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Trade Policies, Macroeconomic Adjustment, and Manufactured Exports

The Latin American Experience

Sarath Rajapatirana

Trade policies cannot resolve current account problems. Their effect on the current account disappears after three years.

Summary findings

Rajapatirana examines the relationship between trade policies and macroeconomic adjustment in six Latin American countries: Argentina, Brazil, Chile, Colombia, Costa Rica, and Mexico.

For the period 1965–94, the six countries experienced 26 trade policy episodes: 11 of tightening, and 15 of loosening trade policies.

For the analysis, Rajapatirana worked with four periods that coincided with different prevailing exchange rate regimes: 1965–73, 1974–79, 1980–83, and 1984–94. Using a probit model, he examined the relationship between tightening and loosening trade policies and the current account balance, the exchange rate, and the growth in manufacturing exports. His main conclusions:

• Experience in these six countries for 1965–94 confirmed the hypothesis that trade restrictions cannot solve current account problems.

• For trade liberalization to work, there must be real devaluation either before or during liberalization. Reluctance to devalue, for one reason or another, may lead to trade restrictions. There is evidence that trade restrictions were used in lieu of devaluations during 1965–83. In 1984–94, however, the reluctance to devalue was overcome.

• Growth in manufactured exports helps maintain trade reform and release the economy from foreign exchange constraints. As expected, trade liberalization improved exports (liberalization reduces the bias against exports) while trade tightening hurt them.

• The impact of trade reform on the fiscal system cannot be predicted because tax revenues can go in either direction depending on initial conditions, the elasticity of supply in importable and exportable sectors, and the economy's growth rate.

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Trade Policies, Macroeconomic Adjustment, and Manufactured Exports:
The Latin American Experience

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I. Introduction

The principal question in the literature on the relationship between trade policies and macroeconomic adjustment is how macroeconomic adjustment impinges upon trade policy making. Most of the research on the sequencing of trade policies postulates that macroeconomic stabilization and adjustment should precede trade policy reforms. This is based on the argument that macroeconomic disequilibrium--which appears as inflation or current account deficits-- leads to overvalued exchange rates and undermine trade policy reforms.[1] Many studies have analyzed the relationship between macroeconomic policy changes and trade regimes.[2]

However, little research has been done about the reverse relationship of how trade policies affect macroeconomic adjustment. Countries experiencing macroeconomic imbalance, such as a current account deficit that cannot be financed, have used and continue to use trade policies to deal with the imbalance. Thus, countries experiencing rising current account deficits have attempted to tighten trade policies while those experiencing rising current account surpluses that lead to inordinate reserve accumulation have attempted to loosen or liberalize their trade policies. In this sense, trade policies have been used as instruments for macroeconomic adjustment, either by reducing expenditures on imports through import restrictions, or by inducing increased expenditures on imports by liberalizing the import regime. Raising the domestic price of imports through quantitative restrictions (QRs) or through import tariffs induces a switch in expenditures from imports to the domestic market. This switch could raise the price of non-tradables. Exports are also affected to the extent that they use imported inputs and the existing bias against exports is increased because their profitability relative to import substitutes and other non-tradables falls. Unless the import restrictions are accompanied by export subsides of one type or another, exports are adversely affected.

1/ See Edwards (1984) for instance.

2/ See Corden (1990) for a detailed discussion.

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The analytical basis for macroeconomic adjustment is well summarized by Corden (1990). A small open economy has a current account deficit which needs to be removed. The less foreign credits are available the more speedily this has to be done. The standard analysis is that total expenditure by government and the private sector has to fall. This is the reduction in 'absorption' which reduces demand for both tradables and nontradables. In addition, there has to be a real devaluation which shifts both the pattern of domestic demand from tradables towards nontradables and the output pattern from tradables towards nontradables. This is a 'switching' policy which ensures that the process of 'external balance' takes place while 'internal balance'-- overall employment--is being maintained. Without such a switching, the reduction in domestic demand required to improve the current account would result in excess supply and unemployment in the nontradable sectors of the economy.[3]

If the policy instrument to bring about switching is to be exchange rate adjustment, it is necessary that a real devaluation does take place as a result of nominal devaluation. If wages rise when the price of imports and the cost of living rise, or if there has not been an adequate expenditure reduction so that the devaluation-induced rise in demand for nontradables creates excess demand and then some inflation of nontradable prices (or, more broadly, of prices of home-produced goods), a real devaluation will not be achieved. It is common that initially a nominal devaluation does bring about a real devaluation, but that its effects are gradually eroded at least to a partial extent. A great deal hinges on whether monetary policies are accommodating or not. Here, the experiences of developing countries have varied greatly.

Given this framework, it is clear that the recourse to trade policy instruments to deal with a current account deficit or a surplus is related to a government's reluctance to use the exchange rate to switch expenditures or to cut expenditures through absorption policies. Here again, trade policies are used as surrogates for macroeconomic policies. In the face of rising and monetized current account surpluses, inflation and an appreciation of the exchange rate will result, if fiscal

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[3] See ch. 1 of Corden (1985) for a diagrammatic exposition of this standard analysis. The basic theory originated with Meade (1951) and th concept of switching with Johnson (1958).

and monetary macroeconomic policies are not used to deal with an accumulation of reserves. While such an appreciation is at times warranted, an over-shooting of the exchange rate must be avoided.[4]

Many countries in Latin America have resorted to trade policies to deal with macroeconomic imbalances. This paper examines the use of trade policies as instruments of macroeconomic adjustment in six Latin American countries--Argentina, Brazil, Chile, Colombia, Costa Rica, and Mexico. These six countries provide a rich collection of experiences given their past large macroeconomic imbalances. Both liberalization and tightening trade policy episodes are reviewed to evaluate their effectiveness. The general conclusion that emerges is that trade policies have no effect on the current account balance beyond their immediate effect in the presence of other relevant variables such as the real exchange rate, demand in importing countries, the fiscal deficit and the terms of trade. This may be one reason why the six countries have not used trade policies for macroeconomic purposes after 1991. However, it should be noted that in the wake of the Mexican peso crisis in December 1994, Argentina, Brazil, and Mexico increased tariffs marginally. These measures have been adopted mainly for revenue reasons and therefore should not really be viewed as departures from the commitment to liberalization and an open trade regime. At one level, this recourse to trade policies for macroeconomic purposes was necessary for these countries since they were operating in a virtually fixed exchange rate environment.

In particular, it is interesting to consider these issues in the context of manufactured exports. Manufactured exports play an important role in macroeconomic adjustment. For one, an increase in manufacturing exports removes foreign exchange constraints, gives greater confidence to policy makers to sustain trade reforms, and creates a lobby that would support fuller trade reforms. In the case of the East Asian countries for instance, manufactured exports played a critical role in sustaining macroeconomic adjustment and indeed became the foundation

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4/ See Dornbusch (1980) for an elaboration of this result.

for high output growth. In the case of the six countries studied here, though the growth in manufacturing exports has been modest, it has helped the process of overall liberalization.

The rest of the paper is divided into five sections: II. Evolution of trade policies for macroeconomic adjustment in the six countries; III. Trade and exchange rate policies; IV. Effects of trade policy episodes; and V. Conclusions.

II. Evolution of Trade Policies for Macroeconomic Adjustment
in the Six Countries

Since the mid-1960s the six Latin American countries, Argentina, Brazil, Chile, Colombia, Costa Rica, and Mexico, have used some sort of trade policies for macroeconomic adjustment. In particular, an increase in import restrictions has been the normal response to a balance of payments deficit.   Also, there have been many episodes of liberalization of trade policies associated with improving balance of payments positions.

The most common and effective trade policy instrument used to deal with current account deficits has been *quantitative restrictions (QRs)*. This method has usually consisted of shifting import items from a *free list* to a *QR* list.   Conversely, trade policies were liberalized by increasing the number of items on the *free list*. At times *QRs* have been applied to all imports. Some countries have subjected all imports to *QRs* unless they are included in a *positive list*. Others have freely admitted all imports unless included in a *negative list*. A switch from a *positive list system* to a *negative list system* could represent a substantial liberalization.

Since 1965 there have been twenty six trade episodes with eleven trade policy tightenings and fifteen liberalizing episodes in the six countries (table 1). These episodes are identified on the basis of changes in import quotas, tariffs, export taxes, and subsidies in each country. *QRs* were the most common tool. Tariffs, export subsidies, and taxes played a minor role in these

episodes. In most instances, tariffs were imposed mainly for revenue purposes. At times, export taxes were raised simultaneously with a devaluation to siphon off the higher export revenues in domestic currency resulting from a devaluation. Sometimes export subsidies were used to offset the bias against exports arising from an increase in the items subject to quotas or an accompanying increase in tariffs.

What is of interest in analyzing the use of trade policies for macroeconomic adjustment purposes are the changes in the direction and extent of trade policy, and the duration of the policy episode. The duration of each trade policy episode was measured as the period the policy was maintained from the time it was introduced. The episodes have been further identified on the basis of detailed information obtained from Little, Cooper, Corden, and Rajapatirana (1993), Papageorgiou, Michaely, and Choksi (1991) and, Alam and Rajapatirana (1993).

Within the period 1965-94, there are four distinguishable subperiods coinciding with changes in the exchange rate regimes. Table 1 distinguishes these periods (1965-73, 1974-79, 1980-83, and 1984-94) related to changes in exchange rate regimes in these countries and indeed for the whole world. Argentina, for example, had six episodes over the whole period--three trade liberalizing episodes and three trade tightening episodes. Argentina and Brazil have had the largest number of policy episodes over the whole period; this is not surprising given the large and persistent macroeconomic imbalances they experienced during the 1970s and 1980s. These countries changed their trade regimes fundamentally after 1991. Chile, on the other hand, had only three episodes with a fundamental trade reform or regime change in 1974. Mexico also had three episodes while Colombia and Costa Rica had four episodes each. Table 2 shows that in the first period (1965-73), there were six trade tightenings and nine liberalizations. As might be expected, the second and the third periods (1974-79 and 1980-83) which coincided with the first and the second oil shocks (1973 and 1980) and the debt shock (1982) were mainly characterized by tightening, while the last period (1984-94) was one of liberalizing trade policies. The increases in tariffs in Argentina, Brazil, and Mexico in early 1995 is avowedly a temporary measure in the wake of the Mexican Peso crisis and therefore should not be viewed as fundamental departure from the liberalization process. However, it is indeed a case of using

trade policies for macroeconomic purposes and the results of the past efforts become immediately germane in judging the potential effects of these trade measures. It is too early to examine the effects of these early 1995 trade policy changes. But, the experiences of the past become even more important in visualizing the outcome of these trade policy episodes beyond the immediate effects.

The evolution of trade policies shows a number of characteristics. First, when a current account problem developed during the first three periods--1965-73, 1974-79, and 1980-83--the tendency was to tighten *QRs*. The trade tightening was usually done by shifting items from a free to a restricted list. The change in trade policy was an important instrument of macroeconomic adjustment policy in each case with the sole exception of Chile in 1974. In the case of Chile, there was a large current account deficit following the Allende government. The new government liberalized the trade regime and in doing so departed from the then standard response to a current deficit. Although trade tightenings were usually preceded by current account deteriorations, this was not always the case. Countries that had access to external funds tended to finance the deficit rather than attempt to adjust. This of course was the right policy response, if the deficit was expected to be temporary and if it could be financed without difficulty. That was pretty much the case for nearly all the six countries before 1982.

In any case, a current account deficit could not be addressed by import restrictions alone because there is no reduction in excess demand that had created the current account deficit in the first place. On the other hand, the import restrictions switch expenditure to the domestic market including non-tradables and, at the same time, create a bias against exports. If the latter is not corrected, the balance of payments problems will persist. If the import restrictions have been in place before, this could create a phenomenon known as *import starvation* which will lead to a reduction in output including exports. Exports are handicapped by the difficulty of obtaining imported components and inputs and sometimes through a real appreciation. As a reaction to the country's previous bad experience with protection itself, it becomes easy to find support for liberalization. The worse the previous experience, the more drastic the change is

likely to be. Liberalization in such cases must always be preceded by, or associated with, big devaluations.

Second, during the fourth period (1984-94), worsening of the macroeconomic situation did not lead to trade tightening but rather to trade liberalizations. As noted before, this relationship has been modified somewhat in the wake of the Mexican economic crisis in December 1994. Only one trade tightening took place during that period---Brazil's in 1988. This could be readily explained by the balance of payments situation though it was also reversed in 1990. In five other cases, deterioration of the current account led to a package of crisis policies that included trade liberalization--referred in the recent literature as *"the new liberalization"*.[5] Therefore, the earlier relationship between current account deficits and trade policies was broken.

The extreme case here is that of oil exporter, Mexico, which faced an adverse price shock in 1985. At this point the government saw that imposing import restrictions was not a good policy for all the familiar reasons. Hence, contrary to earlier practice, Mexico instituted a trade liberalization program and other measures associated with structural adjustment, such as devaluation, tight fiscal policies, and increases in public enterprise prices and privatization.

Third, the responses to current account deficits have been asymmetric. While improvements in the current account were less likely to lead to liberalizing episodes, deteriorations in the current account were more likely to lead to tightenings. For example, Colombia did not liberalize with the coffee boom of 1976-78. There is of course less of an urgency to adjust to a surplus compared to a balance of payments deficit. In other words, countries were more prepared to live with an appreciation of the exchange rate arising from a surplus that was monetized, than accept the need to devalue the currency and cut absorption. There were two political economy reasons for this asymmetry: (i) except for Chile in 1974, these countries were ideologically committed to trade restrictions as a means of promoting domestic industry; and (ii) interest groups that were supporting import restrictions were more powerful

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5/ See Little, Cooper, Corden and R. patirana (1993) for a more detailed discussion.

because of the long tenure of the import substitution regime, compared to consumers and exporters, who had to pay for the import restrictions in terms of higher prices and a bias against the production of exportables.

Fourth, the various trade policy episodes were only mildly related to external shocks. The first period (1965-73) brought no significant external shocks other than the commodity boom at the end of the period. Trade tightenings resulted from current account problems which in turn resulted from domestic policy shocks. In the second and third periods (1974-78, 1980-83), external shocks--the first and second oil shocks and the debt shock--did play a significant role but they did not always have the expected effects. For example, Colombia did not liberalize with the coffee boom. As noted, favorable current account effects did not always lead to liberalization while unfavorable effects did not always lead to trade tightening. In the fourth period (1984-94) the principal external shock was the 1986 collapse of oil prices. However, the oil exporters, Mexico and Colombia, did not tighten their trade policies.

One way to test the relationship between trade policies and macroeconomic adjustment is by regressing trade policy changes on current account balances in the previous year. The results of these regressions are shown in equations 1 and 2.

$$TI_t = -0.651^* - 0.158 \ CA_{t-1}^* \qquad (1)$$
$$(-1.82) \ (-1.80)$$
$$N = 26 \qquad LL = -15.66$$

$$TI_t = -0.757^{***} - 0.144 \ CA_{t-1}^{**} \qquad (2)$$
$$(-2.94) \quad (-2.49)$$
$$N = 60 \qquad LL = -34.43$$

where $TI = 1$ if there is a tightening of trade policies, $TI = 0$ if there is a liberalizing of trade policies, and CA = (Current account balance/GDP).

There are 60 events of trade policy tightening and liberalizing where the duration of each episode is enumerated.[6] When the data are restricted to the first year of each episode, there are 26 trade policy episodes.

The results of the probit[7] analysis shows that it is more likely to encounter tightening in the trade policies when the countries experienced a deficit in the current account in the previous year.[8] The results indicate that there is a higher probability that tightening episodes are associated with current account deficits. Of course, not all current account deficits are followed by tightening.

As indicated by these regressions, the attempt to use tightening and liberalizing trade polices to affect macroeconomic adjustments have been a feature of these countries for the past thirty years. However, Latin American countries are not unique in this respect; many other countries have adopted similar responses when faced with macroeconomic imbalances. What is unique about Latin America though is the frequency and extent of the imbalances.[9]

6/ The 60 events are the sum of all episodes when the duration of each episode is counted as one for each year.

7/ Given that the dependent variable takes values 0 and 1, the OLS model will give biased estimators for any sample size. The alternative is to use (binary choice) probit or logit models. These models take the form:
$$P[Y_i = 1/X_i] = F(X_iB).$$
While the probit model uses a normal function, logit uses a logistic function for the error term. Since the two functions are very similar and since the use of the standard normal cumulative density function is less contested in the literature, we use the probit model to test our hypotheses.

8/ Here and in the subsequent equations, the t-statistic appears in parentheses. Superscript * indicates significance at the 10% level, superscript ** indicates significance at the 5% level, and superscript *** indicates significance at the 1% level. N indicates the number of observations, and LL the log-likelihood function.

9/ In a larger sample of eighteen countries to which this group of six countries belongs, there have been fifty nine trade policy episodes, while the six countries have had twenty six episodes. Thus,these six countries, which were a third of the larger sample account for nearly half of the trade episodes. See Little, Cooper, Corden and Rajapatirana (1993) for details.

One way to capture the differences in trade policy responses to current account problems during the first three periods and the fourth period is by running separate probit regressions for the two periods 1965-83 and 1984-94. These results are shown in equations 3 and 4.

1965-83: $TI_t = -0.404 - 0.136\ CA_{t-1}^*$ (3)

 (-1.21) (-1.84)

 $N = 39\ LL = -24.93$

1984-94: $TI_t = -1.525^{***} + 0.068CA_{t-1}$ (4)

 (-3.02) (0.35)

 $N = 21\ LL = -3.79$

These results show that the probit regressions for the two periods 1965-83 and 1984-94 are significantly different. While the coefficient for the lagged current account balance, (CA_{t-1}), is highly significant for the period 1965-83, it is not so for the period 1984-94. This points to significant differences in the response of trade policy to current account balances between these two periods. In other words, while trade tightening episodes were associated with current account deficits in the 1965-83 period, there was no such relationship in the 1984-94 period.[10]

The trade policy changes associated with the *new liberalization* can also be described as *regime changes*. For this sample of six countries, there were five such regime changes-- Argentina (1991), Brazil (1990), Chile (1974), Colombia (1991), and Mexico (1985)--and they consisted of substantial trade liberalizations. The defining feature of these was that following such a trade regime change there was no recourse to trade policies for macroeconomic purposes.[11]

For illustrative purposes, consider the first case of a regime change, that of Chile in 1974. Before 1974, Chile had a highly restrictive trade regime with over five thousand tariff positions,

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[10] This relationship was also confirmed when this regression was run with an explicit dummy variable for the year effect. In the regression, the intercepts for the two time periods 1965-83 and 1984-94 turned out to be significantly different.

[11] Argentina may be considered a minor exception in introducing customs fees in 1992 that could be interpreted as a trade policy measure given that the nominal exchange rate remained fixed.

63 percent of which were subject to *QRs*. Some two hundred of these positions were completely banned while nearly two thousand were subject to a prohibitive ninety-day advance deposit requirement. Between 1974 and 1976, all *QRs*, except six minor items, were abolished. Tariff rates which, at up to 750 percent, had been very high were reduced in three stages to a uniform 10 percent by 1979--except for automobiles and other vehicles. Tariffs were increased in 1983 and reduced again in 1988, but the entire fourth period was one of openness.

While the balance of payments crisis created the shock environment in which trade liberalization and other radical policy changes became possible, there was also an intellectual shift in the 1980s toward outward-oriented policies because of the new research that emphasized their beneficial impact compared to inward-oriented policies. Furthermore, the recommendations and conditionalities of the international financial institutions also played a decidedly major role. Countries with balance of payments problems needed the support of these institutions, and their support was only forthcoming if some credible steps toward liberalization were taken. A worldwide ideological pro-market trend brought on by the success of East Asia and the patent failures of state-centered development strategies elsewhere made the intellectual case for liberalization that much easier. These countries felt that there was no other way out of the crises since there were no external funds available after the debt crisis. The deficits could no longer be financed, leaving adjustment as the only choice.

In 1990 and 1991, two of the most protectionist countries, Argentina and Brazil, embarked on liberalization programs. Argentina's measures were quite drastic. The hyperinflation of 1989 and a new reformist government made drastic reforms acceptable. By 1990 Brazil also greatly reduced the coverage of *QRs*. Costa Rica provides a good example of liberalization with support from the international financial institutions. Owing to excessive fiscal expansion for the first time in many years a serious balance of payments problem emerged in 1986. This required support from the international institutions and also emphasized the need for drastic stabilization and adjustment. However, Costa Rica is unique among the six countries for not undertaking a regime change in trade policy.

III. Trade and Exchange Rate Policies

The next issue to consider is the relationship between trade and exchange rate policies. Between 1965 and 1973 when balance of payments problems were rarer they led to trade policy tightening in three countries--Argentina, Colombia and Chile (table 2). All three countries had flexible exchange rates at the time. From 1974 to 1979--the period encompassing the effects of the first oil shock--there were two such cases, Brazil and Costa Rica. The former continued a flexible rate while the latter devalued while tightening trade policies.

In the next period, 1974-79, there was one instance of tightening of trade policies in the context of a flexible exchange rate and this was Brazil. Furthermore, when a truly serious crisis came, as in the third period (1980-83), many countries devalued in real terms as well as tightened trade restrictions. Only Chile confined itself to using the exchange rate instrument with a strong commitment to outward orientation in trade.

On the whole, these episodes indicate that liberalization was always preceded by, or directly associated with, devaluations. There were fifteen liberalizations and all were associated with devaluations or flexible exchange rates (table 2). In the case of flexible rate regimes, real devaluations were brought about by rates of nominal depreciation that exceeded inflation differentials.[12]

The five trade regime changes tell an even more persuasive story. It is inconceivable that substantial liberalizations--and especially "the new liberalization"--would have been possible without some flexibility in exchange rates.

12/ See Edwards (1989).

The hypothesis that trade policy changes and devaluations have been used as substitute instruments for balance-of-payments policy is confirmed by the regression of trade policies on devaluations, shown in equation 5.

$$Dev_t = -0.465^{***} -0.446\ TI_t^{**} \qquad (5)$$
$$(-4.55) \qquad (-2.30)$$
$$N = 168 \qquad LL = -101.80$$

where $Dev = 1$ if there is a step wise nominal devaluation over 10 percent, and $Dev = 0$ otherwise. $TI = 1$ if there is a tightening of trade policies, $TI = 0$ if there is no change of trade policies, and $TI = -1$ if there is a liberalizing of trade policies.

The regression results supports the hypothesis that liberalizing--and not tightening--of trade policies has a greater probability of going together with devaluations of the nominal exchange rate. In other words, trade policy has been used in lieu of devaluation when countries have been reluctant to devalue their currencies in the face of a balance of payments problem.

IV. The Effects of Trade Policy Episodes

The various trade policy measures had important microeconomic and long-term effects that have been studied in detail.[13] The view of most economists and, since the mid-1980s, of most policymakers in these countries is that intervention, especially when it takes the form of quantitative import restrictions and fosters an inward-looking orientation, has had an adverse effect on real incomes and growth.[14] The spread of this belief explains in part the liberalization trend of the 1980s and early 1990s in these countries.

13/ See Bhagwati (1989), Krueger (1978), and Little, Scitovsky, and Scott (1970) for details.

14/ See Edwards (1991) for instance

A. Effects on Current Accounts

The short-term effects of trade policy episodes on outputs, exports, and imports are difficult to measure in a comprehensive way. But these episodes are related to subsequent current account developments as shown in table 3. An important point to remember here is that a trade policy episode never happens on its own. It is often associated with expenditure changes and exchange rate changes. If the current account improves after a tightening episode and if this is associated with a devaluation in which a fiscal contraction has also taken place, then the subsequent current account development is the result of the whole policy package. Furthermore, subsequent exogenous shocks, such as changes in export prices, will affect the result.

In the 1980s and early 1990s, the *new liberalizations* were always associated with real devaluations and often with crisis measures that involved fiscal and monetary contraction. Hence, the reform package did not necessarily worsen the current account. The stabilization and structural adjustment packages involved both real devaluation and liberalization. They also brought with them added financial support from international financial institutions, governments, and eventually, as in the case of Mexico in 1991, from the private sector. Continued, and possibly greater, current account deficits were thus made possible. In the final analysis, a country can only sustain a current account that can be financed. It is the availability of finance-- including financing obtained through rescheduling--that will determine the current account position. If sufficient financing is not available, trade restrictions, exchange rate adjustment, and expenditure reductions will have to be used to improve the current account. In practice, this is the context in which trade policies come to be used as surrogates for macroeconomic policies.

To summarize, the evidence in table 3 shows that on average the current accounts worsened marginally following trade liberalization and improved marginally following trade tightening. Improvements following tightenings did not last beyond a year. It is therefore not surprising that the extent of the needed adjustment increased over time. This is another reason why the liberalizations were taking place in the late 1980s and the early 1990s. Also by 1990,

new capital had begun to flow to these countries that prevented further deterioration in balance of payments positions.

Table 4 presents the results of the panel data regressions of the current account balance for the sample countries. The independent variables are the real exchange rate, fiscal balance as a share of GDP, OECD growth rate, the terms of trade and trade policy changes. As shown in the table, all the variables emerge statistically significant and with the expected signs. The results suggest that, a one percent drop in last year's output of the OECD countries will imply a deterioration of the current account by roughly half a percent.

Regressions II to VI also include the trade policy variable (TI).[15] These regressions show that trade policies have no effect on current account in the presence of other variables like real exchange rate, fiscal balance, GDP growth of OECD countries, and terms of trade. These results also imply that current account improvements following tightenings do not last for more than three years.

B. Effects on Fiscal Balances

A common assumption is that a reduction in import tariffs and export subsidies would reduce fiscal revenues while an increase would raise revenues. By extension, while trade liberalization is expected to produce lower trade tax revenues, tightenings should raise trade tax revenues; a further assumption here is that tariffs and subsidies are the only or the more dominant trade instruments. However, the dynamic (growth) effects of trade policy episodes are ignored here.

The principal method these countries used to tighten and liberalize trade policies was to vary QRs. Thus, a trade tightening based on an increase in QR coverage--at constant tariffs and

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[15]/ $TI = 1$ if there is a tightening of trade policies, $TI = 0$ if there is no change of trade policies, and $TI = -1$ if there is a liberalizing of trade polici s.

subsidy rates--would lead to a decline in trade tax revenues. Conversely, a liberalization would raise revenues. These effects could be stronger or weaker depending on growth effects, devaluations, *QR* coverage, and of course, the initial conditions and the relevant elasticity of import and export demands.

In practice, trade policy liberalizations were followed by reduced trade tax revenues in some instances and increased revenues in others. Similarly, tightening trade policies raised trade tax revenues in some instances and reduced them in others (table 5). The country experiences suggest that both kinds of episodes may be followed by increases in trade tax revenues. Trade liberalization might be expected to increase trade tax revenues for several reasons. First, as *QRs* are reduced more is imported, even at lower tariffs and higher export subsidy rates, and trade tax revenues could increase. Second, since devaluations usually accompany liberalizations the valuation basis of exports and imports rises. This leads to higher trade tax revenues even at the same tax and subsidy rates. Also, since most trade liberalizations take place with some balance of payments support, the increase in imports especially designed to alleviate import starvation situations also leads to increased trade tax revenues.

Since the trade tax responses reviewed in table 5 are for over an interval of only two years following the trade policy episodes, they may in fact have a downward bias since export supply responds more slowly to trade liberalizations than imports. Trade tax revenues are likely to go up because of export growth over time.

In short, it is impossible to predict the extent, and indeed the direction of the change in trade tax revenues resulting from trade policy changes and therefore, the impact of these episodes on the fiscal balance. This is the main conclusion arising from the inquiry into the relationship between trade policy episodes and the fiscal effects for these six countries.[16]

16/ See also Nogues and Gulati (1992) and Pritchett and Sethi (1994). In addition, when trade tax revenues were regressed on trade policy episodes, th trade policy term turned out to be insignificant.

C. Effects on Imports and Outputs

Import restrictions are widely thought to increase domestic output by protecting import-competing production and diverting domestic spending away from imports toward domestically produced goods and services. This is the demand side effect of trade tightening and its disadvantage in relation to devaluation is that it only fosters import-competing production, and not exports. On the other hand, there is the supply-side import starvation effect that results in decline in output in the wake of trade tightenings.

Of the eleven trade tightenings, import growth was negative within two years in six cases (table 6). In the other five cases, a few fortuitous circumstances raised imports despite the tightening. Thus, although Colombia tightened trade policies in 1967, imports increased in the 1967-69 period because of improved terms of trade. This was also the case of Brazil in 1988 in response to a rather mild trade tightening episode.[17]

The import-starvation phenomenon arises from stringent import restrictions that are associated with *QR* regimes. The *QR* regime robs the country of essential inputs and spare parts to run factories or maintain crop yields. This obviously has an adverse effect on output. Although direct evidence of import starvation is rare there is adequate anecdotal material to suggest that the phenomenon is real. The evidence presented in table 7 shows that output growth was negative within two years for four of the eleven trade tightening episodes.[18]

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[17] In addition, when import growth was regressed on trade policy episode with a dummy variable of 1 for trade tightening and 0 for trade liberalization, the trade policy term turned out to be negative and significant. In other words, trade tightenings had a negative effect on import growth, while trade liberalizations had a positive effect. This is consistent with the notion that trade tightening is done by moving items from a free list to a QR list, so that trade tightenings reduce imports directly.

[18] In addition, when output growth was regressed on trade policy episodes with a dummy variable of 1 for trade tightening and 0 for trade liberalization, the trade policy term turned out to be negative and significant. In other words, trade tightenings had a negative effect on output growth, while trade liberalizations had a positive effect. This evidence together with the evidence from imports(foot note # 17) implies that trade tightening reduces imports, and has an adverse effect on output gr' wth.

Of course, domestic output and imports could also decline simultaneously because of a contraction of aggregate demand and in crises situations this has clearly been a factor. But in many cases, output has declined because of tighter import restrictions rather than because of a decline in the demand for output.

D. Effects on Manufactured Exports

The response of exports in general and manufactured exports in particular to trade policy episodes is expected to be slower than the response of imports, since production for exports takes time while imports respond almost immediately. Trade policy could influence manufactured exports in at least two ways: (i) trade policies change the regime of incentives facing producers and exporters and alter the profitability of tradables vis-a-vis non-tradables, for instance through changes in real exchange rates;[19] (ii) trade policies bring about changes in the availability of imports that may be critical to the export production of manufactures.

In practice, this latter effect is likely to be more important than the former effect. Therefore, the impact of trade tightenings on manufactured exports is likely to work through the effect on imports and the role of imported inputs in export production. Policies of trade tightenings usually do not influence exports directly. It is not often that trade tightening policies restrain exports, unless it is in the form of withdrawal of some existing export incentives. Additionally, analysis of trade policies in these six countries suggest that trade policy changes in most cases were brought about by changes in the QR regime--specifically by adding or removing items from the QR list. Also in some cases, trade policy tightenings have been accompanied by raising export incentives.

Of the total eleven trade tightening episodes, there were four instances where trade tightenings led to declines in manufactured exports in the two years following changes in trade policies (table 8). In the other eleven cases, manufactured exports increased following trade

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19/ Equation 5 in fact shows that trac ` liberalizations are associated with devaluations.

tightenings. Of the fifteen trade liberalizing episodes, exports increased in eleven cases, and declined in the other four cases. This evidence seems to suggest that overall, trade policy changes have had a positive influence on manufactured exports.[20]

Regression results presented in table 9 suggest that trade tightenings do have a negative impact upon both total and manufactured exports, though this evidence does not hold up when the sample is expanded from 26 to 60 trade policy episodes by considering the duration of each trade policy episode. The results also suggest that, manufactured exports respond positively to trade liberalizations. One reason for this is that liberalizations are accompanied by devaluations which improve the incentives for exports--including manufactures; the other factor is the greater availability of imported inputs following liberalization that are usually more important for manufactured exports compared to other exports.

Table 9 also presents the results of the regressions for total and manufactured exports separately. Interestingly, the regression results are quite different for the two samples of 26 and 60 trade policy episodes. As noted before, trade tightenings have a negative impact on total exports as well as manufactured exports in the case of the 26 trade policy episodes; they have no effect when the sample size is expanded to 60 episodes. One way to explain the negative relationship between trade tightenings and manufactured exports is to note that since trade tightening is done primarily by way of moving items from a free list to a QR list, it starves the industry of critical imported inputs needed for export production and hence have a negative impact on exports. Therefore, this result can also be construed as providing indirect support for the import starvation hypothesis presented elsewhere in the paper. More generally, the trade-tightening episodes could be viewed as increasing the anti-export bias of the trade regimes in these countries. Also, the influence of import growth on exports turns out to be negative in these regressions. This negative role of imports implies that the imports have been primarily

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20/ However, when growth in manufactured exports was regressed on trade policy episodes with a dummy variable of 1 for trade tightening and 0 for trade liberalization, the trade policy term turned out to be negative and significant. In other words, trade tightenings had a negative effect on manufactured exports, while trade liberalizations had a positive effect.

used in the production of import-substitutes for the domestic market rather than exports. This result is therefore consistent with the earlier evidence regarding the overall inward-orientation of these economies. The proxy for external demand--OECD GDP--turns out to be insignificant in these regressions. This implies that the constraints on exports were primarily due to supply rather than demand factors. The proxy for domestic demand--GDP--is significant in the total exports regression only; this effect is positive. This may simply reflect the fact, ceteris paribus, exports and GDP tend to move in the same direction, given the GNP (national income) identity. The other implication of this result could be that exports are not a residual activity in these economies. If exports were indeed a residual activity, the effect of domestic demand on exports would be negative, since higher domestic demand would induce firms to shift from exports to the domestic market. [21] Finally, the real effective exchange rate variable is not significant in these regressions involving 26 trade policy episodes.

When the sample size is expanded from 26 to 60 trade policy episodes by considering the duration of each policy episode, the results are somewhat different. Based on adjusted r^2, while there is a deterioration in the fit for total exports, there is a marginal improvement for manufactured exports, when the sample size is expanded from 26 to 60. The trade policy variable and the import growth variable now turn out to be insignificant. In other words, trade policies have no effect on exports--total as well as manufactured--in the presence of other variables like real exchange rate, imports, OECD GDP, and domestic (manufacturing) GDP. This result with regard to trade policy in the expanded sample of 60 trade policy episodes also implies that it is more meaningful to analyze the impact of trade policies by considering the episodes as a continuous process rather than as discrete episodes. The real effective exchange rate term is negative and significant for both total exports and manufactured exports. This is consistent with the expectation that exchange rate devaluations boost exports.[22] While the external demand term is insignificant in the case of total exports, it is positive and significant

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[21] The implicit assumption here is that what is produced for domestic and export market are similar goods.

[22] This is also consistent with the results of equation 5 which shows that trade liberalizations are associated with devaluations.

in the case of manufactured exports. This implies that demand factors do play a role in determining manufactured exports from these countries. Finally, while the influence of domestic demand is positive for total exports, it turns out to be negative for manufactured exports. The negative role of domestic demand with regard to manufactured exports could be indicative of the residual nature of exports in the case of manufactured goods. In other words, both supply and demand factors are important ingredients of manufactured exports when the duration of each policy episode is taken into account.

V. Conclusions

Changes in trade policy--especially in quantitative import restrictions--have played an important role in the macroeconomic adjustment in all six countries. For long periods, trade policy tightenings and occasional liberalizations were the main instruments of balance of payments policy. Most tightenings were preceded by a deterioration in the current account. In several cases tight import restrictions had adverse effects on output and, hence, on investment and growth. Since changes in trade policies were usually part of a policy package, it is difficult to isolate the effects of the episodes themselves. Sometimes they have been followed by current account improvements and other times by deteriorations.

The six countries had various episodes of trade liberalization, particularly in the 1980s. There have been five *regime changes* where generalized trade liberalization by a country brought about a break with the past use of *QRs* for balance of payments purposes and trade became much freer. The 1980s and early 1990s brought *a new liberalization* wherein balance of payments problems triggered liberalization rather than tightening.

The tightening of trade restrictions alone will not suffice to improve the current account. This is confirmed by the experience of the six countries. In the final analysis, an improvement in the current account requires an increase in national savings or a fall in investment, or both,

and a tightening would not necessarily bring this about. Where tighter import restrictions shift demand toward home-produced goods and output is initially demand-constrained, higher incomes would indeed result and then savings would normally increase, at least in the short run. At the same time, in an environment of import starvation, as was present in Argentina (1980-83) and Chile (1971-73), incomes might fall as a result of tighter restrictions, and so savings might actually decline. A fall in imports would then be more than matched by a decline in exports.

The case for tighter import restrictions or devaluation when the current account has to be improved is that both measures divert demand away from imports toward home-produced goods and increase the profitability of import-competing industries. In addition, devaluation increases the profitability of exports. Thus, these policy instruments compensate for the reduction in demand for home-produced goods resulting from the decline in real expenditures that is usually necessary to bring about a current account improvement. They switch demand toward nontraded goods and output toward traded goods. This simple generalization is subject to qualifications. In particular, import restrictions may reduce the competitiveness of export industries when they use imported or import-competing inputs. Leaving this aside, there is a case for switching policies even though a reduction in real expenditures (absorption) is--in the absence of initial excess capacity--the essential requirement for a current account improvement. Yet, the fundamental question is whether to use import restrictions or devaluation as the switching device. This choice raises issues discussed at length in the literature. Here the consensus appears to be that import restrictions should be avoided, except perhaps temporary restrictions in extreme situations. The current recourse to such measures by Argentina, Brazil, and Mexico should be viewed in this perspective.

Three policy conclusions emerge from the analysis. The first is the confirmation of the consensus view that import restrictions cannot solve current account problems, as seen from the experience of the six countries. Import restrictions, even when they lead to a short term improvement, cannot be relied upon to restore macroeconomic balance. The imbalance will not go away but could be exacerbated when exports continue to be adversely effected and the

phenomenon of import starvation introduces additional costs to the economy arising from the attempt to cure the original problem.

Second, trade liberalization requires real devaluation either at the same time or beforehand. Real devaluation is brought about by nominal devaluation. The evidence for such a connection between exchange rate policy and trade policy is clear. A flexible exchange rate regime does not ensure that trade policy tightening will be avoided. This is apparent from the policies of Argentina, Brazil, Chile, and Colombia in the first period (1965-73) and those of Argentina in the third period (1980-83); but a fixed rate regime that rules out the possibility of devaluation makes significant liberalization improbable or even impossible. If a country has significant import restrictions over a range of goods (or high tariffs), and desires to liberalize eventually, then the government must not make a fixed exchange rate commitment. The *nominal anchor* argument can provide some justification for a fixed exchange rate policy, but given that continued import restrictions are not desirable, such a policy should only be implemented--if at all--after a large devaluation and the required liberalization have taken place as seen from the cases of Argentina and Mexico.

Finally, with regard to manufactured exports, their growth helps to maintain trade reforms and release the economy from foreign exchange constraints; also, manufactured exports respond more to trade liberalizations than tightenings because liberalizations reduce the bias against exports.

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Table 1: Trade Policy Episodes by Analytical Periods and Exchange Rate Regimes

Country	1965--73		1974--79	1980--83		1984-94	
Argentina	(-) 1967	(+) 1971--73	(-) 1976	(+) 1982		(-) 1989	(-)ᵃ 1991
				devaluation		flexible rate	fixed rate
	flexible		flexible rate	flexible rate			
Brazil	(-) 1967		(+) 1973--74	(-) 1979--80	(+) 1981--84	(+) 1988	(-)ᵃ 1990
	flexible rate		flexible rate	flexible rate		flexible rate	flexible rate
Chile	(-) 1968--70	(+) 1971--73	(-)ᵃ 1974--79				
	flexible rate		devaluation	devaluation			
			flexible rate until 1974	flexible rate		Adopted flexible rate	
Colombia	(+) 1967			(+) 1982		(-) 1984--87	(-)ᵃ 1991
	flexible rate						flexible rate
	crawling peg			crawling peg		1985 crawling peg	
Costa Rica			(+) 1974	(+) 1982--84		(-) 1986--88	(-) 1991
				devaluation/1981			
			devaluation	unified rate/1983		adopted flexible rate	
Mexico	fixed rate		(-) 1977--79	(+) 1980--82		(-)ᵃ 1985--90	
			devaluation/1976	devaluation/1982		devaluation/1985	
			fixed rate thereafter			devaluation/1986	
						fixed rate/1988	
Totals	6 episodes	+3 -3	5 episodes +2 -3	6 episodes	+5 -1	9 episodes	+1 -8

Note: a. Indicates trade regime change defined as the case where there was no recourse to trade policies for macroeconomic purposes following this change.
b. (+) indicates trade tightening and (-) indicates trade liberalization.

Source: Papageorgiou, Michaely, and Choksi (1991); Little, Cooper, Corden and Rajapatirana (1993); Alam and Rajapatirana (1993)

Table 2: Trade Policy Episodes, Trade Regime Changes and the Exchange Rate, 1965--92

	1965--73	1974--79	1980--83	1984--94	1965--94
Trade policy tightening	3	2	5	1	11
Exchange rate devalued or flexible during episode	3	2	4	1	10
Exchange rate fixed during episode	0	0	1	0	13
Trade policy liberalization	3	3	1	8	15
Exchange rate devalued or flexible during episode	3	3[a]	1	8	15
Exchange rate fixed during episode	0	0	0	0[b]	0
No changes in trade policy	6	5	6	11	26

Note: a. Mexico had devalued in 1976 just before the liberalization in 1977.

b. Argentina and Mexico had devalued significantly just before the liberalization.

Source: World Bank, Papageorgiou, Michaely and Choksi (1991), (Table 1) References.

Table 3: Trade Policies and Ratio of Current Account Balance (CAB) to GDP (percent)

Tightening Episodes				Liberalizing Episodes			
Country	Period	(CAB/GDP) in Year of Policy	Average (CAB/GDP) After Two Years	Country	Period	(CAB/GDP) in Year of Policy	Average (CAB/GDP) After Two Years
Argentina	1971-73	-1.0	0.0	Argentina	1967	0.5	-0.5
Argentina	1980-83	-3.0	-2.0	Argentina	1976	1.0	2.5
Brazil	1973-74	-3.0	-6.5	Argentina	1989	-2.0	1.5
Brazi!	1981-84	-5.0	-4.5	Argentina	1991	0.0	-3.0
Brazil	1988	1.0	-0.5	Brazil	1967	-1.1	-1.4
Chile	1971-73	-2.0	-3.5	Brazil	1979-80	-5.0	-5.5
Colombia	1967	0.0	-3.4	Brazil	1990	-1.0	1.0
Colombia	1982	-8.0	-6.0	Chile	1968-70	-2.0	0.0
Costa Rica	1974	-16.0	-9.5	Chile	1974-79	-3.0	-3.0
Costa Rica	1982-84	-11.0	-8.5	Colombia	1984-87	-4.0	-2.0
Mexico	1980-82	-6.0	-5.5	Colombia	1991	6.0	-1.0
Average		-4.9	-4.5	Costa Rica	1986-88	-4.0	-9.5
				Costa Rica	1991	-7.0	-7.0
				Mexico	1977-79	-1.0	-1.5
				Mexico	1985-90	0.0	1.0
				Average		-1.5	-1.9

Notes: Figures in the table show the (CAB/GDP) ratio in the year of the trade regime change and the average (CAB/GDP) ratio two years after the policy change.

Source: World Bank data.

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Table 4: Current Account and Trade Policies: Panel Data Regressions

	Real Exchange Rate	Fiscal Balance/GDP	GDP Growth OECD	Terms of Trade	Trade Policy					Adjusted R²	DF
	t	t-1	t-1	t	t	t-1	t-2	t-3	t-4		
I	-0.036^a (-3.81)	0.219^a (2.91)	0.415^b (2.32)	0.034^a (3.68)	-	-	-	-	-	0.149	161
II	-0.034^a (-3.56)	0.207^a (2.73)	0.396^b (2.21)	0.033^a (3.58)	-0.728 (-1.53)	-	-	-	-	0.156	161
III	-0.036^a (-3.73)	0.215^a (2.82)	0.412^b (2.29)	0.034^a (3.65)	-	-0.269 (-0.56)	-	-	-	0.145	161
IV	-0.036^a (-3.77)	0.223^a (2.93)	0.414^b (2.31)	0.033^a (3.62)	-	-	0.209 (0.43)	-	-	0.144	161
V	-0.034^a (-3.56)	0.224^a (2.97)	0.398^b (2.22)	0.032^a (3.51)	-	-	-	0.635 (1.27)	-	0.152	161
VI	-0.036^a (-3.70)	0.222^a (2.94)	0.395^b (2.18)	0.033^a (3.64)	-	-	-	-	0.384 (0.75)	0.146	161

Note: Figures in parentheses are t statistics. DF are the degrees of freedom.
  a. Indicates statistically significant at 1 percent level.
  b. Indicates statistically significant at 5 percent level.

Source: Author's analyses.

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Table 5: Trade Policies and Trade Tax Revenues
(percent)

| Country | Tightening Episodes | | Country | Liberalizing Episodes | |
	Period	Percent Change		Period	Percent Change
Argentina	1982	24	Argentina	1991	N.A.
Brazil	1981--84	64	Brazil	1979--80	-50
Colombia	1982	-15	Brazil	1990	N.A.
Costa Rica	1974	-8	Chile	1974-79	2
Costa Rica	1982--84	1	Colombia	1984-87	39
Mexico	1980--82	15	Colombia	1991	N.A.
			Costa Rica	1986-88	41
			Costa Rica	1992	N.A.
Average		14	Average		13

Note: Figure in the table show annual average growth of trade tax revenues for the two years following the year in which the trade regime changed.

N.A. - Not Available

Source: World Bank data.

Table 6: Trade Policies and Import Growth (%)

Tightening Episodes			Liberalizing Episodes		
Country	Period	Percent	Country	Period	Percent
Argentina	1971-73	-5.0	Argentina	1967	13.5
Argentina	1980-83	-26.1	Argentina	1976	2.9
Brazil	1973-74	13.2	Argentina	1989	45.9
Brazil	1981-84	-9.9	Argentina	1991	75.8
Brazil	1988	21.2	Brazil	1967	11.1
Chile	1971-73	-15.2	Brazil	1979-80	-5.4
Colombia	1967	14.6	Brazil	1990	3.1
Colombia	1982	-7.6	Chile	1968-70	8.6
Costa Rica	1974	2.0	Chile	1974-79	-7.2
Costa Rica	1982-84	9.3	Colombia	1984-87	-10.0
Mexico	1980-82	-5.2	Colombia	1991	50.3
Average		-0.8	Costa Rica	1986-88	2.4
			Costa Rica	1991	7.6
			Mexico	1977-79	30.5
			Mexico	1985-90	-20.2
			Average		13.9

Notes: Figures in the table show annual average growth in merchandise imports for the two years following the year in which the trade regime changed.

Source: World Bank data.

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Table 7: Trade Policies and Output Growth (%)

Tightening Episodes			Liberalizing Episodes		
Country	Period	Percent	Country	Period	Percent
Argentina	1971-73	2.4	Argentina	1967	7.1
Argentina	1980-83	-4.4	Argentina	1976	1.3
Brazil	1973-74	7.1	Argentina	1989	4.5
Brazil	1981-84	-1.4	Argentina	1991	7.4
Brazil	1988	-3.1	Brazil	1967	10.6
Chile	1971-73	-2.9	Brazil	1979-80	2.4
Colombia	1967	6.5	Brazil	1990	0.0
Colombia	1982	2.5	Chile	1968-70	2.8
Costa Rica	1974	3.8	Chile	1974-79	-4.0
Costa Rica	1982-84	5.5	Colombia	1984-87	4.5
Mexico	1980-82	4.1	Colombia	1991	4.4
Average		1.8	Costa Rica	1986-88	4.1
			Costa Rica	1991	6.9
			Mexico	1977-79	8.8
			Mexico	1985-90	-0.8
			Average		4.0

Notes: Figures in the table show annual average growth in GDP for the two years following the year in which the trade regime changed.

Source: World Bank data.

Table 8: Trade Policies and Growth of Manufactured Exports (%)

Tightening Episodes			Liberalizing Episodes		
Country	Period	Percent	Country	Period	Percent
Argentina	1971-73	31.4	Argentina	1967	26.2
Argentina	1980-83	7.0	Argentina	1976	26.0
Brazil	1973-74	24.0	Argentina	1989	-11.6
Brazil	1981-84	4.4	Argentina	1991	-4.9
Brazil	1988	-2.5	Brazil	1967	11.6
Chile	1971-73	-26.3	Brazil	1979-80	24.8
Colombia	1967	15.4	Brazil	1990	13.6
Colombia	1982	-9.0	Chile	1968-70	23.7
Costa Rica	1974	6.3	Chile	1974-79	79.1
Costa Rica	1982-84	-3.9	Colombia	1984-87	10.2
Mexico	1980-82	4.1	Colombia	1991	-9.1
Average		4.6	Costa Rica	1986-88	13.3
			Costa Rica	1991	-4.2
			Mexico	1977-79	21.2
			Mexico	1985-90	24.0
			Average		16.3

Notes: Figures in the table show annual average growth in manufactured exports for the two years following the year in which the trade regime changed.

Source: World Bank data.

Table 9: Export Regressions

	Total Exports		Manufactured Exports	
	NT=26	NT=60	NT=26	NT=60
Real effective exchange rate	0.168 (0.74)	-0.204 (-1.39)	0.338 (0.76)	-0.449 (-1.92)
Trade policy	-8.998 (-2.06)	-4.284 (-0.95)	-18.845 (-2.19)	2.205 (0.30)
Imports	-0.184 (-1.27)	0.027 (0.20)	-0.364 (-1.29)	0.124 (0.62)
OECD GDP	-1.401 (-0.99)	-0.775 (-0.55)	0.582 (0.20)	5.403 (2.29)
Total GDP	1.160 (1.95)	0.708 (1.29)		
Manufacturing GDP			-0.779 (-0.93)	-1.434 (-2.53)
Adjusted R^2	0.146	0.048	0.102	0.107

Notes: For trade policy, a dummy variable, TI, is used; TI=1 for trade tightening policies and TI=0 for trade liberalization policies. All other variables are expressed in terms of growth rates.

Source: Author's analyses.

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