Division of Economics
A.J. Palumbo School of Business Administration
Duquesne University
Pittsburgh, Pennsylvania

FIX OR FLOAT: WHY DO COUNTRIES CHOOSE DIFFERENT EXCHANGE RATE REGIMES?

Catie Fallon

Submitted to the Economics Faculty
in partial fulfillment of the requirements for the degree of
Bachelor of Science in Business Administration

December 2009

Faculty Advisor Signature Page

_____

Mark T. Gillis Date
Visiting Instructor of Economics

_____

Pinar Geylani, Ph.D. Date
Associate Professor of Economics

This paper investigates the determinants of exchange rate regime choice in 179 countries in the years 1994, 1999, and 2004. Past research as a whole concludes that there are few, if any, robust predictors of exchange rate regimes. Using a long-run, cross-country analysis and a de facto classification of regimes, this study examines the effects of numerous explanatory variables. The most robust findings are that countries that are more open to trade are associated with fixed exchange rate regimes and countries that are bigger in size (as measured by real GDP) are associated with floating exchange rate regimes.

JEL classifications: F31, F41

Key words: Exchange Rate Regimes, Exchange Rate Regime Determinants

Table of Contents

I. Introduction

Following the collapse of the Bretton Woods system in 1971,[1] numerous governments chose to maintain a fixed exchange rate, while others opted to let their exchange rates float. This choice is commonly referred to as a government's exchange rate regime. Under a purely floating regime, the exchange rate is allowed to fluctuate in response to changing economic conditions, whereas under a purely fixed regime, the central bank buys or sells the domestic currency for foreign currencies at a predetermined price to keep the rate at the exact announced level. Although exchange rates are most commonly referred to as being "fixed" or "floating," there is in fact a wide spectrum of possible exchange rate regimes. Exchange rate regimes that exist somewhere in between these two cases can be considered "intermediate" exchange rate regimes. For example, in some countries, central banks attempt to maintain a "target zone" for the exchange rate, allowing it to fluctuate but only within particular bounds.

While several previous studies analyze the consequences of exchange rate regimes,[2] few consider the determinants. For example, over the past 30-40 years, the United States government has done little to prevent exchange rates with the U.S. dollar from freely fluctuating, whereas the Chinese government has long attempted to keep the Chinese Yuan pegged tightly to the U.S. dollar. Similarly, many South American countries have bounced between fixed and floating exchange rates, often falling into the "intermediate" exchange rate regime.[3] Why do some

[1] The Bretton Woods system was a monetary policy agreement between 44 countries adopted in 1944, whereby governments from each country agreed to peg their currencies to a gold standard. Due to increasing financial difficulties in maintaining these pegs, the Bretton Woods system broke down in 1971.

[2] See Rogoff, Husain, Mody, Brooks, and Oomes (2003) for an overview of the consequences of exchange rate regimes.

[3] The Levy-Yeyati and Sturzenegger (2005) dataset utilized in this paper shows that the United States has a de facto exchange rate classification of "floating" in every year from 1974 to 2004, whereas China has a de facto classification of "fixed" in every year from 1987 to 2004. Between 1974 and 2004, Argentina, Bolivia, and Brazil all fluctuated between "fixed," "intermediate," and "floating" regimes.

governments choose to fix, while others choose to float? Existing economic theory and empirical evidence on what determines the choice of exchange rate regime is largely inconclusive.

Using a de facto measure of exchange rate regimes constructed by Levy-Yeyati and Sturzenegger (2005) and a wide range of independent variables and specifications, this paper attempts to add to the existing evidence on the determinants of exchange rate regimes. The most robust finding that is also generally consistent with prior theory and evidence is that higher trade openness (the ratio of imports and exports to gross domestic product) is associated with the choice of a fixed exchange rate.

The results also suggest that larger economic size (real gross domestic product) and higher geographic concentration of trade (the share of exports with the largest trading partner) are associated with floating exchange rates. The economic size relationship is consistent with theory and evidence, but the geographic concentration relationship is not. There is also some evidence to suggest that higher commodity concentration of trade (an index of how concentrated exports are), higher development level (real GDP per capita), and fewer capital controls (government controls on the flows of assets across borders) are associated with choosing a fixed exchange rate. These results are not particularly robust though.

Finally, this paper also suggests that because of the "dutch disease hypothesis," natural resource concentration of trade (the share of exports that are natural resources) might affect exchange rate regime choice. However, the evidence does not support this.

II. Literature Review

Empirical studies on the determinants of exchange rate regimes have used a variety of different methodologies, countries, years, and exchange rate classifications. Savvides (1990),

Savvides (1993), Edwards (1996), Bernhard & Leblang (1999), Meon & Rizzo (2002) and Von Hagen & Zhou (2005) all use pooled panel data and a range of around ten years. The majority of the studies, however, use cross-sectional data to analyze the determinants of the exchange rate regime in one year or a period of years. Dreyer (1978), Melvin (1985), Honkapohja and Pikkarainen (1994), Edwards (1998), Rizzo (1998), Poirson (2001), and Juhn and Mauro (2002) use cross-sectional data to look at regimes at a specific point in time. A handful of studies look at strictly developing countries: Dreyer (1978), Savvides (1990), Savvides (1993), Rizzo (1998), Berger, de Haan, and Sturm (2000), and Poirson (2001). Von Hagen and Zhou (2005) look at twenty-five transition economies, meaning those countries that changed from a centrally planned economy to a free market economy.[4]

Most studies also use the International Monetary Fund's de jure classification of exchange rate regimes.[5] All studies reviewed in the next section use this classification, including Dreyer (1978), Melvin (1985), Savvides (1993), Honkapohja and Pikkarainen (1994), Edwards (1998), Rizzo (1998), Berger, de Haan, and Sturm (2000), Poirson (2001), Juhn and Mauro (2002), and Von Hagen and Zhou (2005). However, Poirson (2001) develops a de facto classification system and uses that in addition to the IMF classification, and Juhn and Mauro (2002) use a de facto classification of regimes developed by Levy-Yeyati and Sturzenegger (2005) in addition to the IMF classification.

Despite the wide range of techniques, variables, exchange rate classifications, and years used, previous literature on the determinants of exchange rate regime choice is inconclusive with few, if any, robust predictors of exchange rate choice. Von Hagen and Zhou (2007) observe that for sixteen commonly used predictors, ten exhibit a statistically significant relationship with *both*

[4] Transition economies include the countries of Central and Eastern Europe and the former Soviet Union.
[5] The IMF's de jure classification is explained later in the paper.

fixed *and* floating exchange rates. For instance, while some studies find a significant relationship between a fixed exchange rate and the development level of a country (typically measured by real gross domestic product per capita), other studies find a significant relationship between a floating exchange rate and this same variable.

Many predictors of exchange rate regimes have been considered from both a theoretical and empirical perspective. One prevalent variable included in the determinants of exchange rate regime choice is the size of a country's economy. In his theory on optimum currency areas, Mundell (1961) suggests that large economic size is likely to be associated with floating exchange rates, in part due to the "unholy trinity." Also known as the "impossible trinity," this theory states that a country cannot maintain a fixed exchange rate, allow free capital movement, and have authority over their monetary policy all at the same time. Since capital movement is nearly impossible to prevent, a country essentially has to choose between a fixed exchange rate and sovereign monetary policy. Therefore, larger economies would be more likely to choose a sovereign monetary policy and a floating exchange rate because they can use monetary policy to control unemployment and inflation. Melvin (1985), Savvides (1993), Rizzo (1998), Méon and Rizzo (2002), and Juhn and Mauro (2002) find a significant relationship between greater economic size (measured by real gross domestic product) and floating exchange rate regimes.

The literature on optimum currency areas also states that high openness to trade is likely to be associated with fixed exchange rates. When a country's economy is largely dependent on its exports and imports, there is an advantage to fixing their exchange rate. Fluctuations (i.e. appreciations or depreciations) in exchange rates with trading partners can affect the relative price of a country's exports under a floating exchange rate and make exports noncompetitive. A fixed exchange rate regime lessens the adverse affects of these foreign shocks. Dreyer (1978),

Savvides (1993), Honkapohja and Pikkarainen (1994), Bernhard and Leblang (1999), Juhn and Mauro (2002), and Von Hagen and Zhou (2005) all find a significant relationship between higher trade openness (measured by exports and imports divided by gross domestic product) and fixed exchange rate regimes.

Following this same logic, countries with a high geographical concentration of trade, meaning that a large percentage of exports flow to one or a few countries, are also more likely to choose a fixed rate over a floating rate. When a country's exports travel mostly to one or two countries, the exchange rate between those countries is pivotal. A change in the exchange rate with such trading partners can result in a significant shock to the stability of trade between the countries. Therefore, countries with a high geographic concentration of trade would be more apt to choose a fixed exchange rate regime. Dreyer (1978), Savvides (1993), Rizzo (1998), Méon and Rizzo (2002), and Juhn and Mauro (2002) find this relationship to be significant.

When relating exchange rate regime choice to the historical characteristics of a country, Juhn and Mauro (2002) suggest that political instability makes it more difficult for a country to uphold a fixed regime. Because a country with a fixed regime gives up control over their monetary policy, it would prove difficult for an instable government or central bank to sustain the predetermined exchange rate. Out of the seven papers that include a measure of political instability, six papers find it to be significantly related to floating exchange rates. Edwards (1996), Edwards (1998), Bernhard and Leblang (1999), Berger, de Haan, and Sturm (2000), Méon and Rizzo (2002), and Juhn and Mauro (2002) all find this significant relationship.

Similar to political instability, higher central bank independence variable is likely to be associated with a floating exchange rate regime. Countries with low central bank independence, meaning that the central bank is less free to operate without intervention from the central

government, would find it difficult to maintain a fixed exchange rate. Bernhard and Leblang (1999), Berger, de Haan and Sturm (2000), and Poirson (2001) all use the turnover rate of central bank governors as a proxy for central bank independence. These studies find significant relationships with both fixed and floating exchange rate regimes.

A country's inflation rate is another variable that is widely used and significant in most cases. However, the causal interpretation between inflation and exchange rate regimes is problematic. Juhn and Mauro (2002) explain that causality might run in both directions: high inflation might make it difficult for a country to sustain a fixed regime, but fixed exchange rates might also help to lower inflation. Caramazza and Aziz (1998) explain that a fixed exchange rate, so long as it is credible, lowers expected inflation due to confidence in the currency. Investors know the value of their investments and the authorities must keep their fiscal and monetary policy consistent with the peg. Savvides (1993), Edwards (1996), Edwards (1998), Rizzo (1998), Poirson (2001), and Juhn and Mauro (2002) all find a significant relationship between higher inflation rates and floating regimes. However, Von Hagen and Zhou (2005) find a significant relationship between higher inflation rates and fixed regimes.

The degree to which countries restrict capital movement is related to a fixed exchange rate. The more capital controls in a country, the greater the probability that they will peg their exchange rate. According to the "hollowing of the middle" hypothesis explained by Obstfeld and Rogoff (1995), greater capital mobility (i.e. fewer capital controls) prompts countries to move toward either end of the spectrum: either pure floats or pure fixes. Going back to the "unholy trinity" explanation, a country cannot allow free capital mobility, have sovereign monetary policy, and a fixed exchange rate. Bernhard and Leblang (1999) explain that governments often restrict capital mobility in order to maintain a fixed exchange rate and domestic monetary policy

autonomy. Edwards (1996), Bernhard and Leblang (1999), and Juhn and Mauro (2002) find a statistically significant relationship between stronger capital controls and a fixed exchange rate.

Countries with a high commodity concentration of trade (the share of exports that come from one or a few industries) are similar to those with a high geographic concentration of trade in that they are more likely to choose a fixed exchange rate. Since these countries are dependent on only one or a few types of exports, the exchange rate that they employ can greatly affect how much they export. For example, under a floating regime, when the exchange rate fluctuates, a shock to the stability of trade within a particularly important industry can result. Therefore, countries with a high commodity concentration of trade would be more likely to choose a fixed exchange rate. Although the aforementioned is the underlying theory, empirical evidence does not reach a consensus that is consistent with it. Dreyer (1978) and Honkapohja and Pikkarainen (1994) find a significant relationship between higher commodity concentration and a fixed exchange rate, but Savvides (1990), Poirson (2001), and Von Hagen and Zhou (2005) all find a significant relationship between higher commodity concentration and a floating exchange rate. This variable once again illustrates the inconclusive nature of exchange rate regime determinants.

The development level of a country is a controversial determinant of exchange rate regimes. A number of studies find development level (measured as real gross domestic product per capita) to be associated with a fixed exchange rate, and many other studies find it significantly related to floating exchange rates. According to Mundell's (1961) optimum currency area theory, as a country develops and grows in size, it is beneficial to adopt a floating exchange rate regime. Rogoff, Husain, Mody, Brooks, and Oomes (2003) explain that countries in the early stage of development gain credibility from a fixed exchange rate. As countries

develop economically, floating exchange rates offer higher growth without any cost in credibility. Savvides (1990), Edwards (1996), and Juhn and Mauro (2002) find a statistically significant relationship between higher development level and floating exchange rates.

III. Data

The data that this paper uses for the dependent variable comes from a de facto classification of exchange rate regimes compiled by Levy-Yeyati and Sturzenegger (2005). Each exchange rate regime is represented by its de facto degree of flexibility versus fixedness. This classification differs from the de jure classification announced by the International Monetary Fund (IMF) because it characterizes countries based on the regime that the country employs in practice versus in theory. For example, many countries that claim to have a flexible exchange rate regime often intervene in exchange markets so much so that in practice, little difference exists between them and countries that have announced fixed regimes.

Levy-Yeyati and Sturzenegger define exchange rate regimes according to the behavior of three variables: changes in the nominal exchange rate, the volatility of these changes, and the volatility of international reserves. The exchange rate regimes are classified into four ascending groups, from "most fixed" to "most floating": fixed, crawling peg, dirty float, and flexible. A fixed regime occurs when the exchange rate is relatively stable, but reserves fluctuate. A crawling peg corresponds to changes in the nominal exchange rate that occur in stable increments (i.e. low volatility in the rate of change of the exchange rate) while active intervention keeps the exchange rate along that path. A dirty float is associated with relatively high volatility in both international reserves and the nominal exchange rate, with intervention only partially smoothing exchange rate fluctuations. Finally, flexible regimes are characterized

by unlimited volatility in the nominal exchange rate, along with little intervention in the exchange rate markets (associated with few changes in international reserves). Due to the small number of countries that fall into the crawling peg and dirty float categories, this paper combines these groups to form an "intermediate" exchange rate regime classification that is used in all regressions, except for the binary logit. Figure 1 shows the number of countries employing each regime type in the years 1994, 1999, and 2004.

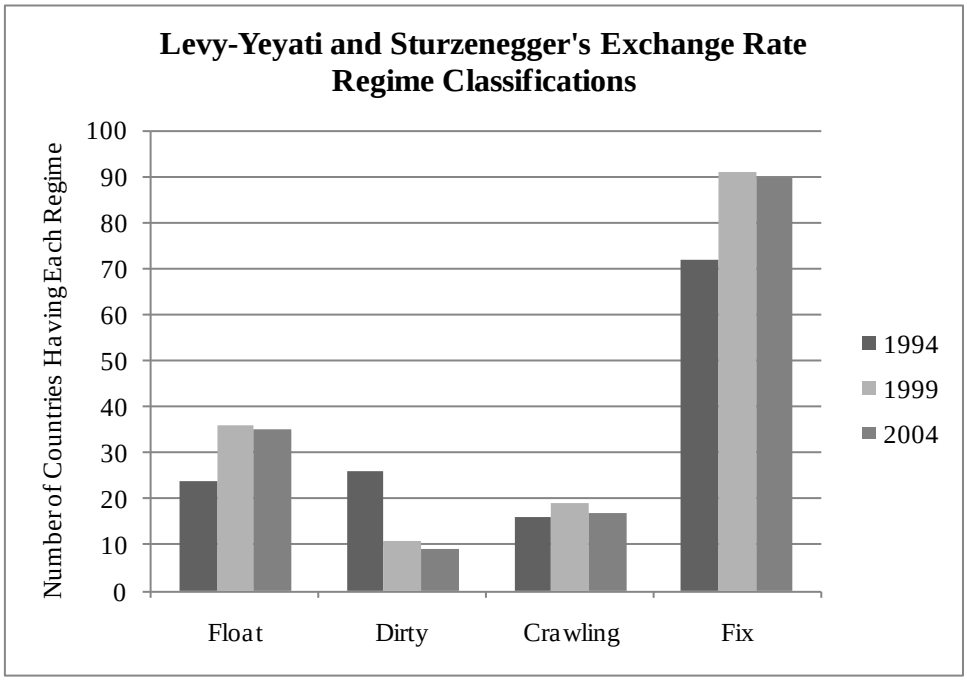

Figure 1. Exchange rate regimes in each year included in the study.

The use of a de facto exchange rate regime classification allows this paper to differentiate itself from previous empirical research. Most of the past research has used the International Monetary Fund's de jure classification system. According to Levy-Yeyati and Sturzenegger, about two-thirds of the observations are classified identically, while about one-third of the de facto observations different from the de jure observations.

Consistent with the International Monetary Fund's de jure classification system, the exchange rate regime choice determined by Levy-Yeyati and Sturzenegger is very stable from

year to year. Within the four-way classification that Levy-Yeyati and Sturzenegger construct, the regimes are somewhat constant over the years. As shown in Figure 2, of 151 countries with a determined classification in 1999 and 2004, 105 countries did not change their exchange rate regime from 1999 to 2004.

Figure 2. Changes in Exchange Rate Regimes[a]

	1994 -- 1999[b]	**1999 -- 2004**[b]	**1994 -- 2004**[b]
No Change	78	105	65
Move Towards Fixed	33	24	37
Move Towards Float	24	22	26
Unknown[c]	47	31	54
Total	182	182	182

a These changes are within Levy-Yeyati and Sturzenegger's Four Way Classification (i.e. Float, Dirty Float, Crawling Peg, and Fix)
b The 1994 -- 1999 column represents changes from 1994 to 1999, the 1999-2004 column represents changes from 1999 to 2004, and the 1994-2004 column represents changes from 1994 to 2004.
c 'Unknown' represents missing data or an 'Inconclusive' exchange rate regime.

This paper uses a cross section of countries in order to analyze the long-run determinants of exchange rate regime choice. Using panel data is problematic because of the unchanging nature of many potential variables. Several empirical studies have used cross sectional data as opposed to panel data, including Dreyer (1978), Melvin (1985), Honkapohja and Pikkarainen (1994), Edwards (1998), Rizzo (1998), Poirson (2001), and Juhn and Mauro (2002). In an attempt to ensure that the variables are determinants as opposed to outcomes, this paper takes an average of many of the explanatory variables five and ten years prior to the exchange rate regime in a given year.[6] Three medium-run averages and two long-run averages are calculated.

For the exchange rate regime in 1994, the determinants are averaged from 1989 to 1993 when available. If these years are not available, then similar years are used. The years 1994 to 1998 (or similar years) are used for the exchange rate regime in 1999, and the years 1999 to 2003 (or similar years) are used for the exchange rate regime in 2004. These three five year averages

[6] This certainly does not guarantee that endogeneity is a problem, i.e. that it is the exchange rate regime that determines the independent variables, but is consistent with previous attempts to attempt to minimize it.

are referred to as the medium-run determinants. For the long-run determinants, the years 1989 to 1998 (or similar years) are used for the exchange rate regime in 1999, and the years 1994 to 2003 are used for the exchange rate regime in 2004. Table 1 displays the independent variables that are used in this paper. Appendix 1A includes the description of how each variable was averaged.

Table 1. Independent Variable Definitions, Expected Signs, and Sources

Variable	Expected Sign	Definition	Source
Economic Size	Float (-)	Log of real gross domestic product in U.S. dollars (adjusted using the U.S. consumer price index).	IMF's *World Economic Outlook* Database
Trade Openness	Fix (+)	Exports in national currency plus imports in national currency divided by nominal GDP in national currency.	International Monetary Fund's *International Financial Statistics*
Geographic Concentration	Fix (+)	Exports to the largest trading partner as a share of total exports to the world.	IMF's *Direction of Trade Statistics*
Commodity Concentration	Fix (+)	Measured by the Herfindahl-Hirschmann index of exports. The index is normalized to take values ranging from 0 to 1 (maximum concentration).	Handbook of International Trade and Development Statistics (Various editions)
Current Account	Fix (+)	Measured as a percentage of GDP. Current account is all transactions other than those in financial and capital items.	IMF's *World Economic Outlook* Database
Fiscal Balance	Fix (+) / Float (-)	Government budget surplus or deficit as a share of GDP.	International Monetary Fund's *International Financial Statistics*
Majoritarian	Fix (+) / Float (-)	Takes the value of one if the country has a majoritarian electoral system and zero otherwise.	Persson and Tabellini (2003) and Blume, Müller, Voigt, and Wolf (2007)
Presidential	Float (-)	Takes the value of one if the country has a presidential form of government and zero otherwise.	Persson and Tabellini (2003) and Blume, Müller, Voigt, and Wolf (2009)
Political Rights	Float (-)	Measured on a one-to-seven scale with one representing the highest degree of Political Rights and seven the lowest.	Freedom House's *Freedom in the World* Survey
Civil Liberties	Float (-)	Measured on a one-to-seven scale with one representing the highest degree of Civil Liberties and seven the lowest.	Freedom House's *Freedom in the World* Survey
Nat Res Concentration	Fix (+)	Exports classified as 'Fuels' and 'Ores and metals' under the SITC classification as a percentage of total exports.	Handbook of International Trade and Development Statistics (Various editions)
Capital Controls	Fix (+)	Index of capital controls with one representing the highest level of controls and ten representing the lowest level.	Economic Freedom of the World: 2009 Annual Report
Central Bank Independence	Float (-)	Average annual central bank turnover rate in the period 1950-1989 if available. If not, then average annual turnover rate in the period 1980-1989.	De Haan and Kooi (2000) and Cukierman (1992)
Inflation	Fix (+) / Float (-)	Percentage rate change in the consumer price index.	IMF's *World Economic Outlook* Database
Development Level	Fix (+) / Float (-)	Log of real gross domestic product per capita in U.S. dollars (adjusted using the U.S. consumer price index).	IMF's *World Economic Outlook* Database
North America	Fix (+) / Float (-)	Geographic dummy that takes the value of one if the country is in the continent and zero otherwise.	CIA World Factbook
South America	Fix (+) / Float (-)	Geographic dummy that takes the value of one if the country is in the continent and zero otherwise.	CIA World Factbook
Europe	Fix (+) / Float (-)	Geographic dummy that takes the value of one if the country is in the continent and zero otherwise.	CIA World Factbook
Africa	Fix (+) / Float (-)	Geographic dummy that takes the value of one if the country is in the continent and zero otherwise.	CIA World Factbook
Asia	Fix (+) / Float (-)	Geographic dummy that takes the value of one if the country is in the continent and zero otherwise.	CIA World Factbook

Fix (+) / Float (-) means the relationship is unknown or ambiguous.

Table 2 presents summary statistics of these variables for the 2004 exchange rate regime using ten year averages. Appendix 1B displays the summary statistics for all other data.

Table 2. Summary Statistics of Independent Variables for the Exchange Rate Regime in 2004 (Ten Year Averages)

	Mean	Minimum	Maximum	Standard Deviation
Economic Size	1.79×10^{11}	6.87×10^{7}	9.37×10^{12}	8.14×10^{11}
Trade Openness	0.83	0.02	2.95	0.46
Geographic Concentration	0.30	0.09	0.86	0.14
Commodity Concentration	0.36	0.06	0.95	0.22
Current Account	-0.04	-0.43	0.37	0.08
Fiscal Balance	-0.30	0.10	0.10	3.06
Majoritarian	0.41	0.00	1.00	0.49
Presidential	0.34	0.00	1.00	0.48
Political Rights	3.49	1.00	7.00	2.11
Civil Liberties	3.61	1.00	7.00	1.73
Nat Res Concentration	0.20	0.00	1.00	0.27
Capital Controls	3.57	0.00	9.74	3.01
Central Bank Independence	0.26	0.00	1.10	0.20
Inflation	0.29	-0.10	8.54	0.92
Development Level	6401.93	119.96	50805.71	9825.86

Consistent with previous theory and evidence, *Trade Openness*, *Geographic Concentration*, *Commodity Concentration*, *Current Account*, and *Capital Controls* are expected to be associated with fixed exchange rate regimes. On the other hand, *Economic Size*, *Inflation*, *Presidential*, *Central Bank Independence* and political instability[7] are expected to be associated with floating exchange rate regimes.

The variable *Nat Res Concentration* represents the amount of natural resources a country exports as a percentage of total exports. This variable has not been previously used as a determinant of exchange rate regimes in any empirical studies. Larger natural resource concentration is expected to be associated with a fixed exchange rate following the theory of the "resource curse hypothesis," which makes the claim that countries with an abundance of natural resources tend to grow slower than resource-poor countries.[8] The Dutch Disease is one of the named causes of this slow growth. Resource-rich countries experience a large inflow of foreign

[7] Political instability is measured by an average of the variables *Political Rights* and *Civil Liberties* in a country.
[8] See Sachs and Warner (1997), Sachs and Warner (2001), Atkinson and Hamilton (2003), and Lartey (2007) for literature on the resource curse hypothesis.

currency (to purchase the natural resource), which causes the exchange rate to appreciate, subsequently making all other exports in the country noncompetitive. Under a fixed exchange rate regime, the exchange rate would not fluctuate, so it could be possible for countries to prevent these adverse effects.

The variables *Majoritarian* and *Presidential* are dummy variables representing a majoritarian electoral system (as opposed to a proportional system) and a presidential government (as opposed to a parliamentary government). Bernhard and Leblang (1999) explain that proportional representation systems (i.e. *not* majoritarian systems) produce weaker and less durable governments more often than majoritarian systems, which suggests that countries with proportional systems will be more likely to adopt a fixed exchange rate. If a proportional system of government is more likely to adopt a fixed exchange rate, then a majoritarian system of government is more likely to adopt floating exchange rates. However, weak or instable governments often cannot sustain a fixed exchange, which implies that countries with majoritarian electoral systems might be more likely to fix the exchange rate.

Bernhard and Leblang also explain that the exogeneity of electoral timing affects the incentives of governing parties in presidential and parliamentary systems. For example, in parliamentary systems where the electoral timing is endogenous, meaning that the governing parties can decide to call for an election at any time, politicians will attempt to optimize the timing of an election based on economic conditions, among other things. Politicians do not need to use monetary policy to ensure an economic boom; therefore, parliamentary systems are more likely to choose a fixed exchange rate and give up control over monetary policy. On the other hand, in presidential systems where the electoral timing is exogenous, politicians have more of an incentive to use monetary policy to manipulate the economic environment. Therefore,

presidential systems will be less likely to give up control of monetary policy to adopt a fixed exchange rate regime and more likely to adopt a floating exchange rate regime.

The variable *Current Account* is similar to *Trade Openness* in that it measures how dependent a country is on exports relative to imports. If a country has a higher current account balance (measured as current account as a share of gross domestic product), it is more likely that they will adopt a fixed exchange rate. Empirical evidence does not fully support this idea, however. Edwards (1998) finds a significant relationship between current account balance and a fixed exchange rate, and Rizzo (1998) finds a significant relationship between current account balance and floating exchange rates.

The variable *Fiscal Balance* is another controversial variable in that it can be associated with either fixed or floating exchange rate regimes. On one hand, this variable is expected to be associated with floating exchange rates following the idea that governments with large deficits are not willing to give up control of their monetary policy. Large debts often mirror instable governments who are unwilling or incapable of maintaining a fixed exchange rate regime. However, on the other hand, governments with large deficits would benefit from adopting a fixed exchange rate regime and giving up monetary policy autonomy. This would "tie the hands" of the government and possibly decrease spending. Rizzo (1998) finds a significant relationship between government balance and a fixed exchange rate.

IV. Methodology

In cases where the dependent variable represents three different regimes (i.e. "floating", "intermediate", and "fixed"), an ordered logit model is used. This model is necessary because of the increasing degree of fixedness of the dependent variable. A "floating" regime takes the value

of one, an "intermediate" regime takes the value of two, and a "fixed" regime takes the value of three in the ordered logit regressions. In cases where the dependent variable only represents two regimes, a binary logit model is used. The "intermediate" exchange rate regime category was dropped in this regression in order to analyze the effects of strictly "floating" and "fixed" regimes. A "floating" regime takes the value of zero and a "fixed" regime takes the value of one.

In order to determine the most relevant and significant determinants of exchange rate regimes, I perform a sensitivity analysis similar to that undertaken by Juhn and Mauro (2002). First, all of the potential determinants are included in the ordered logit regressions. Five regressions are performed in the following years: 1994 with the determinants averaged from the previous five years, 1999 with the determinants averaged from the previous five years, 2004 with the determinants averaged from the previous five years, 1999 with the determinants averaged from the previous ten years, and finally 2004 with the determinants averaged from the previous ten years. Due to the large number of variables included, the number of observations in these regressions is less than satisfactory. Missing data for various countries and various years caused the number of observations to vary from regression to regression. Juhn and Mauro explain that with all these variables in the regression, one would be unlikely to find significant results.

Another reason for performing the sensitivity analysis is that it is less susceptible to multicollinearity problems between the independent variables. As shown in Appendix 2A, correlation exists between some variables including *Development Level* and *Economic Size*, *Political-Civil Rights* and *Commodity Concentration*, and *Economic Size* and *Commodity Concentration.*[9]

In order to look specifically at a smaller subset of potential determinants, I select three variables to use as a baseline in each regression, and then add every other explanatory variable

[9] Correlation matrices for the other years and averages provide similar results so they were not included in the paper.

one by one, so that each regression has four independent variables. The choice of the baseline variables follows that of Juhn and Mauro, who use economic size, trade openness, and geographic concentration of trade. These three variables have been used by many previous studies, have solid theoretical underpinning, and are available for a large number of countries. Again, the years 1994, 1999 and 2004 are used with both the medium-run (5 years) and long-run (10 years) determinants.

V. Results

Table 4 shows results for the ordered logit regressions that include all of the possible determinants in the years 1994, 1999, and 2004 including the five and ten year averages. As expected, most determinants turn out to be insignificant even at a 10% level of significance. *Fiscal Balance* and *Commodity Concentration* are the most robust determinants, each appearing significant in four of the five regressions. *Commodity Concentration* is consistently associated with a fixed exchange rate regime, as predicted. *Fiscal Balance*, however, is statistically significantly associated with a floating exchange rate regime in three regressions and statistically significantly associated with a fixed exchange rate regime in one regression.

Geographic Concentration appears significant in the regressions using the exchange rate regime in 2004 as the dependent variable, but with the opposite sign than expected. The political variables of *Majoritarian* and *Political-Civil Rights*[10] are also statistically significantly different from zero in the 2004 regressions. *Majoritarian* does not have an expected relationship, but it appears to be associated with floating exchange rates. *Political-Civil Rights* is expected to be

[10] The variable *Political-Civil Rights* is the average of the variables *Political Rights* and *Civil Liberties*, explained in Table 1.

associated with floating exchange rates, but it appears to be significantly associated with a fixed rate.

The variable *Capital Controls* also exhibits significance in three of the five regressions, but with the opposite sign than expected, which suggests that countries with a high amount of capital controls are more likely to adopt a floating exchange rate regime.

Tables 5 through 9 each present the results of thirteen regressions using an ordered logit model: one with just the baseline and 12 with the baseline adding a fourth variable. Table 10 also presents the results of thirteen regressions, but uses a binary logit model. The "intermediate" exchange rate regime classification was removed in these regressions to analyze only "fixed" exchange rate regimes and "floating" exchange rate regimes.

Table 4. Ordered Logit Results

	(1)	(2)	(3)	(4)	(5)
Year	**1994**	**1999**	**2004**	**1999**	**2004**
Time	**5 Year Averages**	**5 Year Averages**	**5 Year Averages**	**10 Year Averages**	**10 Year Averages**
Economic Size	-2.496	-0.204	-0.501	0.261	-0.151
	(1.692)	(0.463)	(0.495)	(0.600)	(0.449)
Trade Openness	5.947	3.513*	1.554	6.199**	0.584
	(4.324)	(1.887)	(1.906)	(2.524)	(1.561)
Geographic Concentration	1.107	-7.229	-15.705***	-5.623	-13.040**
	(17.273)	(4.486)	(6.110)	(4.782)	(5.392)
Commodity Concentration	1.677	10.999**	19.218**	13.997*	24.562***
	(12.264)	(5.515)	(8.057)	(8.008)	(8.825)
Current Account	20.988	-0.289	-9.148	8.264	4.544
	(44.641)	(9.132)	(12.377)	(12.775)	(10.830)
Fiscal Balance	-100.855*	-46.443**	54.679*	-72.389**	-8.403
	(58.498)	(20.740)	(30.252)	(32.010)	(24.712)
Majoritarian	1.683	-0.161	-2.793**	0.663	-2.179*
	(2.298)	(1.207)	(1.427)	(1.472)	(1.313)
Presidential	-8.332**	-0.478	-0.437	0.319	-0.957
	(3.372)	(1.081)	(1.260)	(1.396)	(1.123)
Political-Civil Rights	-1.249	-0.150	2.222***	-0.642	1.306**
	(1.670)	(0.602)	(0.839)	(0.684)	(0.624)
Nat Res Concentration	-14.519	-4.827	6.252	-5.727	6.261
	(8.912)	(3.876)	(6.351)	(3.886)	(5.306)
Capital Controls	-0.816*	-0.341***	-0.099	-0.474***	-0.177
	(0.452)	(0.131)	(0.127)	(0.163)	(0.133)
Central Bank Independence	5.829	3.706*	-0.018	3.061	0.476
	(4.141)	(2.141)	(2.682)	(2.433)	(2.472)
Inflation	0.298	-4.883*	-1.696	2.604	-9.699*
	(0.197)	(2.908)	(7.403)	(3.275)	(5.390)
Development Level	-2.456	0.405	1.075	0.261	0.757
	(2.304)	(0.601)	(0.783)	(0.723)	(0.674)
North America	-7.828	-3.011	0.161	-4.606	-0.146
	(23.093)	(2.829)	(2.696)	(3.456)	(2.743)
South America	-6.491	-1.607	-6.263*	-2.890	-6.799**
	(23.286)	(2.471)	(3.316)	(2.913)	(3.231)
Europe	3.067	-0.909	0.621	-2.083	1.315
	(22.629)	(2.290)	(2.692)	(2.595)	(2.569)
Africa	-22.705	-2.562	-3.960	-2.771	-4.736
	(24.158)	(2.834)	(3.183)	(3.108)	(3.224)
Asia	-7.642	-3.461	-1.989	-5.586*	-3.42
	(22.677)	(2.801)	(2.849)	(3.382)	(2.906)
Cut #1	-91.299	-2.832	-2.409	9.410	2.821
	(58.789)	(10.356)	(14.863)	(12.900)	(10.721)
Cut #2	-89.035	-1.316	0.132	10.905	4.956
	(58.711)	(10.350)	(14.852)	(12.942)	(10.741)
Observations	46	56	47	53	56
Chi ^{2}	54.16	40.88	43.49	43.41	48.97
P-Value	0.0000	0.0025	0.0011	0.0011	0.0002
Pseudo R^2	0.5675	0.3485	0.4224	0.3986	0.4069

Ordered Logit Model in the years 1994, 1999, and 2004 using both five and ten year averages of the determinants. Coefficient estimates with standard errors in parentheses. *** significant at 1%; ** significant at 5%; * significant at 10%.

Table 5. Ordered Logit Results with the 1994 Exchange Rate Regime (Five Year Averages)

	Exp. Sign	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Economic Size	Float (-)	-0.078	-0.030	-0.050	-0.054	-0.159	-0.177	-0.124	-0.176*	0.000	-0.003	-0.063	-0.336***	-0.322***
		(0.084)	(0.101)	(0.091)	(0.105)	(0.106)	(0.109)	(0.096)	(0.096)	(0.103)	(0.103)	(0.087)	(0.129)	(0.110)
Trade Openness	Fix (+)	1.275***	1.327***	1.335***	1.323**	1.201*	0.779	1.203**	1.159**	1.807***	0.952*	1.445***	0.452	0.326
		(0.489)	(0.502)	(0.496)	(0.549)	(0.615)	(0.612)	(0.533)	(0.534)	(0.655)	(0.575)	(0.535)	(0.520)	(0.484)
Geographic Concentration	Fix (+)	0.853	0.582	0.977	0.308	1.304	1.548	0.890	-1.904	0.538	0.597	0.816	0.776	1.445
		(0.953)	(0.978)	(0.983)	(1.011)	(1.109)	(1.213)	(0.955)	(1.568)	(1.009)	(0.985)	(0.967)	(0.934)	(1.092)
Commodity Concentration	Fix (+)	-	0.942	-	-	-	-	-	-	-	-	-	-	-
			(1.017)											
Current Account	Fix (+)	-	-	-1.857	-	-	-	-	-	-	-	-	-	-
				(2.206)										
Fiscal Balance	Fix/Float	-	-	-	-17.805***	-	-	-	-	-	-	-	-	-
					(6.598)									
Majoritarian	Fix/Float	-	-	-	-	-0.563	-	-	-	-	-	-	-	-
						-0.468								
Presidential	Float (-)	-	-	-	-	-	-0.949**	-	-	-	-	-	-	-
							(0.482)							
Political-Civil Rights	Float (-)	-	-	-	-	-	-	-0.102	-	-	-	-	-	-
								(0.107)						
Nat Res Concentration	Fix (+)	-	-	-	-	-	-	-	0.689	-	-	-	-	-
									(0.687)					
Capital Controls	Fix (+)	-	-	-	-	-	-	-	-	-0.042	-	-	-	-
										(0.069)				
Central Bank Independence	Float (-)	-	-	-	-	-	-	-	-	-	-1.289	-	-	-
											(1.082)			
Inflation	Fix/Float	-	-	-	-	-	-	-	-	-	-	0.032	-	-
												(0.032)		
Development Level	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	0.511***	-
													(0.189)	
North America	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	-0.996
														(1.297)
South America	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	-2.032
														(1.307)
Europe	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	0.118
														(1.282)
Africa	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	-2.277*
														(1.246)
Asia	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	-0.158
														(1.270)
Cut #1		-2.104	-0.660	-1.298	-1.231	-4.149	-4.971	-3.587	-5.243	-0.027	-0.534	-1.517	-4.837	-9.578
Cut #2		-0.474	0.921	0.336	0.329	-2.508	-3.294	-1.913	-3.657	1.611	0.636	0.082	-3.137	-7.713
Observations		122	120	122	89	82	82	119	101	93	84	113	122	122

Coefficient estimates with standard errors in parentheses. *** significant at 1%; ** significant at 5%; * significant at 10%. Fix/Float illustrates an ambiguous relationship.

Table 6. Ordered Logit Results with the 1999 Exchange Rate Regime (Five Year Averages)

	Exp. Sign	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Economic Size	Float (-)	-	-0.185*	-0.272***	-0.184*	-0.303***	-0.302***	-0.292***	-0.159	-0.191*	-0.158	-0.303***	-0.585***	-0.250**
		(0.086)	(0.097)	(0.099)	(0.109)	(0.116)	(0.114)	(0.093)	(0.097)	(0.103)	(0.109)	(0.090)	(0.138)	(0.099)
Trade Openness	Fix (+)	1.557***	1.694***	1.552***	1.754***	1.531**	1.262*	1.530***	1.863***	2.070***	2.319***	1.494***	0.613	1.481***
		(0.522)	(0.553)	(0.522)	(0.654)	(0.679)	(0.684)	(0.563)	(0.612)	(0.668)	(0.842)	(0.547)	(0.544)	(0.558)
Geographic Concentration	Fix (+)	-	-4.662***	-3.886***	-7.808***	-4.314**	-3.936**	-3.736***	-4.415***	-3.861**	-4.619***	-3.885***	-4.351***	-3.851***
		(1.301)	(1.421)	(1.302)	(2.103)	(1.706)	(1.684)	(1.300)	(1.440)	(1.668)	(1.677)	(1.333)	(1.361)	(1.437)
Commodity Concentration	Fix (+)	-	1.827**	-	-	-	-	-	-	-	-	-	-	-
			(0.930)											
Current Account	Fix (+)	-	-	0.382	-	-	-	-	-	-	-	-	-	-
				(2.791)										
Fiscal Balance	Fix/Float	-	-	-	1.848	-	-	-	-	-	-	-	-	-
					(8.047)									
Majoritarian	Fix/Float	-	-	-	-	-0.381	-	-	-	-	-	-	-	-
						(0.456)								
Presidential	Float (-)	-	-	-	-	-	-0.605	-	-	-	-	-	-	-
							(0.452)							
Political-Civil Rights	Float (-)	-	-	-	-	-	-	-0.070	-	-	-	-	-	-
								(0.101)						
Nat Res Concentration	Fix (+)	-	-	-	-	-	-	-	0.226	-	-	-	-	-
									(0.650)					
Capital Controls	Fix (+)	-	-	-	-	-	-	-	-	-0.123**	-	-	-	-
										(0.060)				
Central Bank Independence	Float (-)	-	-	-	-	-	-	-	-	-	0.542	-	-	-
											(1.115)			
Inflation	Fix/Float	-	-	-	-	-	-	-	-	-	-	-2.597***	-	-
												(0.863)		
Development Level	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	0.572***	-
													(0.182)	
North America	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	0.811
														(1.211)
South America	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	0.107
														(1.217)
Europe	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	0.937
														(1.145)
Africa	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	1.013
														(1.159)
Asia	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	0.683
														(1.129)
Cut #1		-7.504	-5.153	-7.678	-6.617	-8.602	-8.773	-8.322	-4.797	-5.717	-4.459	-8.907	-11.543	-6.413
Cut #2		-6.430	-4.027	-6.603	-5.454	-7.536	-7.691	-7.227	-3.694	-4.660	-3.411	-7.793	-10.391	-5.317
Observations		145	141	145	107	96	96	142	123	110	94	143	145	145

Coefficient estimates with standard errors in parentheses. *** significant at 1%; ** significant at 5%; * significant at 10%. Fix/Float illustrates an ambiguous relationshi

Table 7. Ordered Logit Results with the 2004 Exchange Rate Regime (Five Year Averages)

	Exp. Sign	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Economic Size	Float (-)	-0.192**	-0.063	-0.235**	-0.317**	-0.204	-0.196*	-0.161*	-0.182**	-0.187*	-0.134	-0.199**	-0.397***	-0.163
		(0.086)	(0.101)	(0.101)	(0.130)	(0.106)	(0.103)	(0.093)	(0.089)	(0.104)	(0.108)	(0.087)	(0.132)	(0.102)
Trade Openness	Fix (+)	1.405***	1.680***	1.378***	0.860	1.294	1.221**	1.742***	1.384***	1.506***	1.881**	1.370***	0.732	1.362**
		(0.497)	(0.539)	(0.502)	(0.588)	(0.587)	(0.613)	(0.605)	(0.512)	(0.576)	(0.741)	(0.511)	(0.534)	(0.548)
Geographic Concentration	Fix (+)	-2.091*	-2.447**	-2.070*	-4.019***	-2.021	-1.841	-1.926	-2.048*	-2.138	-2.827*	-1.841	-2.287*	-2.286
		(1.173)	(1.226)	(1.178)	(1.504)	(1.368)	(1.381)	(1.180)	(1.203)	(1.384)	(1.480)	(1.182)	(1.199)	(1.449)
Commodity Concentration	Fix (+)	-	2.596**	-	-	-	-	-	-	-	-	-	-	-
			(1.070)											
Current Account	Fix (+)	-	-	2.360	-	-	-	-	-	-	-	-	-	-
				(2.800)										
Fiscal Balance	Fix/Float	-	-	-	18.771**	-	-	-	-	-	-	-	-	-
					(8.135)									
Majoritarian	Fix/Float	-	-	-	-	-0.241	-	-	-	-	-	-	-	-
						(0.446)								
Presidential	Float (-)	-	-	-	-	-	-0.230	-	-	-	-	-	-	-
							(0.456)							
Political-Civil Rights	Float (-)	-	-	-	-	-	-	0.126	-	-	-	-	-	-
								(0.111)						
Nat Res Concentration	Fix (+)	-	-	-	-	-	-	-	0.883	-	-	-	-	-
									(0.703)					
Capital Controls	Fix (+)	-	-	-	-	-	-	-	-	-0.101*	-	-	-	-
										(0.061)				
Central Bank Independence	Float (-)	-	-	-	-	-	-	-	-	-	0.497	-	-	-
											(1.248)			
Inflation	Fix/Float	-	-	-	-	-	-	-	-	-	-	-4.021*	-	-
												(2.346)		
Development Level	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	0.378**	-
													(0.177)	
North America	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	1.140
														(1.241)
South America	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	0.012
														(1.299)
Europe	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	1.253
														(1.176)
Africa	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	1.438
														(1.174)
Asia	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	0.567
														(1.146)
Cut #1		-5.203	-1.202	-6.291	-9.603	-5.463	-5.285	-3.725	-4.799	-5.390	-3.560	-5.545	-7.752	-3.645
Cut #2		-4.243	-0.194	-5.326	-8.388	-4.494	-4.318	-2.740	-3.773	-4.315	-2.407	-4.563	-6.760	-2.639
Observations		130	128	130	86	90	90	127	121	100	88	130	130	130

Coefficient estimates with standard errors in parentheses. *** significant at 1%; ** significant at 5%; * significant at 10%. Fix/Float illustrates an ambiguous relationship.

Table 8. Ordered Logit Results with the 1999 Exchange Rate Regime (Ten Year Averages)

	Exp. Sign	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Economic Size	Float (-)	-0.199**	-0.119	-0.178*	-0.111	-0.204*	-0.221**	-0.217**	-0.162*	-0.107	-0.079	-0.256***	-0.488***	-0.184*
		(0.084)	(0.095)	(0.100)	(0.105)	(0.111)	(0.112)	(0.094)	(0.095)	(0.099)	(0.106)	(0.095)	(0.134)	(0.097)
Trade Openness	Fix (+)	1.674***	1.798***	1.710***	1.775***	1.777**	1.468**	1.718***	1.788***	2.068***	2.447***	1.874***	0.667	1.742***
		(0.535)	(0.561)	(0.544)	(0.641)	(0.703)	(0.712)	(0.588)	(0.601)	(0.676)	(0.841)	(0.657)	(0.576)	(0.601)
Geographic Concentration	Fix (+)	-1.165	-1.711*	-1.134	-3.586**	-0.687	-0.533	-1.067	-1.969*	-0.797	-0.665	-1.061	-1.318	-0.928
		(0.947)	(1.027)	(0.949)	(1.511)	(1.062)	(1.082)	(0.950)	(1.110)	(1.292)	(1.034)	(0.980)	(0.976)	(1.010)
Commodity Concentration	Fix (+)	-	1.828*	-	-	-	-	-	-	-	-	-	-	-
			(0.948)											
Current Account	Fix (+)	-	-	-1.221	-	-	-	-	-	-	-	-	-	-
				(3.106)										
Fiscal Balance	Fix/Float	-	-	-	-4.547	-	-	-	-	-	-	-	-	-
					(7.153)									
Majoritarian	Fix/Float	-	-	-	-	-0.245	-	-	-	-	-	-	-	-
						0.442								
Presidential	Float (-)	-	-	-	-	-	-0.688	-	-	-	-	-	-	-
							(0.444)							
Political-Civil Rights	Float (-)	-	-	-	-	-	-	-0.038	-	-	-	-	-	-
								(0.106)						
Nat Res Concentration	Fix (+)	-	-	-	-	-	-	-	-0.208	-	-	-	-	-
									(0.633)					
Capital Controls	Fix (+)	-	-	-	-	-	-	-	-	-0.150**	-	-	-	-
										(0.062)				
Central Bank Independence	Float (-)	-	-	-	-	-	-	-	-	-	-0.378	-	-	-
											(1.054)			
Inflation	Fix/Float	-	-	-	-	-	-	-	-	-	-	-1.850**	-	-
												(0.833)		
Development Level	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	0.532***	-
													(0.184)	
North America	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	0.178
														(1.183)
South America	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	-0.066
														(1.203)
Europe	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	0.828
														(1.145)
Africa	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	1.002
														(1.157)
Asia	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	0.567
														(1.127)
Cut #1		-5.035	-2.642	-4.434	-3.468	-4.882	-5.701	-5.518	-4.323	-2.884	-1.547	-6.689	-8.558	-3.979
Cut #2		-4.009	-1.570	-3.408	-2.407	-3.874	-4.671	-4.471	-3.338	-1.872	-0.555	-5.690	-7.473	-2.919
Observations		146	142	146	107	97	97	143	123	110	94	128	146	146

Coefficient estimates with standard errors in parentheses. *** significant at 1%; ** significant at 5%; * significant at 10%. Fix/Float illustrates an ambiguous relationship.

Table 9. Ordered Logit Results with the 2004 Exchange Rate Regime (Ten Year Averages)

	Exp. Sign	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Economic Size	Float (-)	-0.234***	-0.051	-0.280***	-0.218**	-0.209*	-0.205*	-0.215**	-0.235***	-0.217**	-0.168	-0.269***	-0.459***	-0.185*
		(0.086)	(0.105)	(0.103)	(0.109)	(0.108)	(0.106)	(0.092)	(0.086)	(0.105)	(0.107)	(0.088)	(0.134)	(0.102)
Trade Openness	Fix (+)	1.328***	1.719***	1.292***	1.128*	1.398**	1.320**	1.544***	1.341***	1.592***	1.820**	1.242**	0.593	1.381**
		(0.492)	(0.550)	(0.492)	(0.605)	(0.632)	(0.657)	(0.579)	(0.486)	(0.598)	(0.744)	(0.504)	(0.535)	(0.554)
Geographic Concentration	Fix (+)	-2.312*	-2.730**	-2.316*	-5.082***	-2.449	-2.288	-2.134*	-2.321*	-2.800*	-2.974*	-2.472*	-2.627**	-2.244
		(1.258)	(1.327)	(1.266)	(1.670)	(1.513)	(1.518)	(1.262)	(1.273)	(1.532)	(1.538)	(1.291)	(1.295)	(1.533)
Commodity Concentration	Fix (+)	-	3.581***	-	-	-	-	-	-	-	-	-	-	-
			(1.211)											
Current Account	Fix (+)	-	-	2.594	-	-	-	-	-	-	-	-	-	-
				(3.097)										
Fiscal Balance	Fix/Float	-	-	-	12.169	-	-	-	-	-	-	-	-	-
					(8.646)									
Majoritarian	Fix/Float	-	-	-	-	-0.157	-	-	-	-	-	-	-	-
						(0.442)								
Presidential	Float (-)	-	-	-	-	-	-0.210	-	-	-	-	-	-	-
							(0.451)							
Political-Civil Rights	Float (-)	-	-	-	-	-	-	0.087	-	-	-	-	-	-
								(0.108)						
Nat Res Concentration	Fix (+)	-	-	-	-	-	-	-	1.022	-	-	-	-	-
									(0.679)					
Capital Controls	Fix (+)	-	-	-	-	-	-	-	-	-0.120*	-	-	-	-
										(0.063)				
Central Bank Independence	Float (-)	-	-	-	-	-	-	-	-	-	-2.973	-	-	-
											(1.227)			
Inflation	Fix/Float	-	-	-	-	-	-	-	-	-	-	-2.435**	-	-
												(1.157)		
Development Level	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	0.416**	-
													(0.180)	
North America	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	1.005
														(1.214)
South America	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	-0.094
														(1.291)
Europe	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	1.232
														(1.168)
Africa	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	1.516
														(1.164)
Asia	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	0.534
														(1.135)
Cut #1		-6.415	-0.779	-7.632	-7.336	-5.667	-5.622	-5.437	-6.244	-6.388	-4.614	-7.701	-9.232	-4.261
Cut #2		-5.477	0.224	-6.690	-6.195	-4.706	-4.660	-4.481	-5.291	-5.326	-3.485	-6.717	-8.261	-3.273
Observations		137	135	137	101	92	92	134	137	105	91	135	137	137

Coefficient estimates with standard errors in parentheses. *** significant at 1%; ** significant at 5%; * significant at 10%. Fix/Float illustrates an ambiguous relationship.

Table 10. Binomial Logit Results with the 2004 Exchange Rate Regime (Ten Year Averages, Fixed and Floating Only)

	Exp. Sign	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Economic Size	Float (-)	-0.218**	0.049	-0.267**	-0.198	-0.189	-0.183	-0.199*	-0.224**	-0.180	-0.148	-0.264***	-0.479***	-0.159
		(0.097)	(0.138)	(0.117)	(0.130)	(0.123)	(0.121)	(0.105)	(0.097)	(0.123)	(0.120)	(0.103)	(0.163)	(0.116)
Trade Openness	Fix (+)	1.258**	1.678**	1.218**	1.088	1.447*	1.381	1.438**	1.215**	1.713**	1.914*	1.201*	0.467	1.354*
		(0.611)	(0.697)	(0.611)	(0.778)	(0.796)	(0.843)	(0.699)	(0.586)	(0.797)	(0.987)	(0.649)	(0.641)	(0.694)
Geographic Concentration	Fix (+)	-1.854	-2.805	-1.934	-5.332**	-2.022	-2.005	-1.753	-2.127	-2.241	-2.800	-1.910	-2.290	-2.099
		(1.495)	(1.725)	(1.519)	(2.469)	(1.893)	(1.899)	(1.508)	(1.576)	(2.025)	(1.860)	(1.530)	(1.567)	(1.843)
Commodity Concentration	Fix (+)	-	5.111***	-	-	-	-	-	-	-	-	-	-	-
			(1.916)											
Current Account Balance	Fix (+)	-	-	3.011	-	-	-	-	-	-	-	-	-	-
				(3.833)										
Fiscal Balance	Fix/Float	-	-	-	7.031	-	-	-	-	-	-	-	-	-
					(10.438)									
Majoritarian	Fix/Float	-	-	-	-	-0.231	-	-	-	-	-	-	-	-
						(0.552)								
Presidential	Float (-)	-	-	-	-	-	-0.182	-	-	-	-	-	-	-
							(0.601)							
Political-Civil Rights	Float (-)	-	-	-	-	-	-	0.087	-	-	-	-	-	-
								(0.134)						
Nat Res Concentration	Fix (+)	-	-	-	-	-	-	-	1.393	-	-	-	-	-
									(0.939)					
Capital Controls	Fix (+)	-	-	-	-	-	-	-	-	-0.183**	-	-	-	-
										(0.089)				
Central Bank Independence	Float (-)	-	-	-	-	-	-	-	-	-	0.225	-	-	-
											(1.561)			
Inflation	Fix/Float	-	-	-	-	-	-	-	-	-	-	-2.608**	-	-
												(1.214)		
Development Level	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	0.488**	-
													(0.230)	
North America	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	1.390
														(1.358)
South America	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	-0.171
														(1.316)
Europe	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	1.246
														(1.187)
Africa	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	1.961
														(1.232)
Asia	Fix/Float	-	-	-	-	-	-	-	-	-	-	-	-	0.527
														(1.150)
Observations		112	110	112	79	74	74	109	112	83	70	110	112	112

Binomial logit estimates using only countries having "floating" or "fixed" exchange rate regimes in 2004. Coefficient estimates with standard errors in parentheses. *** significant at 1%; ** significant at 5%; * significant at 10%. Fix/Float represents an ambiguous relationship.

Table 5 displays the results for an ordered logit regression using exchange rate regimes in 1994 as the dependent variable. Trade openness is by far the most robust determinant, appearing statistically significantly different from zero in ten of the thirteen regressions with all signs consistent with the expected sign. This suggests that countries that are more open to trade tend to adopt a fixed exchange rate. Fiscal balance and development level appear significant at a 10% level of significance. Economic size only appears significant in three of the thirteen regressions (or 23%). In this regression, geographic concentration does not appear significant in any regressions, but the sign was consistent with the expected.

Table 6 displays the results of the ordered logit regression using the exchange rate regime in 1999 as the dependent variable. Again, trade openness is the most robust determinant, appearing significant in twelve of the thirteen regressions (or 92%). Both economic size and geographic concentration show more significance in the 1999 five year regression as opposed to the 1994 five year regression. Although geographic concentration is significant in all thirteen of the regressions, the sign is not consistent with the expected sign in any of them. Economic size is significant in 85% of the regressions (or eleven out of thirteen). Inflation and development level both appear significant at a 1% level. Inflation is associated with a floating exchange rate and development level is associated with a fixed exchange rate.

Table 7 displays the results of the ordered logit regression using the exchange rate regime in 2004 as the dependent variable. Similar to the previous set of regressions, the three baseline variables exhibit the most significance. Geographic concentration and economic size are significantly associated with a floating exchange rate regime, whereas fiscal balance, development level, and commodity concentration are significantly associated with a fixed exchange rate regime.

Table 8 and Table 9 display the results of the ordered logit regressions using ten year averages of the independent variables with the exchange rate regime in 1999 and 2004, respectively. Trade openness continues to show the most significance with all signs consistent with a fixed exchange rate. Geographic concentration also continues to appear statistically significant with signs opposite of both theory and past research. Economic size is consistent with the theory that states that larger economies tend to adopt a floating exchange rate regime.

Table 10 displays the results of the binary logit regressions using the exchange rate regime in 2004 as the dependent variable and ten year averages of the determinants. Trade openness is again the most significant variable, with economic size following next. Geographic concentration is only significant once and the sign is still opposite of what is expected. Removing the intermediate group did not greatly affect the data.

Table 11 aggregates the findings of all previous tables. The most robust relationships are economic size with a floating exchange rate regime and trade openness with a fixed exchange rate regime. Commodity concentration shows a significant relationship with a fixed exchange rate in five of the six aforementioned regressions (not including Table 4) and ten of the twelve total regressions. Capital controls appears related to a floating exchange rate regime in nine of the twelve total regressions, opposite of the prediction.

The absence of robust and significant relationships is not surprising given to the lack of robust predictors from past research. This study is consistent with other studies that find the baseline variables significant and the other explanatory variables insignificant in most cases.

Table 11. Overall Results

Variable	Regressions Included	Positive and Signficant (Fix)	Negative and Signficant (Float)	Insignificant	Percent Significant
Economic Size	96	0	55	41	57%
Trade Openness	96	78	0	18	81%
Geographic Concentration	96	0	37	59	39%
Commodity Concentration	12	10	0	2	83%
Current Account	12	0	0	12	0%
Fiscal Balance	12	2	4	6	50%
Majoritarian	12	0	2	10	17%
Presidential	12	0	2	10	17%
Political-Civil Rights	12	2	0	10	17%
Nat Res Concentration	12	0	0	12	0%
Capital Controls	12	0	9	3	75%
Central Bank Independence	12	1	0	11	8%
Inflation	12	0	8	4	67%
Development Level	12	7	0	5	58%
North America	12	0	0	12	0%
South America	12	0	2	10	17%
Europe	12	1	0	11	8%
Africa	12	0	0	12	0%
Asia	12	1	1	10	17%

Although geographic concentration appears different than what is expected theoretically, this is not that inconsistent with past empirical results. Melvin (1985), Savvides (1990), Poirson (2001), and Juhn and Mauro (2002) all find a relationship between floating exchange rate regimes and this variable, although not a significant relationship. Honkapohja and Pikkarainen (1994), however, do find a statistically significant relationship between geographic concentration and floating exchange rates.

VI. Conclusion

Prior research on the determinants of exchange rate regimes concludes that few strong predictors exist. Viewed as a whole, both economic theory and empirical evidence is inconclusive. The results in this paper are consistent with this in that few variables turn out to be significant predictors of exchange rate regime choice. Trade openness appears to be the one and only determinant that is supported by theory, illustrated by previous empirical evidence, *and* found to have strong evidence in this paper. In particular, the more open a country is to trade, the greater the probability of adopting a fixed exchange rate.

There is some evidence to support the prior theory and evidence that larger economic size is associated with choosing a floating regime. There is no evidence to support that the geographic concentration of trade is associated with choosing a fixed regime. In fact, when the coefficient on this variable is significant, the sign is opposite of what previous theory and evidence suggests.

Higher commodity concentration also seems to be a robust predictor of choosing a fixed exchange rate. This is consistent with previous theory, but less so with previous evidence. Some previous studies find that higher commodity concentration is associated with floating exchange rate regimes. The evidence also seems to suggest that fewer capital controls is associated with choosing a fixed exchange rate. This is inconsistent with previous theory and previous evidence. Higher development level also seems to be consistent with choosing a fixed exchange rate.

Following the "resource curse hypothesis" literature, this paper is the first to test whether the natural resource concentration of trade is associated with choosing a fixed exchange rate. There is no evidence to suggest that it is.

The inconclusive findings do not suggest that it is impossible to determine how a country arrived at its current exchange rate regime, but probably suggests that there are other factors not yet being considered. For example, even if all determinants point to a country choosing an exchange rate regime different from their current regime, the costs of changing the regime might outweigh the benefits of doing so.

VII. References

Atkinson, G. and K. Hamilton. 2003. "Savings, Growth and the Resource Curse Hypothesis." *World Development*, 31(11): 1793-807.

Berger, H., J.-E. Sturm, and J. de Haan. 2000. "An empirical investigation into exchange rate regime choice and exchange rate volatility." CESifo Working Paper No. 263.

Bernhard, W. and D. Leblang. 1999. "Democratic Institutions and Exchange-rate Commitments." *International Organization*, 53(1): 71-97.

Blume, L., J. Müller, S. Voigt, and C. Wolf. 2007. "The economic effects of constitutions: replicating – and extending – Persson and Tabellini." *Public Choice*, 139(1-2): 197-225.

Caramazza, F. and J. Aziz. 1998. "Fixed or Flexible? Getting the Exchange Rate Right in the 1990s." International Monetary Fund's Economic Issues No. 13.

Cukierman, A. 1992. Central Bank Strategy, Credibility, and Independence: Theory and Evidence. Cambridge, MA: MIT Press.

de Haan, J. and W. J. Kooi. 2000. "Does Central Bank Independence Really Matter? New Evidence for Developing Countries Using a New Indicator." *Journal of Banking and Finance*, 24(4): 643-664.

Dreyer, J.S. 1978. "Determinants of exchange-rate regimes for currencies of developing countries: some preliminary results." *World Development*, 6(4): 437-445.

The Fraser Institute: Economic Freedom Network. 2009. *Economic Freedom of the World 2009 Annual Report*. www.freetheworld.com/release.html (accessed November 3, 2009).

Edwards, S. 1996. "The determinants of the choice between fixed and flexible exchange-rate regimes." NBER Working Paper No. 5756.

Edwards, S. 1998. "Exchange rate anchors and inflation: a political economy approach." In Positive Political Economy: Theory and Evidence, ed. Eijffinger, S. and H. Huizinga. Cambridge: Cambridge University Press.

Honkapohja, S. and P. Pikkarainen. 1994. "Country characteristics and the choice of the exchange rate regime: are miniskirts followed by maxis?" In Exchange Rate Policies in the Nordic Countries. ed. Akerholm, J. and A. Giovannini. London: CEPR.

International Monetary Fund. 2009. *Direction of Trade Statistics (DOTS).* Washington: International Monetary Fund. www.imfstatistics.org/dot (accessed November 2, 2009).

International Monetary Fund. 2004. *International Financial Statistics CD-ROM*. Washington: Publication Services IMF.

International Monetary Fund. 2009. *World Economic Outlook Database October 2009.* Washington, D.C. www.imf.org/external/pubs/ft/weo/2009/02/weodata/index.aspx (accessed October 16, 2009).

Juhn, G. and P. Mauro. 2002. "Long-run determinants of exchange rate regimes: a simple sensitivity analysis." IMF Working Paper No. 02/104.

Lartey, E. 2007. "Capital Inflows, Dutch Disease Effects and Monetary Policy in a Small Open Economy." *Review of International Economics,* 16(5): 971-989.

Levy-Yeyati, E. and F. Sturzenegger. 2005. "Classifying Exchange Rate Regimes: Deeds vs. Words." *European Economic Review,* 49(6): 1603-1635.

Melvin, M. 1985. "The Choice of an Exchange Rate System ad Macroeconomic Stability." *Journal of Money, Credit and Banking,* 17(4): 467-478.

Méon, P.-G. and J.-M. Rizzo. 2002. "The Viability of Fixed Exchange Rate Commitments: Does Politics Matter? A Theoretical and Empirical Investigation." *Open Economies Review,* 13(2): 111-132.

Mundell, R. 1961. "A theory of optimal currency areas." *American Economic Review,* 51(4): 657-665.

Obstfeld, M and K. Rogoff. 1995. "The Mirage of Fixed Exchange Rates." *Journal of Economic Perspectives,* 9(4): 73-96.

Persson, T. and G. Tabellini. 2003. "Constitutional Rules and Fiscal Policy Outcomes." *American Economic Review,* 94(1): 25-45.

Poirson, H. 2001. "How Do Countries Choose Their Exchange Rate Regime?" IMF Working Paper No. 01/46.

Rizzo, J.-M. 1998. "The economic determinants of the choice of an exchange rate regime: a probit analysis." *Economic Letters,* 59(3): 283-287.

Rogoff, K. S., A. M. Husain, A, Mody, R. Brooks, and N. Oomes. 2003. "Evolution and performance of exchange rate regimes." IMF Working Paper No. 03/243.

Sachs, J.D. and A. M. Warner. 1997. "Natural Resource Abundance and Economic Growth." Center for International Development and Harvard Institute for International Development, Cambridge: Harvard University.

Sachs, J.D. and A. M. Warner. 2001. "The Curse of Natural Resources." *European Economic Review,* 45(4-6): 827-838.

Savvides, A. 1990. "Real Exchange rate variability and the choice of exchange rate regime by developing countries." *Journal of International Money and Finance*, 9(4): 440-454.

Savvides, A. 1993. "Pegging the exchange rate and the choice of a standard by LDCs: a joint formulation." *Journal of Economic Development*, 18 (2): 107-125.

Handbook of International Trade and Development Statistics. 1995-2008. United Nations Conference on Trade and Development, New York: United Nations.

Von Hagen, J. and J. Zhou. 2005. "The choice of exchange rate regimes: an empirical analysis for transition economics." *Economics of Transition*, 13(4): 679-703.

Von Hagen, J. and J. Zhou. 2005. "The choice of exchange rate regimes in developing countries: A multinomial panel analysis." *Journal of International Money and Finance*, 26(7): 1071- 1094.

Appendix 1A: Description of Calculations of Variables

Table 1A. Potential Determinants of Exchange Rate Regimes and the Years Included

Year	1994	1999	2004	1999	2004
Time	5 Year Averages	5 Year Averages	5 Year Averages	10 Year Averages	10 Year Averages
Economic Size	Average of the years 1989 through 1993	Average of the years 1994 through 1998	Average of the years 1999 through 2003	Average of the years 1989 through 1998	Average of the years 1994 through 2003
Trade Openness	Average of the years 1989 through 1993	Average of the years 1994 through 1998	Average of the years 1999 through 2003	Average of the years 1989 through 1998	Average of the years 1994 through 2003
Geographic Concentration	Average of the years 1988 & 1993	Average of the years 1993 & 1998	Average of the years 1998 & 2003	Average of the years 1988, 1993 & 1998	Average of the years 1993, 1998 & 2003
Commodity Concentration	Average of the years 1988 & 1993	Average of the years 1993 & 1997	Average of the years 1997 & 2003	Average of the years 1988, 1993 & 1997	Average of the years 1993, 1997 & 2003
Current Account	Average of the years 1989 through 1993	Average of the years 1994 through 1998	Average of the years 1999 through 2003	Average of the years 1989 through 1998	Average of the years 1994 through 2003
Fiscal Balance	Average of the years 1989 through 1993	Average of the years 1994 through 1998	Average of the years 1999 through 2003	Average of the years 1989 through 1998	Average of the years 1994 through 2003
Majoritarian [a]	Constant	Constant	Constant	Constant	Constant
Presidential [a]	Constant	Constant	Constant	Constant	Constant
Political-Civil Rights	Average of the years 1989 through 1993	Average of the years 1994 through 1998	Average of the years 1999 through 2003	Average of the years 1989 through 1998	Average of the years 1994 through 2003
Nat Res Concentration [b]	Average of the years 1988 & 1993	Average of the years 1993 & 1998	Average of the years 1998 & 2003	Average of the years 1988, 1993 & 1998	Average of the years 1993, 1998 & 2003
Capital Controls	Average of the years 1985 & 1990	Average of the years 1990 & 1995	Average of the years 1995 & 2000	Average of the years 1985, 1990 & 1995	Average of the years 1990, 1995 & 2000
Central Bank Independence [a]	Constant	Constant	Constant	Constant	Constant
Inflation	Average of the years 1989 through 1993	Average of the years 1994 through 1998	Average of the years 1999 through 2003	Average of the years 1989 through 1998	Average of the years 1994 through 2003
Development Level	Average of the years 1989 through 1993	Average of the years 1994 through 1998	Average of the years 1999 through 2003	Average of the years 1989 through 1998	Average of the years 1994 through 2003

a 'Constant' means that the variable is the same for every year in the study. For example, the country either has a majoritarian electoral system or it doesn't.

b When the years for *Nat Res Concentration* were not available, the previous or subsequent year was used.

Appendix 1B: Summary Statistics for Years Not Reported in Paper

Table 1B-1. Summary Statistics of Independent Variables for the Exchange Rate Regime in 1994 (Five Year Averages)

	Mean	Minimum	Maximum	Standard Deviation
Economic Size	1.64×10^{11}	4.68×10^{7}	7.71×10^{12}	7.19×10^{11}
Trade Openness	0.77	0.04	2.87	0.47
Geographic Concentration	0.34	0.11	1.95	0.24
Commodity Concentration	0.37	0.05	0.93	0.23
Current Account	-0.05	-0.52	0.59	0.10
Fiscal Balance	-0.03	-0.16	0.10	0.04
Majoritarian	0.41	0.00	1.00	0.49
Presidential	0.34	0.00	1.00	0.48
Political Rights	3.80	1.00	7.00	2.09
Civil Liberties	3.75	1.00	7.00	1.72
Nat Res Concentration	0.24	0.00	0.97	0.29
Capital Controls	2.43	0.00	10.00	3.03
Central Bank Independence	0.26	0.00	1.10	0.20
Inflation	0.87	-0.04	37.17	4.08
Development Level	6230.33	104.47	44208.58	9668.47

Table 1B-2. Summary Statistics of Independent Variables for the Exchange Rate Regime in 1999 (Five Year Averages)

	Mean	Minimum	Maximum	Standard Deviation
Economic Size	1.84×10^{11}	6.82×10^{7}	8.69×10^{12}	8.01×10^{11}
Trade Openness	0.81	0.02	2.87	0.45
Geographic Concentration	0.30	0.08	0.86	0.14
Commodity Concentration	0.36	0.06	0.94	0.23
Current Account	-0.04	-0.63	0.30	0.09
Fiscal Balance	-0.02	-0.11	0.13	0.03
Majoritarian	0.41	0.00	1.00	0.49
Presidential	0.34	0.00	1.00	0.48
Political Rights	3.55	1.00	7.00	2.17
Civil Liberties	3.73	1.00	7.00	1.79
Nat Res Concentration	0.23	0.00	1.00	0.28
Capital Controls	3.39	0.00	10.00	3.16
Central Bank Independence	0.26	0.00	1.10	0.20
Inflation	0.52	-0.02	16.87	1.79
Development Level	6636.92	123.24	51463.29	10164.10

Table 1B-3. Summary Statistics of Independent Variables for the Exchange Rate Regime in 2004 (Five Year Averages)

	Mean	Minimum	Maximum	Standard Deviation
Economic Size	1.79×10^{11}	6.92×10^{7}	1.00×10^{13}	8.43×10^{11}
Trade Openness	0.86	0.01	3.04	0.48
Geographic Concentration	0.30	0.05	0.88	0.15
Commodity Concentration	0.37	0.06	0.96	0.24
Current Account	-0.03	-0.40	0.45	0.09
Fiscal Balance	-0.02	-0.15	0.16	0.03
Majoritarian	0.41	0.00	1.00	0.49
Presidential	0.34	0.00	1.00	0.48
Political Rights	3.44	1.00	7.00	2.12
Civil Liberties	3.50	1.00	7.00	1.71
Nat Res Concentration	0.20	0.00	0.98	0.26
Capital Controls	4.04	0.00	10.00	3.20
Central Bank Independence	0.26	0.00	1.10	0.20
Inflation	0.10	-0.18	2.46	0.26
Development Level	6266.50	95.04	50148.12	9607.18

Table 1B-4. Summary Statistics of Independent Variables for the Exchange Rate Regime in 1999 (Ten Year Averages)

	Mean	Minimum	Maximum	Standard Deviation
Economic Size	1.73×10^{11}	5.75×10^{7}	8.20×10^{12}	7.57×10^{11}
Trade Openness	0.78	0.03	2.87	0.45
Geographic Concentration	0.32	0.08	1.50	0.19
Commodity Concentration	0.37	0.06	0.93	0.22
Current Account	-0.04	-0.38	0.45	0.08
Fiscal Balance	-0.03	-0.11	0.11	0.03
Majoritarian	0.41	0.00	1.00	0.49
Presidential	0.34	0.00	1.00	0.48
Political Rights	3.65	1.00	7.00	2.07
Civil Liberties	3.74	1.00	7.00	1.72
Nat Res Concentration	0.24	0.00	0.97	0.28
Capital Controls	3.03	0.00	10.00	2.99
Central Bank Independence	0.26	0.00	1.10	0.20
Inflation	0.59	-0.03	16.87	2.28
Development Level	6431.93	158.73	47835.93	9852.15

Appendix 2A: Correlation Matrix Using 2004 Ten Year Averages

Table 2A. Correlation Matrix of Potential Determinants in 2004 using Ten Year Averages

	Econ Size	*Trade Open*	*Geo Conc*	*Com Conc*	*Current Acct*	*Fiscal Balance*	*Maj*	*Pres*	*Political-Civil Rights*	*Nat Res Conc*	*Capital Control*	*Central Bank Ind*	*Inflation*	*Dev Level*
Economic Size	1													
Trade Openness	-0.1832753	1												
Geographic Concentration	-0.2862649	-0.002823	1											
Commodity Concentration	*-0.549608*	-0.0037053	0.2677018	1										
Current Account	*0.4620732*	-0.0223305	-0.0839042	-0.1320644	1									
Fiscal Balance	0.0842305	-0.0196538	-0.102773	-0.0823593	0.0200461	1								
Majoritarian	-0.2222893	0.068893	0.0404722	*0.3167727*	-0.0821586	0.1080201	1							
Presidential	0.0161231	-0.2567216	0.1382448	0.15336	-0.0720959	-0.0395627	-0.1690936	1						
Political-Civil Rights	-0.2152469	-0.1369584	0.0647953	*0.4722516*	-0.0405864	-0.1209915	0.1663345	*0.329251*	1					
Nat Res Concentration	0.1066092	-0.0798765	0.0386353	*0.4289384*	0.2997098	0.0713022	0.015164	0.1788565	*0.3891053*	1				
Capital Controls	0.1953065	-0.0114512	0.0312573	-0.0455283	0.117135	-0.0407145	0.0170634	-0.0814813	-0.1575883	0.0508177	1			
Central Bank Independence	0.0017912	-0.1732389	0.2093197	0.0153727	-0.068893	0.1237417	0.0337734	*0.395621*	0.0992388	0.0145748	-0.1301272	1		
Inflation	-0.0623468	-0.0758077	0.0411337	0.159285	-0.1543008	0.0421794	-0.1091342	0.1696881	0.2587897	0.1530689	-0.0480312	0.287341	1	
Development Level	*0.5754707*	*0.3317758*	-0.1368686	*-0.388165*	*0.3986161*	0.1242479	-0.2303666	-0.262027	-0.5600396	0.024441	0.1684195	-0.1855001	*-0.310078*	1

Correlations greater than 0.3 and less than -0.3 are italicized.