*Red de Centros de Investigación
de la Oficina del Economista Jefe
Banco Interamericano de Desarrollo (BID)
Documento de Trabajo R-365*

The Political Economy
of Exchange Rate Policies
in Latin America and the Caribbean.

GRADE

Grupo de Análisis para el Desarrollo

Lima, Peru

1. Introduction

The main objective of this document is to identify structural long-term factors that can help to understand the exchange rate policy in Peru during the last fifty years. Rather than identifying particular causes that could help to understand specific decisions at some point in time, the emphasis is on those general political economy arguments that explain the main trends and changes in exchange rate policy over long periods of time. Thus, two main things need to be understood: the choice of the exchange rate regime and its level.

The review of Peruvian Exchange Rate Policies during the last fifty years prompts several questions. First, Which are the reasons that explain why the government chooses some exchange rate regimes over others? Second, What is the motivation behind the targeting of certain exchange rate levels? Third, Can we explain why in certain episodes, governments refused to abandon an exchange rate peg?

With respect to the choice of the exchange rate regime, the obvious extreme alternatives are fixed and pure floating, with several intermediate categories like fixed with discrete realignments, crawling pegs, bands, and dirty floating. By choosing one exchange rate regime, simultaneously other underlying objectives are also being selected. The most common trade off mentioned in the literature is that between volatility and flexibility. In a moderate inflation country, a fixed exchange rate is assumed to reduce volatility in the real exchange rate (RER) –to the extent that prices are one order of magnitude less volatile- but limits government's ability to counteract non anticipated real shocks.   On the other hand, a flexible exchange rate allows to implement discretionary policy to react to real shocks but it is usually associated with a higher degree of RER volatility[1]. However, in countries that have experienced high chronic inflation, the relationship between real and nominal exchange rate volatility apparently breaks up: an increase in the volatility in the nominal exchange rate does not necessarily imply an increase in volatility of the real exchange rate[2]. So the volatility-flexibility trade off is no longer valid to explain the selection of a particular exchange rate regime and other factors needs to be taken into account to explain such choice. Furthermore, to the extent that inflation does not converge to international levels, the choice is not primarily between volatility and discretion, but between competitiveness and inflation. A fixed exchange rate provides a nominal anchor that can help to build the credibility necessary to fight inflation. However, at the same time a pegged rate results in real appreciations that can jeopardize the viability of external accounts.

With this framework in mind, the first task attempts to explain the adoption of particular exchange rate regimes in Peru during the last 50 years. In that respect, Peru's experience has been particular rich because almost every exchange rate system has been implemented, fact that would gives us some degrees of freedom to perform certain statistical tests. There are two episodes that deserve special attention. The first one was the adoption of a fixed exchange rate –de facto in the late 1950's and de jure in 1961- in a period in which the country was experiencing high GDP growth rates. We hypothesize that a number of factors, such as the upsurge of urban population, the relative disenchantment with laissez-faire after years of terms of trade volatility, and the adoption

---

[1]   See Obstfeld (1997).

[2]   See for example Bufman and Leiderman (1995).

3

of inward oriented policies by other countries in the region certainly contributed to this choice. The second episode corresponds to the adoption of a flexible exchange rate in the 1990's, in a context in which most high inflation countries had opted for exchange-rate-based stabilization. We conjecture that the initial election of the exchange rate regime was the result of some economic initial conditions –like the lack of reserves to commit to a credible peg-, and the indirect pressure of the IMF. We also believe that the system has been maintained until now, mainly because of the political costs -and risks- of switching regimes.

Regarding the second question, we believe that the government has some discretion over the exchange rate level. Empirical studies show that even if in the longer run the RER converges to PPP -probably adjusted by productivity gains- in the short run there are important deviations from productivity adjusted PPP. That suggests that short term, temporary monetary and fiscal policies can affect the exchange rate level. To target a more depreciated exchange rate to increase competitiveness or to solve a balance of payments crisis is usually done at the expense of higher inflation. Peru's exchange rate policy during the last 50 years shows certain periods-most of the 1960's and early 1970's, mid 1980's and most of the 1990's- in which the RER seems to be appreciated with respect to its equilibrium value. Thus, one of the main objectives of this study will be to understand why and how the government endured, or sometimes induced, such misalignment.

The third relevant question is related to the appropriate timing for abandoning an exchange rate peg. There are several ways to do so after the government has committed to keep it. One requires to devalue and fix again, another would be to introduce a more flexible system. In general, those shifts are associated with huge political costs because have short-term contractionary implications. For this reason pegs are in several cases abandoned too late.

There are at least three episodes in Peru during the last fifty years in which required exchange rate adjustments were postponed: in the1960's, in the early 1970's and between 1985-87's. While we are unable to perform econometric techniques to test exchange rate switch, we will cover the first one of those episodes with more detail in section 5.

The paper is organized as follows. Section 2 briefly describes the evolution of the exchange rate policy in Peru since 1950 until present days. Section 3 discusses and proposes the main factors that could help to explain the behavior just described. Section 4 applies econometric techniques to tests the hypothesis presented in section 3 to explain both the exchange rate regime as well as the degree of real exchange rate misalignment. Section 5 describes three particular episodes of Peruvian exchange rate management recent history in order to illustrate how extra political economy factors are also important to explain exchange rate behavior. In that sense this section is a complement of the analysis made in section 4. Finally, there is a chapter with the main conclusions of the paper.

Our empirical results support the hypothesis that interest group pressures as well as the overall policy orientation are important factors to explain both the choice of the exchange rate regime as well as the degree of misalignment. The industrial sector oriented to the domestic market (both entrepreneurs and unions) pushed for a protectionistic tariff level, a fixed exchange rate regime and a stronger (appreciated) currency, while when tariffs were low, they were less prone to accept and overvalued real exchange rate. The results also suggest that export subsidies played a role in compensating the export sector, reducing pressures for a more depreciated currency. However, we need to be cautious about the result due to the difficulties to make reliable estimation in relatively small samples and the limited capacity of the measures used to proxy the underlying economic variables.

2. Peruvian Exchange Rate Policies during the last 50 years.

For the last five decades Peru has experimented with all imaginable exchange rate regimes. All along, exchange rate policy has been at the service of multiple and often-contradictory purposes, sometimes as a nominal anchor to fight inflation, sometimes as an instrument to promote international competitiveness, and also as an important relative price within a set policies aimed to industrialize the country.

By any standards, Peru was an outward oriented economy in the fifties (for example, the ratio of exports plus imports over GDP exceeded 45% in 1960). Exports were concentrated in agricultural and mining products and economic policies were basically of laissez-faire. Unlike most Latin American nations that had a fixed nominal exchange rate during the 1950's, Peru opted for a floating exchange rate regime after a negative experience with fixed exchange rates in the mid 1940's[3]. This regime was maintained until 1954, year in which the Central Bank started to increase its intervention in the foreign exchange market. However, during most of the fifties exchange rate policy was aimed at keeping a weak real exchange rate (i.e. depreciated) in order to encourage foreign competitiveness. Thus, when in 1957, the terms of trade deteriorated, generating a balance of payment crisis, the currency was devalued 20% in January 1958 and a serious and by-the-book stabilization program followed this devaluation in 1959.

However, already in the mid-fifties the development paradigm based in exporting raw materials was being questioned. Raw material's price instability and CEPAL theories about economic development were arguments used to encourage a gradual policy shift aimed to benefit the incipient manufacturing sector against the still powerful export sector. As Thorp and Bertram (1978, p. 262) put it: "A turning point for industrialization can thus be identified in the last year or so of the Odria government, as a new generation of manufacturing ventures came on to the scene. The new firms of the 1950's represented the first steps in a diversion of the local elite interest away from export activities and toward non-export sectors, including manufacturing

Indeed, in addition to the stabilization package, also in 1959 was enacted the "Ley de Promoción Industrial". This could be considered the first effort to promote industrialization by means of an import substitution strategy. The law had been originally proposed in 1955 and submitted to the Congress in 1956.

Within this new development paradigm, exchange rate intervention was increased and finally the exchange rate was fixed in February 1961. As we will see later, a fixed exchange rate was consistent with the need to provide cheap foodstuff to the growing urban population as well as cheap inputs and equipment to the industrial sector. The exchange rate regime was also linked to other policies. For example, tariffs were substantially risen in order to protect manufacturers of final goods oriented to the domestic market, but simultaneously, tariff exemptions were granted to intermediate and capital goods demanded by the industrial sector. Also, an Agrarian Reform was timidly launched in the southern part of the country.

A fixed exchange rate coupled with an inflation rate of 83 % between 1961 and 1967 -well above international levels and without major changes in productivity- generated a very strong appreciation of the real exchange rate. The strong anti-export bias was reflected in a deterioration of the trade balance. This time the government was reluctant to devalue but a speculative attack forced a 44.3% devaluation in September 1967. In section 5 we analyze with more detail the sort of

---

[3] Peru was the only Latin American country that did not introduce exchange rate controls after the great depression.

economic, political and institutional factors that help to explain why the government was more willing to accept a real exchange rate appreciation during the sixties than during the previous decade.

The economic failure -that the exchange rate devaluation made obvious- prompted a military coup in 1968. The new military government considered that the import substitution measures that had been implemented in the country so far were too timid and embarked Peru in a package of severe reforms that constituted one of the most radical import substitution programs in Latin America. The Agrarian Reform and a far reaching program of nationalization of mining and oil companies seriously affected those economic groups that could push for a higher RER. Peru's economy was entering into a stage of keeping a strong RER as a precondition to achieve industrialization.

The Agrarian Reform and the nationalization of mining and petroleum companies severely affected the capacity of export's group to exert pressure on the government for a devalued exchange rate. As it was mentioned before agricultural and mining exports were the main Peruvian export products. Land reform in the coastal region implied the transfer of vast "haciendas" to the workers which were not ready to manage them. As a result sugar and cotton exports started declining. On top of that the new agricultural "cooperativas" were never capable of organize themselves into a pressure group. Likewise the new state administration of the State Mining companies were following political guidelines rather than economic principles and rapidly started subsidizing the emerging industrial sector through low energy prices and an overvalued exchange rate.

The new government kept the nominal exchange fixed, enacted a new industrial law "Ley General de Industrias" (1970) and increased protection even further. A favorable evolution in the terms of trade and the sudden discovery of oil in the Peru's Jungle in the midst of the first oil shock allowed the country to access financial international markets that were flown with petrodollars at the moment. As a consequence, during 1973 and 1974 the government could subsidize oil and foodstuff without need to adjust the exchange rate. The gradual increase of the weight of manufacturing in GDP as well as the growing process of urbanization that had started in previous years, contributed to shape new powerful economic groups interested in keeping a strong RER plus a very restrictive tariff structure.

Once favorable international prices and lending disappeared, the weaknesses of the economy became obvious. In addition oil reserves proved to be much lower than initially expected. The strong deterioration in the terms of trade since 1974 and the fiscal deficit led to a balance of payments crisis in 1975 that forced a change in the military government. The new government initiated some adjustment measures. In September 1975, and after being fixed for 8 years, the exchange rate was devalued by 45%.

Social tensions were very evident and while industrialists were supporting the regime, labor unions organized the first general strike. In that period, the Central Bank regained control of economic policy making, at least partially, as result of pressure from foreign creditors and the IMF, and started some economic adjustment. In June 1976 there was a new devaluation and then a crawling peg system was implemented. In July next year the exchange rate was fixed again and then, after a very short period of 'dirty floating", a pre-announced crawling peg system was implemented again in 1978. Several Ministers of Economy pass by the government during those years.

Furthermore, the current account deficits of 8.9% in 1976 and 7.7% in 1977 forced the government to implement other policies to reduce aggregate demand. Nonetheless, giving that the government could still access some foreign funds, it did not implement a coherent stabilization program until 1978.

During the 1975-1977 period the government was reluctant to apply a drastic stabilization program, because of the "social cost" of such package and hence partial or incomplete measures generated growing imbalances. It is interesting to compare the unwillingness to adjust in this period with the relatively easiness to implement stabilization packages during the 1950s. As was mentioned before, when terms of trade deteriorated in 1957, the government was quick to implement a by-the-book stabilization program. However, after more than a decade of import substitution, the industrial sector and urban workers used to subsidize foodstuff and energy prices, constituted a group that was not ready to accept that easily a devaluation nor tax increases. Indeed, 1978 was one of the worst years in terms of strikes and attendance to public schools was suspended during various months because of a general strike organized by the teacher's union.

The first serious stabilization program aimed at reducing the level of expenditure was implemented in 1978 when the political discontent, the external sector critical situation and the lack of access to external borrowing gave no other option. In that same year, the military government announced a timetable to amend the Constitution and to hold democratic elections in 1980.

During those years, the promotion of nontraditional exports that was originally started by the late 1960's was intensified. Between 1976 and 1978 the real exchange rate depreciated 60%. Non-traditional exports increased eight fold between 1975 and 1979 (See Table in Appendix 1).

The dramatic improvement in terms of trade in 1979-1980 helped to reverse the current account situation and almost automatically solved the public sector's deficit. Silver prices increased four times from 1978 to 1980. Also the second oil shock caught Peru shortly after the opening of an oil duct that transported petroleum from the jungle to a coastal port. A newly 17% export tax that was introduced as part of the stabilization package in 1978 made possible that a substantial part of the export boom was captured by the government, hence improving public sector's accounts.

In a context in which capital inflows had not changed substantially, international reserves were accumulated. The sudden export boom, and the related inflow of foreign exchange while keeping the crawling peg system, forced an appreciation of the real exchange rate. Financial markets in Peru were quite under developed at the moment and hence the Central Bank lacked the instruments to sterilize the sudden inflow of foreign exchange. Monetization of foreign reserves neutralize previous government efforts to reduce inflation. During those years the government prepaid some foreign debt that have just been refinanced during the previous years and started an import liberalization process as a way to cope with inflationary pressures.

As the external disequilibrium was corrected exchange rate policy was redirected towards fighting inflation. In 1980, the recently elected Belaunde's administration launched an aggressive investment plan assuming that a substantial part of the terms of trade improvement was permanent. Peru's position at the time was enviable, with a favorable external context and a newly elected democratic government, it was easy to Belaunde's government to launch an ambitious foreign indebtness plan that was aimed, mainly to the construction sector (both roads and housing).

However, the favorable external situation of 1979 and 1980 was reversed in 1981, and negative terms of trade shocks and higher international interest rates hit the economy during 1981-1982. Again, the government was reluctant to adjust, probably wishing that the reversal in the terms of trade was only temporary and devoted a substantial part of foreign lending to cushion the situation without taking any serious stabilization measure. Trade tariffs were also increased as a way to cope with the external situation.

In 1981 the current account deficit reached 8% of GDP. When the external and internal disequilibria were no longer tolerable, the government ended up undertaking drastic measures to

increase government savings and to pursue real exchange rate devaluation. In 1983, El Nino hit hard the Peruvian economy which GDP decreased in more than 13% that year. However, an important share of such recession was due the underlying economic imbalance rather than a consequence of the drastic climate changes that the country experienced. Again the reluctance to adjust to a negative external shock increased the magnitude of the imbalances, postponing and fattening the adjustment bill. Eventually, and after 1983 El Nino, the government hit bottom, stopped servicing international banks' foreign debt and was forced to negotiate several refinancing deals and enter into IMF monitoring. The IMF's intervention prompted an adjustment plan.

Since the end of 1983 when the crawl was accelerated, the exchange rate policy went basically unmodified until the end of Belaúnde's term in July 1985. During those years greater importance was paid at keeping a high real exchange rate to maintain the country's competitiveness. Also, public prices (such as those of gasoline, water and electricity) were subtantially increased in real terms in a context of growing inflation. As a consequence, the cost of an aggressive crawling peg regime was strong inflationary pressures. In 1985, annual inflation reached 250%. The country was immersed in a inflation-devaluation spiral. However, as a result of the fiscal and monetary restrictive measures both public accounts equilibrium and the external balance were achieved. By the end of Belaunde's period in July 1985 the country had US$ 1.5 billion in foreign reserves and the public sector was already running a surplus.

In August 1985, the newly elected Garcia's administration launched a heterodox stabilization program in the spirit of the Austral and Cruzado plans using the exchange rate as one of several anchors to reduce inflation. As expected, freezing prices of most products helped to reduce inflation. In addition expansive fiscal policies encourage growth. The GDP grew in 9.3% in 1986 and 8.3% in 1987. However, the government did not undertake major adjustments to the underlying sources of inflation which remained substantially above international levels. The maintenance of price controls and a fixed exchange rate generated major distortions in the economy. However, the starting conditions (a relatively high stock of foreign reserves as well as healthy public sector finances) bought some time to the new elected government. It is worth remembering that Garcia also limited foreign debt payments in order to use those resources to finance domestic public expenditures. By 1987 the underlying disequilibriums were evident, the country was running out of foreign reserves, there was a drastic current account deficit and the public deficit reached 5.7% of GDP.

In the following years, a multiple exchange rate system was introduced. The aim was to achieve two objectives: to keep inflation under control and to avoid an excessive deterioration of external accounts. As expected, the system failed and a sharp reduction in aggregate demand, working as an automatic stabilizer, end up being the only way to reduce the external accounts deficit. Since early 1987 until 1990 several incomplete stabilization packages were implemented and the role of the exchange rate as an instrument to fight inflation was maintained by keeping a low official rate for certain transactions. Although the stabilization measures were somehow successful in regaining the external balance, the public sector growing deficit kept fueling inflation. By 1989, Garcia's government, in a desperate attempt to repeat the 1985' economic recipe in order to be reelected, end up consuming the little foreign exchange that were accumulated during 1988-1989 adjustment period. Inflation accelerated and in the last twelve months prior July 1990 was almost 5,000%.

In August 1990, the recently elected president Fujimori launched a comprehensive stabilization program. Unlike most successful stabilization programs in the region, the exchange rate was not pegged. On the contrary, it was allowed to float with a certain degree of intervention. The somewhat contractionary monetary policy contributed to the appreciation of the real exchange

rate[4]. Section 5 elaborates more on this episode.

The real exchange rate has appreciated since 1990. However, given the lack of a precise estimate of the equilibrium real exchange rate (ERER), the exact degree of overvaluation, if any, remains unknown. What is clear is that along these years the Central Bank has undertaken limited sterilized intervention with the objective of depreciating the RER –or at least avoid further appreciation- without major success, and only as long as it was consistent with the inflation objective.

After almost two decades of failure, Fujimori also marks the abandonment of the previous industrialization paradigm to develop the country and the adoption of a new scheme in which markets play a central role. International pressures represented by the World Bank and IMF played a crucial role in this transformation. Under this new scheme the government has repeatedly insisted that the export sector should play a leading role.

3. Potential Determinants of Exchange Rate Policies

This section discusses some factors that can potentially be used to explain exchange rate policies in Peru. It also points out the explanatory variables which after a casual view of the evidence seem to be discarded. In sections 4 and 5 we see the actual relevance of those hypothesis in Peruvian exchange rate policy making.

External shocks

Being Peru a small and open economy, external factors are likely to affect directly and indirectly both the adoption of a particular exchange rate policy and the exchange rate level. As we know, a terms of trade deterioration forces a depreciation of the equilibrium real exchange rate to maintain the long run equilibrium. If the exchange rate is fixed, the required real depreciation could be obtained either through a reduction of the domestic price lelvel or by devaluing the local currency. The first option is largely implausible due to downward nominal rigidities prevailing in the economy. Therefore, deterioration in the terms of trade has usually forced the devaluation of the local currency. Improvements in the terms of trade have also had an important impact on exchange rate policy: required devaluation in the 1950's and early 1970's were postponed because of improved external conditions. Of course it is relevant to emphasize that the most diversified the export base is, the less shock-prone the economy will be. Thus, changes in the structure of exports could indirectly affect the exchange rate regime and its level.

Other external shocks have also been important. Fluctuations in international interest rates have affected exchange rate policy. Two of the most important effects of these fluctuations have been their impact on the fiscal accounts and in capital flows. Its impact on fiscal deficits has been positively correlated with the level of foreign debt, whereas the effect on capital inflows on the economy has been largely affected by the degree of openness of the capital account. For example, the interest rates jump during the early 1980's put Peru's fiscal accounts under a lot of pressure by 1982, while the reduction of world interest rates during the early 1990's, in a period of policy-induced high real domestic interest rates, exerted strong pressures to appreciate the RER because of significant capital inflows.

---

[4] Of course, the fact ths real appreciation was widespread in Latin America during the 1990's leads one to believe that it was more related to external factors as suggested by Calvo, Leiderman and Reinhart (1993).

Intellectual Climate and other external constraints

The international environment is certainly relevant in the adoption of exchange rate policies. The probability that one country adopts a given exchange rate policy is larger if other countries are doing the same. For example, most of the countries had fixed exchange rates during the Bretton Woods system while in the last 10 years the exchange rates have become more flexible.

Relation with Overall Policy Orientation

Sustainable exchange rate policies need to be consistent with a general policy orientation. For example, floating rates operate better when capital and goods are free to move. When the emphasis of the general policy shifts towards heavier government intervention, a fixed exchange rate might be more consistent with that strategy.

A casual look of the Peruvian experience of the last 50 years, seems to give support to that view. For example, during the 1950's the floating exchange rate system worked better in an environment of high capital mobility of factors and very low protection. Once the government started to intervene more heavily promoting the manufacturing sector, the exchange rate was fixed. Similary, in the 1990's the process of structural reforms and the complete liberalization of capital and current accounts in the 1990's made a flexible system more natural.

Another related instrument is trade policy. It is very easy to draw links between trade and exchange rate policies. For example, for the import competing sector exchange rate and trade policies can be complementary. The sector can be equally protected by different combinations of levels of the real exchange rates and tariffs or quotas. In the Peruvian experience, this can be seen in the 1960's and 1970's. During those years, the low exchange rate, consistent with low food prices and cheap inputs and capital goods, was accompanied with a tariff structure that granted high protection to final good manufacturers. We will come back to this point below. Similarly, the export sector has been compensated with export subsides that averaged 20%[5].

Distributional Issues and Interest Groups

As the world grows more integrated, both in goods and financial assets, the exchange rate becomes the most relevant price in the economy. As a consequence, several groups are affected by exchange rate policies and try to influence it. Frieden (1994) maintains that, in general, tradable producers will prefer a weak (i.e. depreciated) exchange rate while non-tradable producers, international traders and investors will favor a strong (i.e. appreciated) RER. Similarly, we expect domestic producers to favor more flexible exchange rates. However, it is necessary to take into account the heterogeneity within the tradable sector. In general, one would expect the import competing sector and the export oriented sector to favor a more depreciated currency. However, during years the import competing manufacturing sector has been protected by high tariffs to final manufacturing goods which makes the sector non tradable de facto. If that is the case, the domestically oriented manufacturing sector would favor an appreciated currency in periods of high protection while demanding a more depreciated currency when protection is low.

---

[5] See Rojas (1996).

10

Similarly the extent to which the export oriented sector is affected depends on its cost structure. Ex-ante one would expect the mining sector to be less affected by the real exchange rate due to its highly dollarized cost structure, while more labor-intensive nontraditional exporters should be more RER sensitive. Thus, we hypothesize that nontraditional exporters represented by Asociacion de Exportadores (ADEX) are more concerned with the evolution of the real exchange rate.

When looking over Peruvian exchange rate policies during the last 50 years, one can see the important role played by interest groups. For example, during the 1950's a high real exchange rate was maintained, revealing exporters' interests prevailed during that period. During the late 1950's and early 1960's the balance of power slowly started to shift towards the manufacturing sector. The approval of the "Ley de Promocion Industrial" in 1959 marked a turning point in the evolution of the exchange rate.

Several structural transformations that took place in the country at the time can help to explain such change. The accelerated urbanization process gave birth to a group with strong voting power that demands cheap imported food. The formation and growth of unions also had a similar effect. The benefits of a strong currency (low prices for imported goods, cheap inputs and assistance for an indebted government) outweighed the costs imposed to the export sector. Indeed, although during 1961-1967 the nominal exchange rate was fixed while domestic prices increased by 82%, the export sector was unable to reverse the fixation of the exchange rate.

During the early 1970's, the military government went a step further against the exporting sector by eliminating any resistance to the import substitution strategy that was going to be implemented. However, by the second half of the 1970s it was clear that an industrialization program solely based in the domestic market was not viable, and, as mentioned before, an effort to promote manufacturing exports was undertaken[6].

Another issue related to interest groups that would be worthwhile considering is the effect of the degree of dollarization. One would expect that creditors are more concentrated than depositors and to that extent, would be able to exert more pressure to avoid a devaluation or a high real exchange rate depreciation (in case of a floating system).

One caveat related to the importance of interest groups as an explanatory variable of exchange rate policy choices, is that some of the most prominent economic groups are widely diversified. Thus, while certain parts of the group loose as a result of a particular other parts gain, so the need to favor or fight a particular policy could be substantially lessened.

Political and Institutional Variables

Exchange rate policy is often used as a mechanism to improve the short-term benefits of the electorally significant, urban population. For example one should expect that, ceteris paribus, the real exchange rate is more depreciated when governments take office and more appreciated towards the end of their term. It is very likely, for instance that the probability of devaluation when elections are closing in decreases significantly. This is partially because the negative income effect of the devaluation – as a result of the reduction of real wages- is in the short run larger than the positive substitution effect. With the same spirit, one would expect that on average democratic governments have a more appreciated currency that dictatorships since the former are accountable for their actions. The Peruvian experience does not suggest a clear difference between dictatorship

---

[6] Paredes (1988) mentions that the promotion of manufactured exports responded more to the need to improve the balance of payments than to an articulated strategy to promote industrialization.

and democracies with regard to exchange rate policies.

Needless to say, one should also mention the effect of different partisan bases of government on exchange rate policies. Similarly, some people suggest that the degree of political stability can affect exchange rate policy. However, the effect can go both ways. On the one hand, a more stable government can more easily get the support to fix the exchange rate. On the other hand, a more unstable government may want to fix the exchange rate to gain credibility. The determination of which effect is likely to dominate is an empirical problem.

The role of the Central Bank and its willingness to finance fiscal deficits, definitely affect the exchange rate outcome. As the Central Bank becomes more independent, one should expect a more contractionary monetary policy and, as a result, a more appreciated exchange rate.

Some discarded candidate explanations

Some other variables seem to have played a lesser role in the adoption of Peruvian exchange rate policies. For example, regional agreements have probably played a negligible role. Eventhough Peru has been part of the Andean Pact (comprising Bolivia, Colombia, Ecuador, Peru y Venezuela) for more than twenty years, its actual effects on Peruvian policies of every class seems nil. In case of conflict, internal objectives have been in general prioritized over Pact agreements.

Some of the potential explanations related to the nature of the party system also seem of minor relevance. For example, in the period of analysis there are 18 years of dictatorship and 21 years (1956-62, 1980-90, and 1992-97) in which the executive had majority in the parliament. Since Congress representatives vote along party lines, to ask if the parties are nationalistic or regionalist seem to be of less importance.

4. Methodology and Data

As in most studies involved with institutional and political factors, there is little empirical work available that can be replicated. Our objective is to provide some statistical tests about exchange rate policy choices. Of course, given the small sample size and the fact that institutional variables change very slowly over time, our results can be only suggestive of the importance of certain factors. More importantly, it is very hard to measure accurately some of the effects suggested in section 3. Thus, to supplement the statistical analysis of this section, section 5 provides a more detailed description of particular episodes that we believe reinforce some of our results.

It is clear that two of the most important decisions regarding exchange rate policy are the choice of the exchange rate system, and the selection of the real exchange rate level. In this section, we have designed tests aimed at capturing the extent to which exchange rate policies are affected by the factors suggested before.

4.1   Regime Choice

Our objective in this case would be to explain the election of the exchange rate regime. In this case, the dependent variable would be discrete according to the different exchange rate regimes available. It is worth mentioning at this point that the election of a particular exchange rate regime usually represents underlying preferences about the degree of volatility, the level of the real exchange rate, the level of inflation, etc. Thus, in this subsection we have in mind those preferences in trying to

capture regime choice. In sub section 4.2 we explain the level of the real exchange rate explicitly.

Thus, we propose a multinomial logit model[7]. We would set the variable y that would take the value $0,2\ldots J$, where $J + 1$ is the number of exchange regimes available. The probability of a particular exchange regime to occur will be:

$$\Pr ob(Y = j) = \frac{e^{b_j^{'}x_i}}{1 + \sum_{k=1}^{j} e^{b_K^{'}X_i}}$$

where we can compute the likelihood ratios by:

$$\ln(\frac{P_{ij}}{P_{iK}}) = x_i^{'}(b_j - b_K)$$

and the estimates can be obtained from the loglikelihood function:

$$\ln L = \sum_{i=1}^{n} \sum d_{ij} \ln \Pr ob(Y_i = j)$$

With regard to the exchange rate regime variable, there are different possible classifications. A first approach is to use the IMF classification which divides exchange rate regimes in three: i) Currencies pegged to a single currency or a composite of currencies, ii) currencies whose flexibility is limited in terms of a single currency or a group of currencies, and, iii) managed and independent floating.

We believe that IMF's classification is not useful for our purposes because it does not distinguish within the second group between those systems in which there was an objective to control inflation from those arrangements in which the objective was to keep a desired level of the RER. In order to take that distinction into account, we propose the following classification: i) currency pegged to a currency or to a group of currencies, ii) forward looking crawling peg, iii) backward looking crawling peg, iv) Floating (including dirty floating), v) periods of collapse or crisis.

As we mentioned before, at least theoretically the choice of a regime implies certain preferences about underlying objectives, mainly the degree of inflation and the level of appreciation. The exchange rate has been used in Latin America in general and Peru in particular in several occasions as an instrument to fight in inflation, generally at a cost of real appreciation while in other periods the exchange rate has been used to enhance competitiveness at a cost of higher inflation. This is, as we see it the basic trade-off in exchange rate policy.

In order to illustrate this point, we show in table 1 the average levels of inflation and real exchange rates for the different exchange rate regimes. Not surprisingly, we can see that the fixed exchange rate is associated with the lowest level of inflation and with the more appreciated real exchange rate, whereas the periods of backward looking pegs are associated with the highest inflation - if we exclude the periods of collapse or crisis- and the more depreciated currency. Obviously, there are other variables that affect the level of inflation or the real exchange rate that are not included, but we still believe that the results are interesting.

---

[7] See Greene (1997)

Table No. 1

Exchange Rate Regime, Inflation and the RER

Regime	Inflation	Real Exchange Rate
0	18.5%	93.03
1	2500%	122.12
2	67.8%	108.53
3	107%	136.59
4	25.2%	104.27

Where 0:fixed, 1: collapse, 2: forward looking peg , 3: backward looking peg and (4) is floating.

As we can appreciate from the previous table, we can assume that the multinomial-choice variable in this case follows some order. This suggests an ordered estimation, which in turn implies a slight modification of the previous framework so the probability of a particular exchange regime to occur will be:

$$\Pr ob(Y = 0) = \Lambda(\boldsymbol{b}'X)$$
$$\Pr ob(Y = 1) = \Lambda(\boldsymbol{m} - \boldsymbol{b}'X) - \Lambda(-\boldsymbol{b}'X),$$
$$\Pr ob(Y = 2) = \Lambda(\boldsymbol{m}_2 - \boldsymbol{b}'X) - \Lambda(\boldsymbol{m} - \boldsymbol{b}'X),$$
$$.$$
$$.$$
$$\Pr ob(Y = J) = \Lambda(\boldsymbol{m}_{-1} - \boldsymbol{b}'X)$$

Also due to the small sample we have grouped regimes 0 and 2 and classify the regimes in the following order: regime 0: fixed and forward looking pegs, regime 1: pure and dirty floating, regime 2: crisis, regime 3: backward looking pegs.

We propose the following explanatory variables: i) the level of inflation (i.e. if it is above or below certain threshold); ii) the share of non traditional exports over GDP as a proxy of the power of this group to influence the exchange rate policy; iii) the share of the domestically oriented manufacturing sector output (approximated by total industrial output less manufacturing exports) in total output as a measure of the ability of this group to influence economic policy; iv) the arithmetic average tariff rate as a proxy for the degree of overall policy orientation; v) the number of strikes-controlled by size of the population as a proxy for political instability; vi) a dummy that qualifies type of government (dictatorship or democracy); vii) the months of imports that could be purchased with net international reserves as an indicator of the economic situation of the external sector; and, viii) the percentage of population in the urban sector.

We hypothesize that the exchange rate affects the manufacturing sector through two different channels: first, it affects input prices, second, through competition with foreign products it affects the price of the final goods it sells. As a consequence, when the economy is closed -either because of high tariffs or quantitative restrictions- the manufacturing sector will benefit by a more appreciated currency and will favor fixed regimes or forward looking crawling pegs. On the other hand, when tariffs are low and there are not quantitative restrictions the effect of the exchange rate

on profits is not known a priory. The results of the ordered logit are reported in table 2.

Table No. 2

Explaining the Exchange Rate Regime Choice

Dependent Variable : Exchange Rate Regime.		
Number of obs : 46		
Log Likelihood : -41.11		
chi2 (5) : 28.7	Prob>chi2 : 0.00000	
Explanatory Variables	Coefficients	Z-ratio
INF20	-2.893	-2.707
MANUF(-1)	-33.146	-1.921
MANPROH(-1)	11.544	2.552
XNMIN(-1)	-5.905	-0.364
XMIN(-1)	-37.996	-1.384

INF20 is a dummy variable that takes a value of 0 if inflation is lower than 20% and zero otherwise, XMIN(-1) and XNMIN(-1) are the lagged value of the shares of mining and non mining exports over GDP respectively.

MANUF(-1) is manufacturing output as a percentage of total output lagged one period. MANPROH(-1) results from multiplying the previous variable by a dummy that takes the value of 1 when tariffs are below 30%. Thus MANPROH(-1) equals MANUF(-1) if tariffs are below 30% and 0, otherwise. The objective of this variable is to capture the idea that in periods of low protection the manufacturing sector can be indifferent about the level of the exchange rate and the regime.

One should be very careful in interpreting the coefficients of the ordered regression. In particular the effect of an increase in the explanatory variables on the probabilities of a particular exchange rate system are not unambiguously determined by the coefficients. Indeed, only after a tedious additional calculation such effect can be determined. Nevertheless, the sign of the effects of the explanatory variables on the two ends of the ordered choices are correctly determined by the coefficients of the above equation. Keeping this caveat in mind, we proceed to interpret the coefficients.

Not surprisingly, the sign of the inflation dummy on the exchange rate regime is the expected one: an increase in inflation reduces the probability of having a fixed exchange rate. Also the sign of the manufacturing sector is the one predicted and it is significant: for high tariff levels the manufacturing sector will favor a fixed exchange rate system whereas for low tariff levels its preferences are ambiguous.

The export sector -either in mining or in other activities- coefficients are not significant. This can have at least two explanations. First, the proxy to measure the strength of the export sector is poorly captured by its weight on GDP. It could be the case that the degree of cohesion of exporters is more relevant for our analysis and it will not be capture by such variable. Second, the export

sector could not be concerned with the exchange rate system if it is being compensated through other mechanisms. We explore this last channel with more detail in section 4.2.

We have also found that other variables like: urbanization, political instability and government political and economic orientation are unimportant to explain the exchange rate regime. In the first case, it could be that either the process of urbanization is too slow to be important or that the effect of this variable is already being captured by the growing share of the industrial sector in total output. In the second case, the number of strikes could be a poor proxy for political instability.

Another variable that resulted statistically insignificant in estimations and so was not reported was the one that measures the percentage of countries in the world with fixed or quasi-fixed exchange rates. One would expect that as this number decreases the probability of choosing a more rigid exchange rate regime falls. The fact that it is not significant is not completely surprising since for years Peru has had exchange rate policies that were not similar to what most of the rest of countries were doing.

The next sub section supplements this analysis by focusing on real exchange rate targeting

4.2.   *Real Exchange Rate Targeting*

A second line of research will try to explain the level of the exchange rate. As was argued above, at least in the short run, the government can affect the level of the exchange rate even if in the long run it is going to return to its equilibrium value.

The real exchange rate is going to be affected by both fundamental and non fundamental variables. Among fundamental variables, we will have terms of trade, non policy induced openness, a measure of productivity, long term capital flows. Changes in these variables are going to affect the real exchange rate -though changes in the equilibrium exchange rate without necessarily reflecting an explicit objective of the government with regards to the level of the real exchange rate. The theory clearly states the expected effects of each fundamental variable on the RER[8]. Thus, an improvement in the terms of trade could be the result either of an increase in the demand for domestic output or a reduction in the relative supply of domestic output.   In both scenarios the exchange rate is going to be appreciated. An increase in domestic productivity relative to the rest of the world also appreciates the exchange rate as a result of the Balassa-Samuelson effect. An increase in capital inflows increases the demand for domestic output and results in an appreciation of RER. Finally, a reduction in tariff levels reduces the demand for domestic output and results in the depreciation of RER. There will be other non fundamental variables that will also affect the real exchange rate levels. Those variables will be similar to the RHS variables used in the ordered logit model of the previous section.

We will estimate the following model:

$$LnRER = X_F \, \boldsymbol{b}_F + X_{NF} \, \boldsymbol{b}_{NF} + \boldsymbol{e} \tag{1}$$

---

[8] See Edwards (1988) and Williamson (1995).

where X_F and X_{NF} represent fundamental and non fundamental variables respectively and e is an error term, probably autocorrelated.

Alternatively to estimate equation 1 directly, we could have followed two steps: first, estimate the degree of misalignment and, second, explain it as a function of political or institutional variables that reflect government action. The level of misalignment would be the error term in the regression of the fundamental variables on the real exchange rate. Thus, we would estimate:

$$LnRER - X_F \boldsymbol{b}_F = X_{NF} \boldsymbol{b}_{NF} + \boldsymbol{e}$$

which would be equivalent to the previous one if at the small sample level the regressors X_F and X_{NF} are orthogonal which is not necessarily the case.

In order to estimate equation (1) we need to determine if series are stationary or not. Existing unit root tests are generally of low power for a short sample and very often fail to reject the hypothesis of a unit root. The existing literature finds that the RER converges to its long run trend. For example, Frankel and Rose (1995) using a panel for 150 countries found that the average half time of deviation from PPP (once time trends are adjusted) is approximately four and a half years. Other studies have been consistent with those estimations.

This suggests that exchange rates are trend-stationary as opposed to difference stationary and, therefore, we can use more traditional econometric techniques of estimation. In line with this, we assume that variables are stationary and use GLS -due to the existence of autocorrelation on the residuals- to estimate the equation above. The estimates are in table 3.

Table No. 3

Estimation of Real Exchange Rate

Dependent Variable : Natural Logarithm of RER		
Number of obs : 45 (1950-1996)		
R^2 : 0.3633	R^2 (original) : 0.644	
F(6 , 38) : 3.61	DW(original) : 0.892	
Prob > F : 0.006	DW(transformed) : 1.661	

Explanatory Variables	Coefficients	t-ratio
MANUF(-1)	-3.675	-2.072
CGDP	-2.808	-2.573
PRODUC	-0.934	-3.127
MANPROH(-1)	0.513	2.071
XNMIN(-1)	-0.665	-0.527
XMIN(-1)	-0.183	-0.011
CONSTANT	5.45	12.347
RHO	0.759	7.49

The results indicate that among the fundamentals variables both productivity and capital inflows are significant. Among the non-fundamental variables, again variables that capture the weight of the manufacturing sector in the economy are significant.

We need to remember that the derivative of an increase in the importance of the manufacturing sector is:

$$b_3 + b_4 d$$

where d is a dummy variable that takes the value of 1 when tariffs are below 30%. Therefore, the results confirm our priors that b_3 is negative and b_4 positive. This is not surprising. For years high tariffs - in place in Peru from 1964 until 1990 except for a short interval in the early 1980's- have implied that most of the manufacturing sector be non tradable and, therefore, favors a more appreciated currency. On the other hand in the 1950's and 1990's, years of low protection, the manufacturing sector starts to face competition from imported goods and its stance about exchange rate policy is less clear. In the estimations in table 3 both effects cancel each other ($b_3 = -b_4$).

Similarly to the estimations in the ordered logit, the effect of the importance of the export sector on the real exchange rate is not significant, which raises suspicion about how well the variable captures the export sector capacity to exert pressure.

One variable that has not been used and, as we mentioned in the previous section, is of potential importance are export subsides (CERTEX). Loosely speaking, we argue that exporters that receive export subsidies will have a total profitability of[9]

$$\ln((RER)(1+certex)) = \ln RER + \ln(1+certex)$$

which implies that if the RER is the left hand side variable to be explained, the existence of export subsidies will reduce the pressure of the export sector for a higher real exchange rate. The intuition is that being compensated with CERTEX, the pressure towards a more depreciated currency decreases. Since those subsides did not exist before 1970 and were eliminated at the beginning of the Fujimori administration in 1990 can not be include in the full sample. Therefore we run the regression for the sub sample 1970-1989. Results are in table 4 :

Table No. 4

---

[9] The equation is not exact because the RER also affects the price of imported inputs, however as long as technological coefficients are constant, the equation will hold.

Estimation of Real Exchange Rate

Dependent Variable :	Natural Logarithm of RER		
Number of obs :	20 (1970-1989)		
R^2 : 0.87		F(6 , 38) : 9.26	
Prob > F : 0.006		DW : 2.37	

Explanatory Variables	Coefficients	t-ratio
LTT	-1.487	-0.544
MANUF(-1)	-10.375	-4.910
CGDP	-3.903	-1.123
PRODUC	-0.569	-1.099
MANPROH(-1)	1.492	3.242
CERTEXTA	-2.043	-1.806
XMIN(-1)	-4.095	-1.116
XNMI(-1)	-2.702	-1.150
CONSTANT	8.537	7.128

The results regarding the preferences of the manufacturing sector hold. The Certex variable has the correct sign and it is significant at 10%, which can be seen as mildly supporting the hypothesis that the existence of export subsidies reduces the pressure for a more depreciated exchange rate, in an environment in which economic groups are highly diversified and to that extent might prefer a direct export subsidy.

Similarly to previous estimations, the coefficients of the variables that attempt to measure export sector interests are not significant and are equally so in the mining sector as well as the rest of the export sector. This result does not support our prior, that the non mining export sector should press more for a depreciated currency since are more elastic to changes in the real exchange rate.

4.2.   Elections and the Real Exchange Rate

We hypothesized in section 3, that in several occasions the exchange rate had been manipulated with electoral purposes. The idea is that an appreciated real exchange increases the real income and as a result governments tend to keep appreciated currencies before elections and depreciate right after election when is less costly in political terms.

Despite the fact that the number of elections in Peru in the last 50 years has been small, figure 1 shows the real exchange rate 9 months before and after elections. Even though we need to be cautious about drawing general conclusion from a small number of elections, we are surprised by the almost picture perfect political business cycle with a continuous appreciation before elections and a depreciation right after.

Figure No.1

Election and Real Exchange Rate
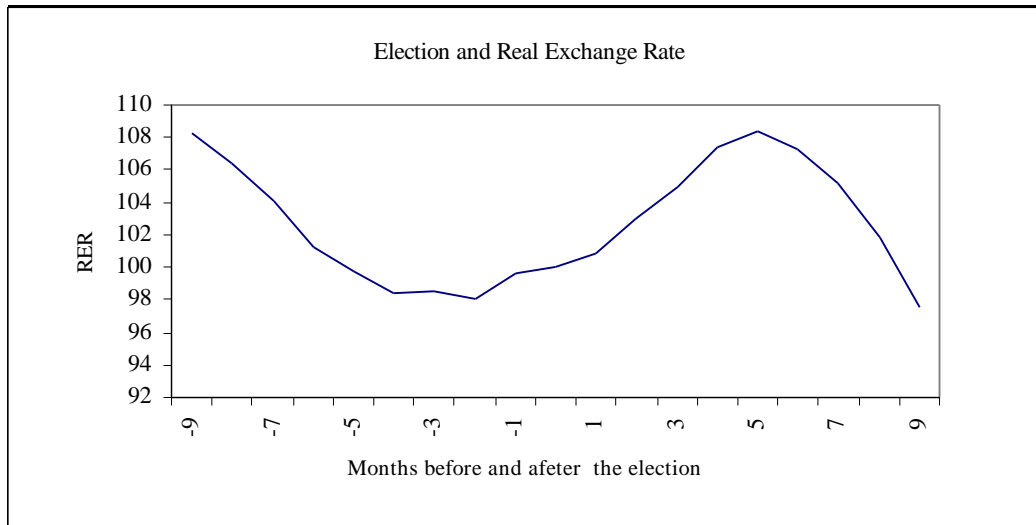
5. Complementary Analysis

This section analyzes three particular episodes of Peruvian exchange rate policy in order to illustrate how the choice of the exchange rate regime is also affected by non-economic variables. Thus, this section must be seen as complementary to the previous econometric analysis.

Adoption of Fixed Exchange Rate in 1959 and preferences for a strong currency

As was mentioned before, the government switched from a floating exchange rate to a de facto fixed exchange rate in the late 1950's and to a de jure fixed in 1961. Since average annual economic growth during the fifties was 5% and exchange rate volatility was not particularly high, it is interesting to explain such change in policy making.

It is important to highlight that a floating exchange rate was consistent with overall policy orientation in the fifties in which goods and capital were free to move in response to market forces. Thus, the adoption of the fixed exchange rate could be better understood if one explains the abandonment of the laissez-fare paradigm that prevailed in the 1950's and the adoption of a development paradigm aimed to promote industrialization.

One can advance some explanations to explain why the development paradigm based in exporting raw materials was questioned during the mid fifties. First, during those years, there was an important change in exports' profitability. As Thorp and Bertram (1978, p. 218) show, while total returned value in the mining sector as a percentage of gross value of output was 72% in 1952, it fell to 53% in 1960, due mainly to high repatriation rates. Similarly, there were symptoms of depletion of natural resources. This was very clear in petroleum, but it was also true with other non-mineral export goods like cotton and sugar.

Second, the external environment was a very important factor. CEPAL's theories about economic development encouraged a gradual policy shift aimed to benefit the incipient manufacturing sector against the still powerful export sector. Similarly, other researchers like Singer, Lewis, Hirshman

and Myrdal questioned the free trade paradigm and proposed the idea of balanced growth and the need for import substitution. Indeed, the Ley de Promocion Industrial of 1959 was prepared under the "encouragement" of a CEPAL mission.

Third, there were also very important social and institutional changes. For example there are very important demographic changes. Population growth was 1.9% during 1940s, 2.2% during 1950s and rose to 2.7% by 1961. Urbanization was very important as well. The population in cities larger than 2500 inhabitants rose from 18% in 1940 to 39% in 1961. Lima grew from half a million to two million people in the same period. The urbanization process increased white-collar employment, the emergence of the middle class and a shift in politics. Another important development that shifted the balance of politics was the increase in literacy rates that increased threefold the number of voters between 1950 and 1956. The election of President Prado in 1956 thanks to a "convivencia" with the middle class APRA political party was an effort by the traditional oligarchic system to extend its basis of political support. As Fitzgerald (1978) puts it : ".[It] was the last of the traditional oligarchic administrations: it was a regime which preserved, in the context of urbanization and industrialization which had taken place in the previous two decades, a serious divergence between the traditional political and emerging social structures." The new forces started to question the export-orientation of the oligarchic system. The emergence of an important urban population also demanded a strong currency in order to cheapen the value of foodstuffs, most of which was imported.

Another significant issue is that already in the mid-fifties there were some joint ventures between the local elite and foreign firms in the manufacturing sector. Even if it is true that were initially mostly in export processing, relatively soon after there were other joint ventures dedicated to pure import substitution. Those were stimulated by the belief that industrialization was necessary to increase employment and growth. Thus, the local elite was willing to support the promotion of industrial growth

Thorp (1978, 255) also mentions that the withdrawal of the local elite from the export sector implied that the foreign firms that remained lost leverage with the government –in an environment in which nationalism became very important. Also, since the mining sector became so important- especially copper- the losses of the real appreciation were relatively minor to the sector and no major action was taken.

1967 Devaluation

As we have seen, the adoption of a fixed exchange rate coupled with an inflation rate above international levels implied an appreciation of the exchange rate beyond what any reasonable gain in productivity could warrant. While mainly due to the fishing boom the balance of payments was healthy until 1965, there is an acute deterioration of the balance of payments in 1966 as a result of the worsening in the terms of trade and the accumulation of a policy induced real appreciation. The reduction of capital inflows made things worse.

The reduction of the unsustainable current account deficit though the usual method of expenditure-switching and expenditure-reducing policies was more complicated that in previous crises. Belaunde's government political base had a large resistance to devaluation. The benefits of postponing the devaluation were: keeping low prices of imported food consumed by urban population, cheap inputs and equipment for the rapidly expanding industrial sector and, keeping the burden of government external debt low.

Thus, the government was facing internal political difficulties. It only devalued in 1967 when the alternatives – to raise taxes and impose exchange controls- were unacceptable to the IMF and APRA-which dominated the congress.

1990's adoption of floating exchange rates and the appreciation of the real exchange rate

In August 1990, the newly elected government of Alberto Fujimori launched a stabilization program aimed at eliminating the hyperinflation that inherited from the previous regime. Unlike most successful stabilizations in the region, the program did not fix the exchange rate but assumed control of the money supply after an initial reliquefication. During the following years, the Central Bank intervened trying to depreciate the currency as long as it was consistent with the objectives of reducing inflation.

The initial election of exchange rate system seems to be more the result of the absence of reserves to credibly commit to a peg and the reluctance of international institutions to provide funds before the adjustment was made. In that sense, initial conditions inherited by Fujimori's government can explained to a great extent the exchange rate regime choice.   On the other hand, given this initial decision, it is relatively easy to understand the duration of such regime until now. To the extent that stylized facts show that exchange-rate-based stabilizations are expansionary at the beginning and contractionary afterwards, while the money based stabilizations show the opposite, it seemed to be reasonable to keep the flexible regime once the main economic costs had been paid. Furthermore, one can easily rationalize a sort of histeresis or path dependency in the lines suggested by Dixit (1996). Basically, once an exchange rate system is chosen, to switch to another regime implies to pay sunk cost associated with the political costs of implementing a new regime plus the option value of preserving the status quo in case a favorable situation to peg the exchange rate reverses. Given the relatively low volatility of the nominal and real exchange rate in Peru in the 1990's there was not certainly a consensus to switch regimes.

Another relevant point refers to the level of the exchange rate. Any measure of real exchange rate overvaluation shows that the domestic currency was strong compared to its long run value, even after controlling for changes in the fundamentals. What explains the reluctance to target a weaker exchange rate? Probably the most important reason is the consensus to eliminate inflation after years of hyperinflation. This was reflected in the increasing autonomy of the Central Bank that since August 1990 was forbidden by law to provide credit to the Central Government. The preeminence of this anti inflation consensus in a scenario of dirty floating implied a very limited room of maneuver to depreciate the currency. Even the more vocal supporters of targeting a weaker real exchange rate, mainly ADEX, conceded that one should not abandon the low inflation objective. Basically, they asked the government to do something but could not provide an alternative. Also, the economic stabilization , the implementation of structural reforms and the virtual control of terrorism resulted in economic gains that more than offset any of the losses of the real appreciation.

6. Concluding Remarks

One of the first conclusions of the paper is that the variables that explained the exchnage rate regime are similar to those that explain the RER level. Given that domestic inflation has consistently be higher than international inflation, in Latin America a fixed exchange rate regime is

associated with a RER appreciation. As a consequence, in practice those variables that help to understand the fixation of the nominal exchange rate in the region, and Peru is no exception, are also useful to understand the degree of overvaluation of the local currency.

Also in this context of high cronic inflation, it seems to be clear that the choice of the exchange rate regime is strongly linked to the trade off between domestic stability and foreign competitiveness rather than between flexibility and volatility. Economic instability, proxy by the level of inflation, is an important factor to explain the adoption of an exchange rate regime and the degree of misalignment. Higher inflationary settings go against fixed exchange rate regimes because the RER appreciation induced hurts foreign competitiveness.

Our empirical results support the hypothesis that interest group pressures as well as the overall policy context, have been important factors to explain both the choice of a exchange rate regime as well as the degree of misalignment. In the context of an import substitution development strategy, the industrial sector oriented to the domestic market (both entrepreneurs and unions), push for a fixed exchange rate regime and a stronger (appreciated) currency. However, in a more open market environment, manufacturing groups' exchange rate preferences are not as clear.

The exchange rate policy has to be understood in the context of a development paradigm that in turn sets the stage for an overall policy orientation. During the late fifties and until late 1980's the import substitution strategy has clearly dominated the Peruvian economic scene and as a consequence during that period there was a marked preference for a fixed exchange rate regime and a strong currency. Only during severe balance of payment crisis this strategy was abandoned but only until foreign accounts improved. On the other hand, more liberal settings like the early 1950's and from 1990 onwards, correspond to more flexible exchange rate regimes.

Results do not show any evidence regarding the role that export groups could have played in shaping exchange rate policy in Peru during the last decades. The major Peruvian exporters, miners, have a highly dollarized cost structure so are relatively insensitive to the exchange rate level and will probably rather push for tax exemptions.

Regarding other export groups, two factors can explain why exports over GDP are not a good measure of their lobbying power. On one hand the difficulty to develop a variable that can appropriately capture the pressures that the export sector could have exerted on the government for any type of exchange rate policy. In this case the weight of exports on GDP does not seem to be a good measure of exporters power to influence macro economic policy. On the other hand, from early on in the period being analyzed, export groups were dismantled, neutralizing their capacity to exert any type of political pressures. The drastic agrarian reform implemented by the military government by the late 1960's, by transferring property of coastal haciendas to the workers, destroyed the capacity of sugar and cotton exporters to pressure for any policy. Similarly the nationalization of mining and oil enterprises by the government neutralized any capacity of the other major group of exporters to demand any sort of economic policy. These transformations could also explain why, although the weigh of exports on total GDP remained relatively high during the whole period, said variable is a poor proxy of the ability of exporters to influence economic policy.

However, our results do present some evidence that the emerging export groups, instead of channeling their pressures through the exchange rate, in the context of a highly protectionistic tariff structure, prefer to resort to direct export subsidies. It seems that it was less confrontational

(with members of related entrepreneurial associations) to push for some export promotion mechanisms like tax reimbursements, rather than for a weak RER. So the results show that, ceteris paribus, and given the other mechanisms, that they could comfortably live with an exchange rate regime with limited flexibility, or even a fixed exchange rate regime. It is worth recalling that non traditional exporters mostly emerged in the midst of economic recessions when the domestic market was not a good option and start exporting as a way to survive. Very few enterprises were planned from their origin as exporters. These enterprises prefer a low exchange rate for their imported inputs and high exchange rates for their sales abroad, so multiple exchange rates will fit them right. In absence of such mechanism they will be willing to accept a strong (appreciated) RER if simultaneously there are convenient promotional measures as tax reimbursements. A further desegregation of non-traditional exporters in such a way that true exporters can be separated from occasional ones could probably render the expected results: the higher the weight of those exporters in the economy, the more likely a flexible exchange rate will be selected.

Finally, another important result of this paper is that the political cycle has had an important influence on the exchange rate policy. Indeed, administrations have shown a tendency to appreciate the RER before elections and devalue it after them.

Bibliography

Alesina, Alberto. 1989. "Politics and Business Cycles in Industrial Democracies.' Economic Policy 8: 57-59.

Alesina, Alberto and Allan Drazen. 1992. "Why are Stabilizations Delayed?" American Economic Review 82 (May).

Alesina, Alberto and Lawrence Summers. 1993."Central Bank Independence and Macroeconomic Performance: Some Comparative Evidence." Journal of Money, Credit and Banking 25 (February): 151-162

Asea, Patrick and Enrique Mendoza. 1994. "The Balassa-Samuelson Model: A General Equilibrium Appraisal." Review of International Economics 2 (3): 244-67.

Banco Central de Reserva del Peru. Annual. Memoria. Lima.

Bufman, Gil and Leonardo Leiderman. "Searching for Nominal Anchors in Shock-Prone Economies in the 1990s: Inflation Targets and Exchange Rate Bands.", prepared for the Sixth Annual Meeting of the International Forum on Latin American Perspectives.

Calvo, G. Leiderman L. and C. Reinhart. 1993. " Capital inflows and real exchange rate appreciation in Latin America" IMF Staff Papers 40(1) 108-51.

Collins, Susan. 1996 "On becoming more flexible: Exchange Rate Regimes in Latin America and the Caribbean." Journal of Development Economics 51, 117-138.

Dixit,Avinash. 1996. The Making of Economic Policy: A Transaction-Cost Politics Perspective. Cambidge, MA: MIT press.

Edwards, Sebastian. 1996. "The determinants of the choice between fixed and flexible exchange rate regimes", NBER working paper 5756.

Edwards, Sebastian. 1989. Real Exchange Rates, Devaluation and Adjustment. Cambridge, MA: MIT Press.

Edwards, Sebastian. 1988. Exchange Rate Misalignment in Developing Countries, Baltimore, John Hopkins University Press.

Eichengreen, Barry. 1996. Globalizing Capital. A History of the International Monetary System. Princeton, New Jersey. Princeton University Press.

Eichengreen, Barry, Jeffry Frieden and Jurgen von Hagen.1995."The Political Economy of European Integration: Introduction." In Monetary and Fiscal Policy in an integrated Europe, edited by Barry Eichengreen, Jeffry Frieden and Jurgen von Hagen. Berlin, Heidelberg, New York. Springer.

Fischer, Stanley, Ratna Sahay and Carlos Vegh. 1996. "Stabilization and Growth in Transition Economies – The Early Experience." Working Paper WP/96/31, International Monetary Fund.

Fitzgerald, E.V.K.1978. The Political Economy of Peru 1956-78: Economic Development and the Restructuring of Capital. Cambridge, England. Cambridge University Press.

Frankel and Rose. 1996. "A Panel Project on Purchasing Power Parity: Mean Reversion Within and Between Countries" Journal of International Economics 40, p. 209-224

Frieden, Jeffry. 1994. "Exchange Rate Politics: Contemporary Lessons from American History" Review of International Political Economy, 1.

Ghezzi, Piero. 1997. "Exchange Rate Based Stabilization: When to Switch Anchors." Ph.D. Dissertation, chapter 1.

Greene, William. 1997. Econometric Analysis. New York . Prentice Hall.

Grilli, Vittorio, Donato Masciandaro and Guido Tabellini. 1991. "Political and Monetary Institutions and Public Financial Policies in Industrial Countries." Economic Policy 13: 342-392.

Heckman, James and Burton Singer. 1984. "Econometric Duration Analysis" Journal of Econometrics.

IMF Several Numbers. Exchange Arrangements and Exchange Restrictions. Wasington D.C.

Klein, Miguel and Nancy P. Marion. 1994. "Explaining the Duration of Exchange Rate Pegs." Working Paper no. 4651, Cambridge, MA: National Bureau of Economic Research.

Lyons, Richard. 1992. "Floating Exchange Rates in Peru, 1950-54" Journal of Development Economics 38, 99-118.

Obstfeld, Maurice. 1995. "International Currency Experience: New Lessons and Lessons Relearned." Brookings Papers of Economic Activity 1:1995: 119-196.

Obstfeld, Maurice. 1997. "Open-Economy Macroeconomics: Developments in Theory and Policy" NBER Working paper 6319.

Obstfeld, Maurice and Kenneth Rogoff .1995. "The Mirage of Fixed Exchange Rates." Journal of Economic Perspectives 9 (Fall) 73-96.

-----------. 1996. Foundations of International Macroeconomics. Cambridge, MA: MIT Press.

Paredes, Carlos and Jeffrey Sachs. 1991. Peru's Path to Recovery. Washington, DC. Brookings Institution.

Paredes, Carlos. 1988. Política Económica, Industrialización y Exportaciones de Manufacturas en el Perú. Grade Documento de trabajo 1.

Pastor, Manuel Jr. 1992. Inflation, Stabilization and Debt: Macroeconomic Experiments in Peru and Bolivia. Boulder, Colorado. Westview Press.

Rogowsky, Ronald. 1987. "Trade and the Variety of Democratic Institutions." International Organization 47, 1-39.

Rojas, Jorge. 1996. Politicas Comerciales y Cambiarias en el Peru: 1960-1995. Lima, Peru. Fondo Editorial Universidad Catolica del Peru.

Sachs, Jeffrey. 1985. " The Dollar and the Policy Mix." Brookings Papers of Economic Activity 1:1985: 117-85

Sachs, Jeffrey. 1996. "The Transition at Mid-Decade." American Economic Association Papers and Proceedings 86(2): 128-33.

Thorp, Rosemary and Geoffrey Bertram. 1978. Peru 1890-1977: Growth and Policy in an Open Economy. New York, NY. Columbia

Anexo

Regime Choice

```
Ordered Logit Estimates                      Number of obs =      46
                                             chi2(5)       =   28.70
                                             Prob > chi2   =  0.0000
Log Likelihood = -41.115705                  Pseudo R2     =  0.2587

------------------------------------------------------------------------
  regim1 |     Coef.   Std. Err.       z     P>|z|    [95% Conf. Interval]
---------+--------------------------------------------------------------
   inf20 |  -2.89343   1.069055    -2.707    0.007    -4.988738   -.7981215
 manuf2l |  -33.14626  17.25827    -1.921    0.055    -66.97186    .6793322
manprohl |  11.54484   4.523881     2.552    0.011     2.678193   20.41148
 xtnminl |  -5.905884  16.23772    -0.364    0.716    -37.73124   25.91947
   xminl |  -37.9967   27.46159    -1.384    0.166    -91.82044   15.82703
---------+--------------------------------------------------------------
   _cut1 |  -10.16603  3.819384            ( Ancillary parameters)
   _cut2 |  -7.829284   3.68292
   _cut3 |  -6.844437  3.702549
------------------------------------------------------------------------

  regim1 |      Probability          Observed
---------+-----------------------------------
       0 |   Pr(      xb+u<_cut1)      0.4565
       1 |   Pr(_cut1<xb+u<_cut2)      0.3261
       2 |   Pr(_cut2<xb+u<_cut3)      0.1087
       3 |   Pr(_cut3<xb+u)           0.1087
```

Estimation of RER

a)

```
Source |       SS       df       MS              Number of obs =      46
---------+------------------------------          F(  6,   39) =   11.80
   Model | 1.17798268     6  .196330446          Prob > F      =  0.0000
Residual | .649059474    39  .016642551          R-squared     =  0.6447
---------+------------------------------          Adj R-squared =  0.5901
   Total | 1.82704215    45  .040600937          Root MSE      =  .12901

------------------------------------------------------------------------
  ltcrm2 |     Coef.   Std. Err.       t     P>|t|    [95% Conf. Interval]
---------+--------------------------------------------------------------
    cpbi |  -6.072733  1.314445    -4.620    0.000    -8.73145    -3.414016
  produc |  -1.096186  .4062404    -2.698    0.010    -1.917885   -.2744872
 manuf2l |  -6.135848  .9054063    -6.777    0.000    -7.967205   -4.304491
manprohl |  .6698226   .2340464     2.862    0.007     .196419    1.143226
   xminl |  -.943521   1.555428    -0.607    0.548    -4.089672    2.20263
 xtnminl |  -.8971791  .9458415    -0.949    0.349    -2.810324   1.015966
   _cons |  6.083729   .2360403    25.774    0.000     5.606292   6.561165
------------------------------------------------------------------------
```

```
(Cochrane-Orcutt regression)

  Source |       SS       df       MS                  Number of obs =      45
---------+------------------------------              F(  6,    38) =    3.61
   Model | .215391437        6  .035898573            Prob > F      =  0.0062
Residual | .377482794       38  .009933758            R-squared     =  0.3633
---------+------------------------------              Adj R-squared =  0.2628
   Total | .592874231       44  .013474414            Root MSE      =  .09967


-----------------------------------------------------------------------------
  ltcrm2 |      Coef.   Std. Err.       t    P>|t|     [95% Conf. Interval]
---------+-------------------------------------------------------------------
    cpbi | -2.808048   1.091175     -2.573   0.014    -5.017015   -.5990805
   produc | -.9340476    .298718     -3.127   0.003     -1.53877   -.3293247
  manuf2l | -3.675631   1.774189     -2.072   0.045    -7.267289   -.0839729
  manprohl |  .5130312   .2477105      2.071   0.045     .0115675    1.014495
    xminl | -.0183754   1.683923     -0.011   0.991      -3.4273    3.390549
   xtnminl | -.6650126   1.262542     -0.527   0.601    -3.220895    1.890869
   _inter |  5.455267   .4418424     12.347   0.000     4.560804     6.34973
---------+-------------------------------------------------------------------
     rho |    0.7592     0.1013       7.491   0.000       0.5549      0.9634
-----------------------------------------------------------------------------

Durbin-Watson statistic (original)    0.892833
Durbin-Watson statistic (transformed) 1.661057




b)


  Source |       SS       df       MS                  Number of obs =      20
---------+------------------------------              F(  8,    11) =    9.26
   Model | .945733656        8  .118216707            Prob > F      =  0.0006
Residual | .140423282       11  .012765753            R-squared     =  0.8707
---------+------------------------------              Adj R-squared =  0.7767
   Total | 1.08615694       19  .057166155            Root MSE      =  .11299


-----------------------------------------------------------------------------
  ltcrm2 |      Coef.   Std. Err.       t    P>|t|     [95% Conf. Interval]
---------+-------------------------------------------------------------------
     ltt | -.1487176   .2732315     -0.544   0.597     -.750096    .4526608
    cpbi | -3.903418    3.47665     -1.123   0.285    -11.55547    3.748638
   produc | -.5690437   .5175741     -1.099   0.295    -1.708217    .5701292
  manuf2l | -10.37537   2.113301     -4.910   0.000    -15.02671   -5.724023
  manprohl |  1.492553   .4603102      3.242   0.008     .4794168    2.505688
    xminl | -4.095531   3.669002     -1.116   0.288    -12.17095    3.979887
   xtnminl | -2.702118   2.350615     -1.150   0.275    -7.875786    2.471549
  certexta | -2.043641   1.131897     -1.806   0.098    -4.534928    .4476466
    _cons |  8.537565   1.197747      7.128   0.000      5.90134    11.17379
-----------------------------------------------------------------------------

Durbin-Watson statistic (original)    2.370650
```