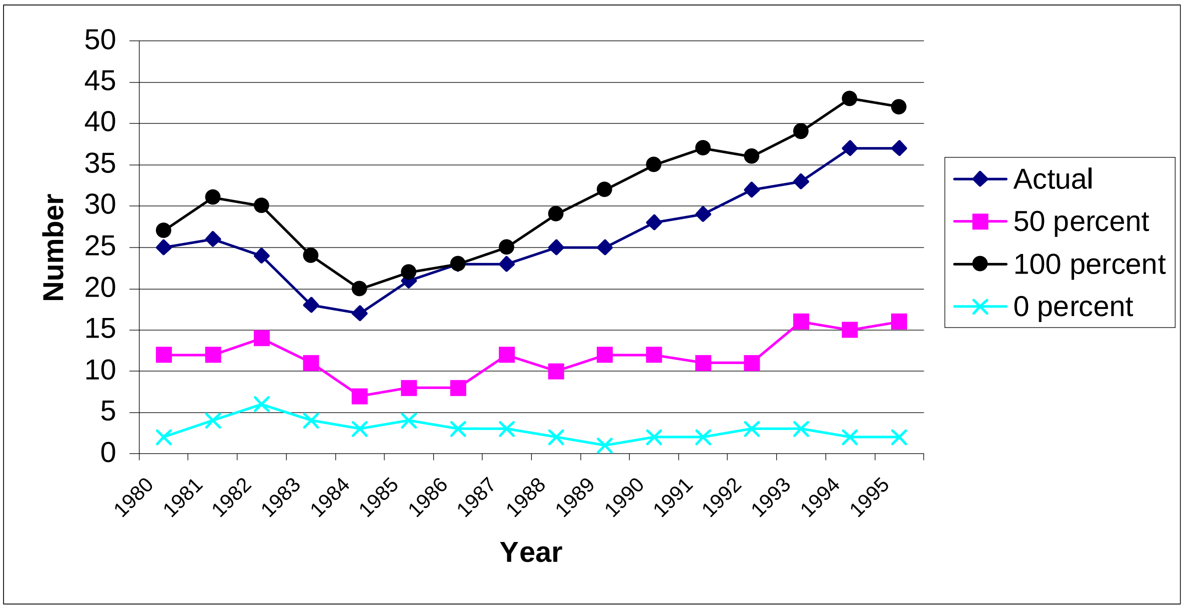
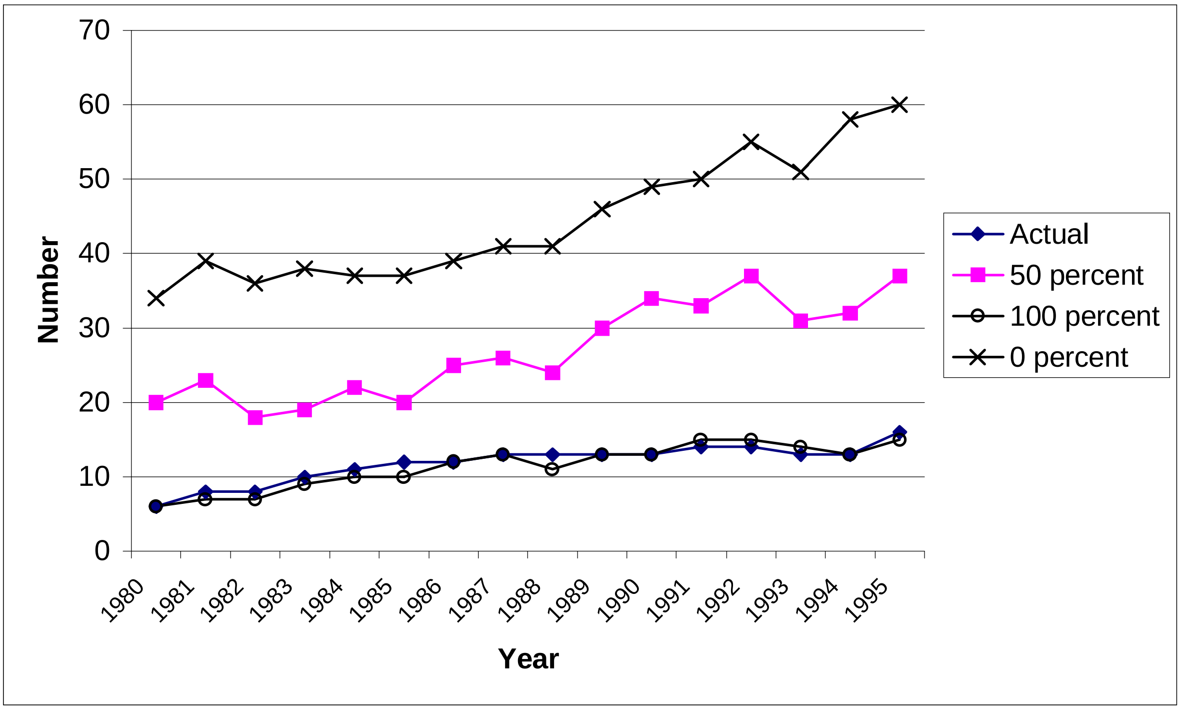


Figure 2. Number of Actual, Predicted and Counterfactual Dollar Pegs, 1980-1995.



Notes: The number in front of “percent” indicates what percentage of total trade with the dollar bloc was used to predict adherence. Actual is the actual number of countries with some form of a dollar peg. A country is classified as on a given regime if the predicted probability amongst all regimes is maximal. Also see text.

Figure 3. Number of Actual, Predicted and Counterfactual Mark Pegs, 1980-1995.



Notes: The number in front of “percent” indicates what percentage of total trade with the dollar bloc (relative to GDP) was added to trade with the mark bloc to predict adherence. Actual is the actual number of countries with some form of a mark peg. A country is classified as on a given regime if the predicted probability amongst all regimes is maximal. Also see text.

Table 1 Determinants of Anchor and Exchange Rate Regime Choice, 1980-1995

					Year				
Country	*Peg*	*Freely Falling*		*dollar*	d[pr(dollar)]/dx	*franc*	d[pr(franc)]/dx	*mark*	d[pr(mark)]/dx
Fixed Regime in *t-1*	6.124	6.124	Trade with Dollar Bloc/GDP	0.042	0.014	-0.579	-0.001	-0.333	-0.006
	(0.492)	(0.492)		(0.036)		(0.210)		(0.126)	
Freely Falling in *t-1*	5.360	5.360	Trade with Franc Bloc/GDP	0.228	0.054	1.850	0.001	-0.394	-0.009
	(0.641)	(0.641)		(0.170)		(0.300)		(0.238)	
Trade Openness	0.033	-0.020	Trade with Mark Bloc/GDP	-0.173	-0.042	-0.520	-0.0004	0.336	0.008
	(0.022)	(0.037)		(0.067)		(0.132)		(0.093)	
Gross Capital Flows/GDP	0.003	-0.023	Synchronicity with US GDP	-28.961	-6.982	42.525	0.054	52.465	1.234
	(0.007)	(0.025)		(19.346)		(41.957)		(31.900)	
Reserves/M2	0.001	0.004	Synchronicity with French GDP	-9.767	-0.901	-19.189	-0.009	-104.463	-1.667
	(0.003)	(0.004)		(22.806)		(45.577)		(44.147)	
Quasi Money/Money	0.337	0.337	Synchronicity with German GDP	35.976	7.627	-31.366	-0.049	22.868	-0.032
	(0.124)	(0.153)		(15.718)		(24.940)		(19.547)	
Average of 3 Year's Inflation	-0.001	0.000							
	(0.001)	(0.000)							
ln (population)	0.807	0.630	Predicted Floats	286	Actual Floats		289		
	(0.274)	(0.374)	Predicted Pegs	820	Actual Pegs		749		
ln (GDP)	-0.566	-0.545	Predicted Falls	52	Actual Falls		120		
	(0.216)	(0.285)	Predicted dollar Pegs	495	Actual dollar Pegs		423		
Political Herfindahl Index	-0.369	-0.673	Predicted franc Pegs	142	Actual franc Pegs		137		
	(0.674)	(0.949)	Predicted mark Pegs	183	Actual mark Pegs		189		
Size of Government Majority	0.518	0.159							
	(0.707)	(0.953)							
5 year volatility of velocity of money	-0.056	-0.044							
	(0.095)	(0.077)							
5 year volatility of investment	-0.232	0.103							
	(0.071)	(0.086)							
Constant	7.652	6.560							
	(4.527)	(5.748)							
Number of obs	1158								

NOTES: Dependent variable is fix to dollar, franc or mark or free fall. Coefficients are estimated with floating as the base category. Marginal effects are calculated at the mean. Heteroscedasticity consistent standard errors are in parentheses.

Table 2 Determinants of Anchor and Exchange Rate Regime Choice Including Currency Denomination of Debt, 1980-1995

				Year		
Country	*Peg*	*Freely Falling*		*dollar*	*franc*	*mark*
Pegged Regime in *t-1*	7.260	7.260	Trade with Dollar Bloc/GDP	0.126	-0.351	-4.010
	(0.963)	(0.963)		(0.044)	(0.192)	(1.002)
Freely Falling in *t-1*	4.971	4.971	Trade with Franc Bloc/GDP	-0.063	1.560	-3.218
	(0.846)	(0.846)		(0.169)	(0.630)	(0.626)
Trade Openness	0.037	0.003	Trade with Mark Bloc/GDP	0.025	-0.344	1.731
	(0.030)	(0.018)		(0.088)	(0.174)	(0.276)
Gross Capital Flows/GDP	-0.006	-0.092	Dollar Liabilities/GDP	-0.127	-1.261	0.497
	(0.027)	(0.037)		(0.048)	(0.567)	(0.112)
Reserves/M2	0.021	0.007	Franc Liabilities/GDP	0.068	1.045	1.226
	(0.007)	(0.008)		(0.188)	(0.472)	(0.383)
Quasi Money/Money	-0.003	0.069	Mark Liabilities/GDP	-0.349	-0.266	0.038
	(0.278)	(0.292)		(0.336)	(0.206)	(0.422)
Average of 3 Year's Inflation	0.008	0.009	Synchronicity with US GDP	-9.869	418.248	337.976
	(0.006)	(0.006)		(31.637)	(199.791)	(155.625)
ln (population)	0.655	0.549	Synchronicity with French GDP	-24.392	-384.242	-616.892
	(0.411)	(0.427)		(29.459)	(182.176)	(157.986)
ln (GDP)	-0.289	-0.472	Synchronicity with German GDP	36.014	-26.610	140.882
	(0.348)	(0.390)		(19.568)	(33.778)	(32.830)
Political Herfindahl Index	0.322	-0.585				
	(1.162)	(1.307)				
Size of Government Majority	0.690	0.844	Predicted Floats	120	Actual Floats	116
	(1.572)	(1.857)	Predicted Pegs	350	Actual Pegs	333
5 year volatility of velocity of money	-0.117	-0.231	Predicted Falls	41	Actual Falls	62
	(0.078)	(0.095)	Predicted dollar Pegs	202	Actual dollar Pegs	187
5 year volatility of investment	-0.457	0.122	Predicted franc Pegs	65	Actual franc Pegs	63
	(0.186)	(0.140)	Predicted mark Pegs	83	Actual mark Pegs	83
Constant	-0.123	5.382				
	(7.554)	(9.004)				
Number of obs	511					

NOTES: Dependent variable is peg to dollar, franc or mark or free fall. Coefficients are estimated with floating as the base category. Marginal effects are calculated at the mean. Heteroscedasticity consistent standard errors are in parentheses.