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TRADE LIBERALISATION AND THE BALANCE OF PAYMENTS IN SELECTED DEVELOPING COUNTRIES

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Abstract

This paper analyses the impact of the reduction of tariff and non-tariff barriers on the trade balance and the current account of the balance of payments of 22 selected developing countries from Africa, Latin America, East Asia, and South Asia. The study presents estimates of dynamic panel data models and time-series/cross-section models. The main findings are that trade liberalisation has worsened the balance of trade and the balance of payments, because imports have increased more rapidly than exports. However, the impact of liberalisation and other variables varies according to region and the nature of the trade policy regime.

JEL Classification: C21, C22, C23, F13, F14, F32.

Keywords: trade liberalisation, balance of payments, dynamic panel data, time series/cross section, developing countries.

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NON-TECHNICAL SUMMARY

Trade liberalisation is assumed to improve a country's performance by promoting domestic economic efficiency and encouraging trade flows between nations. However, according to economic theory, the effect of tariff reductions on the trade balance and balance of payments is ambiguous. The limited empirical evidence that exists suggests that import flows respond more rapidly than exports following trade liberalisation, causing 'temporary' trade imbalances. This paper extends this existing evidence by examining the effect of liberalisation on the trade balance and the balance of payments for a geographically diverse sample of 22 developing countries over the period 1972 to 1998.

The impact of trade liberalisation is measured by changes in duties on exports and imports, and by an indicator for the years in which significant trade liberalisation took place. Differences between countries in Africa, Latin America, East Asia and South Asia are explored, as is the importance of the degree of protection afforded by the trade regime.

The central finding is that trade liberalisation has a direct effect which worsens the trade balance by over one percent of GDP, and also an indirect effect operating through its deleterious impact on output growth which also serves to weaken the trade balance. While all regions have suffered deterioration in their trade balances, Africa has been particularly severely affected. In addition, the negative impact of liberalisation is greater in countries which have liberalised from a more highly protected regime.

Many countries face serious balance of payments problems which constrain their growth. The negative impact of trade liberalisation on the trade balance and on the balance of payments, identified in this paper thus has important policy implications for the sequencing of liberalisation to achieve a better balance between the growth of exports and imports in the liberalisation process.

TRADE LIBERALISATION AND THE BALANCE OF PAYMENTS IN SELECTED DEVELOPING COUNTRIES

1. Introduction

Developing countries have experienced extensive and rapid trade liberalisation in recent years, undertaken both in the context of multilateral trade negotiations, and as part of the conditionality linked to structural adjustment and stabilisation programmes agreed with the International Monetary Fund and the World Bank.

Following trade liberalisation, Krueger (1978) suggests that there is evidence that import flows respond more rapidly than exports, causing 'temporary' trade imbalances[1]. However, up to now there has been no in-depth systematic empirical study of the impact of trade liberalisation on the balance of trade and the balance of payments taking a large sample of countries.

The aim of this paper is to examine the balance of payments consequences of trade liberalisation in a sample of 22 developing countries for the period 1972-1998. The paper focuses on the impact of trade liberalisation on the trade and current account balances of the balance of payments. The main question addressed is whether there has been an improvement or deterioration in these accounts following trade reform programmes. The liberalisation episodes are measured in two ways. First, an indicator of the duties applied to exports and imports is used; second, a dummy variable is applied to the year identified as the main

[1] Also, Khan and Zhaler's 1985 study for some southern Latin American countries suggests that external shocks and inappropriate domestic policies played a significant role in undermining the trade liberalisation attempts. The authors show that the elimination of trade barriers and capital controls entail certain costs (i.e. rise in real interest rates, decline in output and employment, increase in foreign debt and a worsening of the current account), which can be reduced by an appropriate mixture of exchange rate, wage rate and demand management policies.

liberalisation episode, based on the criteria published by the World Trade Organisation Trade Policy Reviews, the World Bank and International Monetary Fund country and region specific studies (and other sources).

The study also examines differences in the performance across Africa, Latin America, East Asia and South Asia, and the countries are also classified according to the degree of protection of the trade regime. This is the first study to evaluate this matter systematically, employing different estimation procedures, including dynamic panel data analysis (using fixed effects and generalised methods of moments – GMM).

The rest of the paper is presented as follows. The analysis of the trade performance and liberalisation in the different regions is introduced in Section 2. The framework for the empirical analysis and the results are presented in Section 3. Section 4 provides the concluding remarks.

2. Trade Performance and Liberalisation

Foreign exchange shortages and balance of payments constraints have been a major consideration in the design of trade policies in developing countries. In many circumstances, highly protected trade regimes (in this case, characterised by tariffs as well as the wider use of other non-tariff instruments) have been established as a response to serious balance of payments difficulties (i.e. current account deficits), and as a mean of preserving macroeconomic stability and economic growth.

Most of the countries considered in this study reformed their trade regimes in the mid-1980s (Chile in the mid-1970s), easing trade policy controls (predominantly over imports) mostly in periods of trade surplus[2], and also subsequently opened their capital accounts.

In the specific case of export policies, there are a number of restrictions or anti-export biases (disincentives to exports) that have been liberalised or lifted. The elimination of export taxes, together with tariff reforms, was started in all of the countries to reduce the anti-export bias prevailing as a result of import substitution policies. As a result, the following policies were implemented. Firstly, the reduction or elimination of exports duties, and administrative and other non-quantitative barriers. Secondly, tax concessions and duty drawback schemes were introduced. Thirdly, reduction and/or elimination of administrative barriers, such as the simplification of export procedures and the lifting of export licensing. The allowance of foreign competition, mainly in the form of liberalisation of FDI regulations and tax incentives for foreign firms (multinational corporations, MNCs), was another feature of policies aimed at eliminating the anti-export bias. Fourthly, foreign exchange retention schemes (ERSs) for exporters were sometimes introduced under very restrictive import control regimes. The ERSs imply an incentive to exporters, given that they could retain a portion of their foreign exchange earnings to pay for imported inputs. Finally, the establishment of Export Development Agencies, and Acts for export promotion and financing purposes also acted as an export incentive instrument.

In relation to import liberalisation, substantial reforms and reductions of tariffs have been achieved. However, the same target has not been achieved as regards non-tariff barriers.

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[2] By contrast, as UNCTAD (1999) shows, the latest reforms in Latin American and African countries have diverged radically from this pattern, undertaking “big bang” types of liberalisation, and maintaining them despite increasing trade deficits. According to UNCTAD, only a small number of countries in East Asia followed a selective and gradual approach to trade liberalisation, customising the process of trade openness to the level of economic development and macroeconomic performance, and the institutional capacity existing.

Amongst the main non-tariff barriers affecting imports can be mentioned: import policy barriers (the prohibition or restriction of imports maintained through import licensing requirements); standards and administrative requirements, applied to ensure the quality of goods seeking access to domestic markets (which countries use as a protectionist measure); anti-dumping and Countervailing Measures[3]; government procurement; barriers to trade in the service sector; lack of adequate protection of intellectual property rights; etc.

Also, exchange rate policy reforms were an integral part of the liberalisation episodes. More specifically, in countries with extensive foreign exchange distortions the reforms included the unification of the exchange rate regime and the removal (or relaxation) of exchange controls.

In relation to the previous discussion, descriptive statistics will now be set out, before doing detailed statistical analysis holding other variables constant. Table 1 shows the behaviour of trade taxes and the trade balance before and after liberalisation, and the countries are classified according to the overall performance of the trade balance (averages of trade balance as a share of GDP), that is, whether it improved or deteriorated after liberalisation.

In almost half of the sample, there was a deterioration of the trade balance ranging from 0.3 to 13 percent of GDP, following the reduction in trade taxes, mainly on imports. Although in some cases there were improvements in the trade account, the deficits remained.

Table 2 provides figures on the performance of exports, imports and real exchange rates in the developing countries comprising the present study. A distinction is made between the growth of the variables in the first two years after liberalisation, and during the succeeding period covered by the study (that is, until 1998).

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[3] These barriers are used, and permitted by the WTO under special circumstances, to protect domestic industry from imperfect competition arising from dumped or subsidised imports.

In the first two years following trade liberalisation, imports grew faster than exports in all the countries except Cameroon, Morocco, Zambia, Dominican Republic, Ecuador and Indonesia, and the real exchange rate depreciated in nearly all countries during the same period. However, the effect of this devaluation in improving competitiveness and raising export growth is not clear in all the cases, and did not always compensate for the negative effect of a higher import growth on the trade balance in this initial post-liberalisation phase.

In the subsequent years, export growth accelerated in half of the countries. In some countries (for instance, Colombia, Mexico, Uruguay, Venezuela, Korea and India) this higher growth was complemented by slower import growth, while in others imports were sustained and continued to grow faster than exports. In Malawi, Morocco, Tunisia, Dominican Republic, Ecuador, Venezuela, Korea, Malaysia, Philippines, Thailand and Pakistan export growth exceeded import growth in the years after liberalisation. Nevertheless, as shown in Table 1, the trade deficit did not always contract after liberalisation, either because the pre-liberalisation deficits were large, or the initial rise of imports was too strong, or exports did not react as much as imports to the lifting of trade restrictions. However, this remains very much an empirical question, and will be addressed in Section 3.

The change in the real exchange rate in this period is somewhat mixed, although in some countries of Latin America, East Asia, and South Asia an appreciation of the exchange rate can be observed. However, it should be noted that because the figures presented correspond to long period averages (up to ten years), and also they embrace regional averages; specific events are not always illustrated by these results. In the case of the appreciation of the real exchange rate observed in some countries/regions following trade liberalisation, for example, the Mexican Peso continued to appreciate only until the crisis of 1994-95, and in the case of Malaysia and Thailand, the appreciation stopped with the collapse of the financial markets of 1997.

Figure 1 shows the trends on the current account and trade balance deficits as a share of GDP, as well as GDP growth in the sample under study. Since the beginning of the 1970s, the developing countries analysed in this study have evidenced current account deficits of between 2 and 10 percent of GDP on average. Specifically, Africa is the region with the highest deficits as a proportion of GDP (around 10 percent), and in the other regions the countries have run deficits averaging 3 percent. This increase in the current account deficits in Africa was driven mainly by the jump in Malawi's deficit (-58.3 percent after the 1991 liberalisation). However, in 1998 this deficit was reduced due to lower import demand following a depreciation of the currency and the performance of the tobacco sector (which is the main export product). Only East Asian countries showed signs of recovery in the late 1990s. This trend was basically driven by the trade balance deficit, and the outflows of foreign capital (e.g. repatriation of profits from FDI and interest payments).

Concentrating on the trade balance, it progressed in the same direction as the current account. East Asia and South Asia show a decline of the trade deficit at the end of the 1990s. On average, the trade deficit fluctuated between 0.2 and 7 percent of GDP.

3. Empirical Framework and Results

3.1 Empirical Modelling

The effect of trade liberalisation on the trade balance and the balance of payments is theoretically ambiguous whatever framework of balance of payments analysis is used. In the partial equilibrium framework of the elasticities approach, the effect will depend on the extent to which import and export duties change and the price elasticities of imports and exports. Measuring the balance of payments in foreign currency, export earnings will increase if the price elasticity of demand is greater than unity, and import payments will increase if the price

elasticity of demand is greater than zero. The elasticities approach is not suitable for the analysis of trade liberalisation that does not involve price changes. In the general equilibrium framework of the absorption approach to the balance of payments, the effect of liberalisation will depend on how real income is affected relative to real absorption. A reduction in export duties will shift expenditure to home produced goods, thereby raising income, but a reduction in import duties does the opposite. Even if real income increases, the balance of payments will improve if the propensity to absorb is greater than unity. Then, there are the direct effects on absorption to consider. If trade liberalisation reduces prices, this will increase real absorption through a real balance effect and money illusion, but will decrease absorption if this is a redistribution of income to the traded goods sector where the propensity to save is high. Finally, in the monetary approach to the balance of payments, the outcome of liberalisation depends on how the real demand for money changes relative to the real supply.

Given this theoretical ambiguity, the impact of liberalisation on the trade balance and the balance of payments become an empirical issue. For instance, Ostry and Rose (1992) gave recognised this in their analysis of tariff changes, and found no statistically significant effect of tariff changes on the real trade balance in their empirical analysis of five different data sets (including one for developing countries).

The impact of liberalisation on trade performance is measured in monetary terms because it is the nominal gap between imports and exports which measures a country's shortage of foreign exchange, and how much countries need to borrow to sustain growth if liberalisation worsens the payments position. The effect of trade liberalisation on the trade balance and the balance of payments is measured by estimating two equations which control for income and relative price changes, and which also include a separate terms of trade variable, given that changes in the price of exports and imports automatically affect the

monetary value of trade flows, independent of liberalisation. With this procedure it is also possible to separate the nominal and real (volume) effects of price changes on trade flows.

In order to investigate precisely the impact of duty reductions and liberalisation on the trade balance (TB) and the current account of the balance of payments (BP), both dependent variables are first normalised to take account of differences in the size of countries. Two normalisation procedures are used. The first is to take the trade balance and current account as a share of GDP. The second is to take the rate of change of both the trade balance and the current account. The equations are derived from standard export and import demand functions in which the growth of exports and imports is a function of income and relative prices (see Thirlwall, 1999). The basic estimating equations are as follows:

$$\frac{TB}{GDP} \text{ and } \frac{d(TB)}{TB} =$$

$$\beta_1 + \beta_2(w) + \beta_3(y) + \beta_4(p) + \beta_5(d_x) + \beta_6(d_m) + \beta_7(TOT) + \beta_8(lib) + \beta_9 y \times lib \quad (1)$$

and,

$$\frac{BP}{GDP} \text{ and } \frac{d(BP)}{BP} =$$

$$\delta_1 + \delta_2(w) + \delta_3(y) + \delta_4(p) + \delta_5(d_x) + \delta_6(d_m) + \delta_7(TOT) + \delta_8(lib) + \delta_9 y \times lib \quad (2)$$

where w is the growth of world income; y is the growth of domestic income; p is the rate of change of the real exchange rate; d_x is export duties as a share of total exports; d_m is import duties as a share of total imports; TOT the nominal ('pure') terms of trade, measured as the ratio of export to import prices; lib is a liberalisation shift dummy, and $y \times lib$ is an interaction (slope) dummy to take account of the impact that liberalisation may have on growth and therefore on the balance of payments. The expected signs of the coefficients are

$\beta_1,\delta_1>0$, $\beta_2,\delta_2<0$, $\beta_3,\delta_3<0$, $\beta_4,\delta_4(?)$[4], $\beta_5,\delta_5<0$, $\beta_6,\delta_6>0$, and $\beta_7,\delta_7>0$. The signs of the *lib* (β_8,δ_8) and $y\times lib(\beta_9,\delta_9)$ are to be determined. The precise data definitions and sources of the variables are presented in the Appendix.

The only previous work in this field is the study by UNCTAD (TDR, 1999), which presents panel data estimates (fixed and random effects) of the impact of liberalisation on trade deficits and growth in sixteen developing and industrialised countries[5]. The study uses the Sachs and Warner (1995) liberalisation shift dummy, which is expected to capture the effects of capital account liberalisation, as well as the impact of import liberalisation. UNCTAD found that a more favourable terms of trade[6] and faster growth in industrial countries improved the trade balance of developing countries, whereas liberalisation worsened it considerably. The study also concludes that faster growth in liberalised economies is associated with greater trade deficits than in non-liberalised economies. Also, increases in the purchasing power of exports continue to improve the trade balance in liberalised economies but by less than before liberalisation.

3.2 Results

The estimation procedures used in this section are dynamic panel data techniques, based on fixed effects (least squares) and generalised methods of moments (GMM), and time-series/cross-section models. The fixed effects (FE) estimator includes a dummy variable to

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[4] In equations without a separate terms of trade variable, the sign of p will depend on whether or not the Marshall-Lerner condition is satisfied. In equations with a separate terms of trade variable, the sign will be negative if there is substitution of foreign for domestic goods.

[5] When the Sacks and Warner index is used as a proxy for liberalisation, the sample is extended to 52 developing countries (27 in Africa, 19 in Latin America and 6 in Asia).

[6] Note that the terms of trade variable used by UNCTAD's study is the value index of exports deflated by the import unit value index; that is, the income terms of trade not the barter terms of trade.

allow for country specific effects that are constant over time. The GMM estimator, which is considered one of the best techniques for estimating dynamic panel data[7], also controls for the endogeneity of the lagged dependent variable, and the potential endogeneity of other explanatory variables (Arellano, 1993; Arellano and Bond, 1998), particularly the rate of growth of real GDP.

In addition, time-series/cross-section models are estimated. These specifications are suitable for panel data characterised by a large number of time series observations and a relatively small number of countries. Given the disaggregated analysis also undertaken in this investigation, i.e. at a regional level and according to the type of policy regime, in which the number of observations is not very large in each group, this is considered the appropriate technique.

3.2.1 Fixed Effects and GMM Estimates

The results of examining the impact of trade liberalisation on the trade balance applying FE and GMM models are presented in Tables 3A to 4B. Both methods of estimation provide very similar results.

Considering first the trade balance as a proportion of GDP resulting from the fixed FE and GMM estimates (Tables 3A and 3B), it can be seen that the effect of all explanatory variables on the trade balance is as expected. Specifically, world income growth has a significant positive effect; domestic income growth has a significant negative effect; the trade balance is negatively related to the real exchange rate (RER) (although the impact is minimal), and the pure terms of trade effect is positive.

A one percentage point reduction of export duties has significantly improved the trade balance by approximately 0.2 percent of GDP, whereas a one percentage point reduction of

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[7] See Nickell (1981); Harris and Mátyás (1986); Judson and Owen (1999).

import duties has deteriorated the trade balance by nearly 0.8 percent of GDP. In addition to export and import duty changes, the process of trade liberalisation *(lib)* seems to have worsened the trade balance by at least a further one percent of GDP. This result is very relevant, when compared with the mean trade balance/GDP ratio for the complete sample, which is –2.76 percent. The negative coefficient on the interaction dummy indicates that liberalisation has deteriorated the trade balance by a further 0.20 to 0.40 percent of GDP through its effect on domestic income growth.

Focusing on Tables 4A and 4B, where the rate of change of the trade balance is taken as the dependent variable, the same conclusions emerge, but the explanatory power and significance of several of the variables are to some extent reduced. World and domestic income growth are both significant with the expected signs, but RER changes are only weakly significant and the terms of trade variable is not significant. The effect of export duty reductions is marginally significant, but the negative impact of import duty reductions and trade liberalisation remains strong. Also, the slope dummy confirms that the interaction between liberalisation and growth has worsened the trade balance.

Turning to the current account of the balance of payments shown in Tables 5A to 6B, the results are weaker than for the trade balance, but they indicate that trade liberalisation has also worsened the current account for our sample of countries. The weaker results are not unexpected, given that the current account balance includes not only goods and services but also other current transactions such as interest payments and profit flows. These items have more to do with financial liberalisation than trade liberalisation, and have no systematic relation with export and import behaviour.

Tables 5A and 5B report the results taking the current account as a proportion of GDP as the dependent variable. It is found that the effect of world income growth is positive (though only weakly significant); domestic income growth has the expected negative effect;

real exchange rate and terms of trade effects are insignificant; export duty reductions significantly improve the current account in both the FE and GMM estimates. Regarding the trade policy and liberalisation variables, import duty reductions are marginally significant in worsening the balance of payments, and trade liberalisation (i.e. the shift dummy) has had a significantly negative effect on the current account of the balance of payments in the range of 0.14 to 0.80 percent of GDP. These findings relate to an average current account deficit to GDP of 4.79 percent for the total sample. Therefore, the impact of liberalisation on the current account appears to be relatively small when compared to the negative effects of trade liberalisation on the trade balance of the balance of payments. Finally, faster growth in the liberalised economies is associated with greater current account deficits, as shown by the negative and significant coefficient on the interaction dummy.

When the rate of change of the current account is taken as the dependent variable, the liberalisation and the other explanatory variables lose their significance in some cases, largely because of big year-to-year changes in financial flows, which dwarf changes in the trade flows.

3.2.2 Time-Series/Cross-Section Results

Disaggregated Analysis by Region

We turn now to examine the impact of trade liberalisation on the trade balance and balance of payments in the four separate regions of Africa; East Asia; South Asia, and Latin America, to distinguish whether there are any significant ‘regional’ differences in terms of the relationship between trade liberalisation and the trade balance and the balance of payments. For this purpose, time-series/cross-section (TSCS) modelling is undertaken, which is a suitable specification for analysing data observed for a relatively large number of years and for a relatively small number of cross sectional units. The TSCS model allows for the error

term of each region/individual to be freely correlated across equations, and the error term need not have the same properties for each unit (thus, it is suitable for the analysis of region- or group-specific relationships). The results are shown in Tables 7A to 8B.

Focussing first on the trade balance (see Table 7A), world income growth, domestic income growth, and real exchange rate changes all have the expected sign and are generally significant in each of the regions, and the 'pure' terms of trade impact is very small. Export duty reductions have the expected effect of improving the trade balance, most distinctly in East Asia where the effect of a one-percentage point fall in duties has been to improve the trade balance by over 0.5 percent of GDP. Similarly, the impact of tariff reductions on imports has been the greatest in East Asia worsening the trade balance by around 0.7 percent of GDP for each one percentage point reduction in the tariff rate. In all regions, however, export duty reductions have improved the trade balance, and import duty reductions have worsened the trade balance, but the negative impact of import duty reductions has been slightly stronger than the positive effect of export duty declines. The more liberalised trade regimes have worsened the trade balance in all the regions, most notably in Africa (as demonstrated by both the shift and interaction dummies). Also, taking the rate of change of the trade balance as the dependent variable gave the same qualitative results as TB/GDP (see Table 7B).

Tables 8A and 8B present the analysis of the current account of the balance of payments. The conclusions are basically the same as for the trade balance, although most of the estimated coefficients are somewhat smaller. World income growth has a positive impact on the current account; domestic income growth worsens the current account; the impact of real exchange rate changes is diverse, and the 'pure' terms of trade effect is very small. Export duty reductions have generally improved the current account, while import duty reductions have worsened it, particularly in Latin America.

The general impact of trade liberalisation in all the regions has been to worsen the current account, but by less than one percent of GDP in most cases, which is less than the impact on the trade balance. This negative impact is confirmed by the results for all countries aggregated, as well as for the different regions.

Disaggregation According to Degree of Protection

Finally, we consider the impact of trade liberalisation on the trade balance and balance of payments according to the degree of restriction and/or freedom of the trade regime of the countries; that is, whether countries are highly or lowly protected (see Tables A1 and A2 in the appendix for the definition and classification criteria). The estimation results are provided in Tables 9A to 10B. If imports are generally more sensitive to liberalisation than exports, it is expected that the direct effect of liberalisation on the trade balance and balance of payments will be greater in the more highly protected group of countries than in those with more moderate degrees of protection (for equal changes in the degree of protection), and this is generally confirmed by the results.

Tables 9A and 9B report the results for the trade balance, and it shows that the effect of changes in export and import duties is significantly higher in the highly protected countries than in the countries with already low to moderate degrees of protection. Similarly, the negative impact on the trade balance of a more liberalised trade regime is much greater in countries that start highly protected than in those with already low levels of protection. The effect of domestic income growth and real exchange rate changes is higher in countries with low-moderate levels of protection; moreover, the positive impact on the trade balance of world income growth is smaller in the high-very high category of countries.

Finally, in the case of the current account of the balance of payments (see Tables 10A and 10B), the impact of duty changes on exports and imports differ significantly between the

countries with low-moderate and highly protected trade regimes, and the overall effect of the liberalisation process continues to be the strongest in those countries that started heavily protected. The effect of real exchange rate changes and domestic and foreign income growth is very similar to that observed for the trade balance. The outcomes for the case of the current account growth estimations (Table 10B), however, present a smaller impact of trade reform, as discussed earlier.

Testing for the Equality of the Coefficients

The likelihood ratio statistics (LRS) for testing the equality of coefficients across the different regions and trade policy regime classification are presented in Table 11. The results reject the restrictions that the export and import duties, the shift and the slope liberalisation dummies, and the four trade liberalisation indicators together are the same for all four regions, and for the low-moderate and high-very high categories of trade policy distortions. This clearly confirms the previous findings, which show the impact of trade policy reforms varies considerably across countries. The differences in the effects of the trade liberalisation indicators probably reflect institutional differences across countries, and the degree of restrictions existing before and after liberalisation, as well as the initial disparities in the balance of trade and current account performances.

4. Conclusions

This paper has been concerned with the effect of trade liberalisation on the trade balance and the balance of payments, taking 22 developing countries from Africa, East Asia, South Asia and Latin America that have undertaken extensive trade policy reforms over the last three decades. Special attention has been paid to identifying the year(s) when significant

liberalisation took place (and then continued), and considerable attention has also been paid to the construction of time series for the duties applied to exports and imports over the period of analysis, which are also used as measures of liberalisation. The various estimation techniques used have provided results that are strong and robust to the different specifications estimated. The findings may be summarised as follows.

First, the effect of the pure trade liberalisation has been to deteriorate the trade balance by over one percent of GDP on average, but the impact on the current account of the balance of payments has been less (increasing the average deficit by roughly 0.5 percent of GDP). The effects of the liberalisation on the trade balance and balance of payments have not been the same across the regions of Africa, Latin America, East Asia, and South Asia; Africa appears to be more affected by the process of liberalisation. Also, the trade balance and the current account balance have worsened following liberalisation, on average, in all the regions analysed. Furthermore, faster growth in the liberalised economies is associated with greater trade balance and current account deficits, as shown by the negative and significant interaction dummy, particularly in East Asia.

With respect to the estimates that discriminate between countries according to the degree of protection, the impact of liberalisation differs in relation to whether countries are highly protected, or already have relatively low levels of protection. The negative effects on the trade balance and balance of payments are larger in the more highly protected countries.

As suggested earlier, the effects of trade liberalisation on the balance of payments, basically in the trade account, have serious policy implications. Many countries face serious balance of payments problems originating, at least in part, from declining terms of trade, and this in turn leads to reduced income from their exports as well as increased costs for their imports. Moreover, the balance of payments crises suffered by a large number of developing countries have revealed the extent to which growth rates have come to depend on steadily

rising export earnings and capital inflows and how disruptive an interruption to these sources of foreign exchange can be.

An important issue is whether or not the deficits can be sustained, and that depends on macroeconomic policies (mainly those that influence demand), developments in the real exchange rate and the inflows of foreign capital. The importance of the right policy sequence before and during liberalisation is a matter of great debate, but there is no doubt that there is a need for implementing the appropriate exchange rate, fiscal and monetary policies during the liberalisation process.

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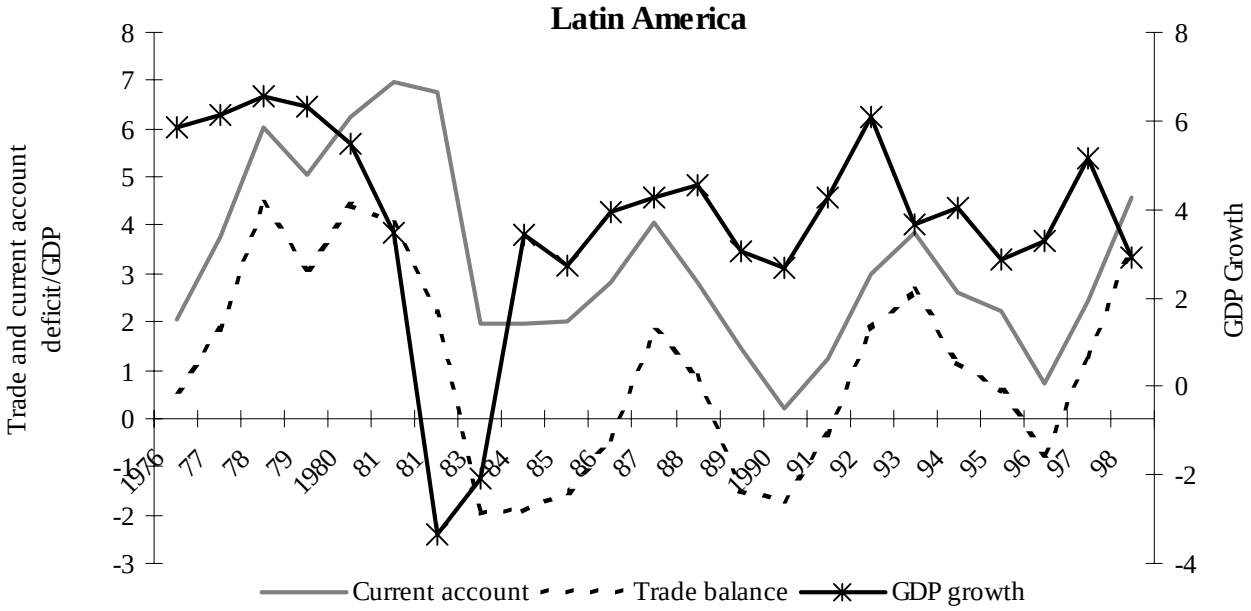
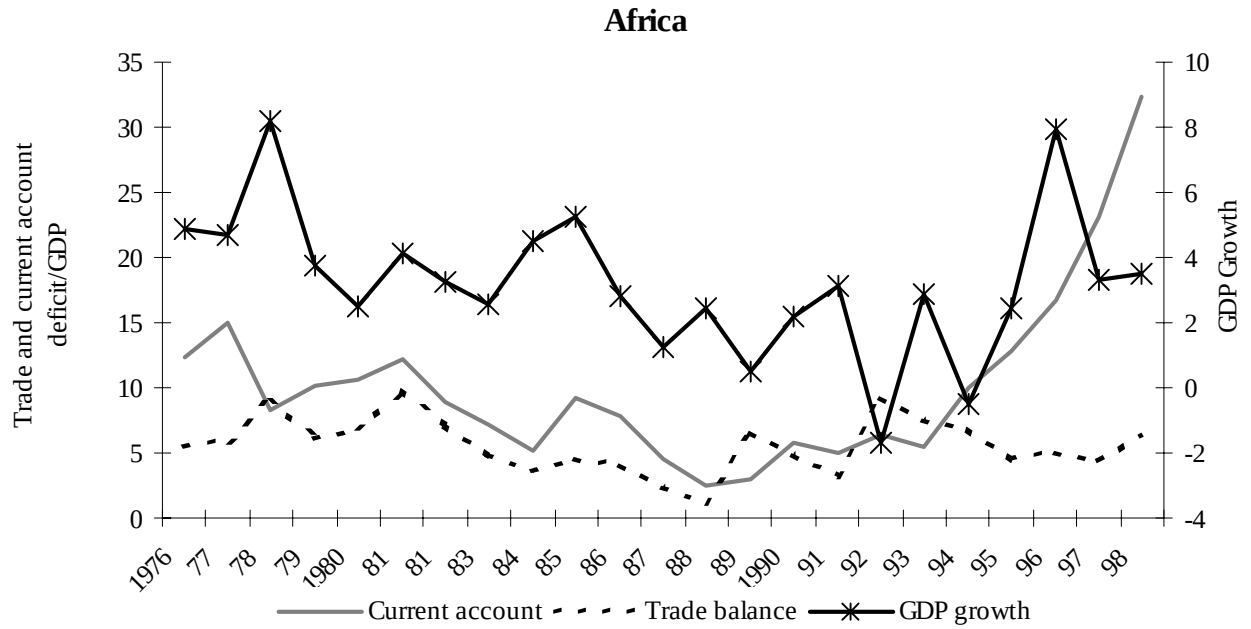
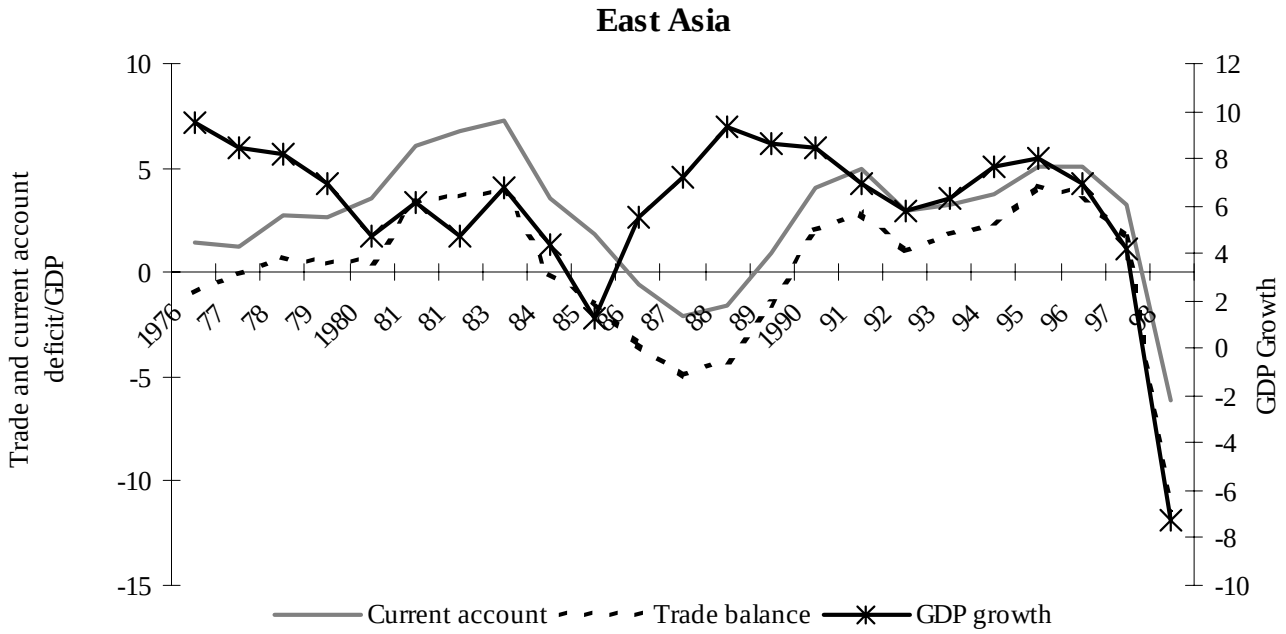
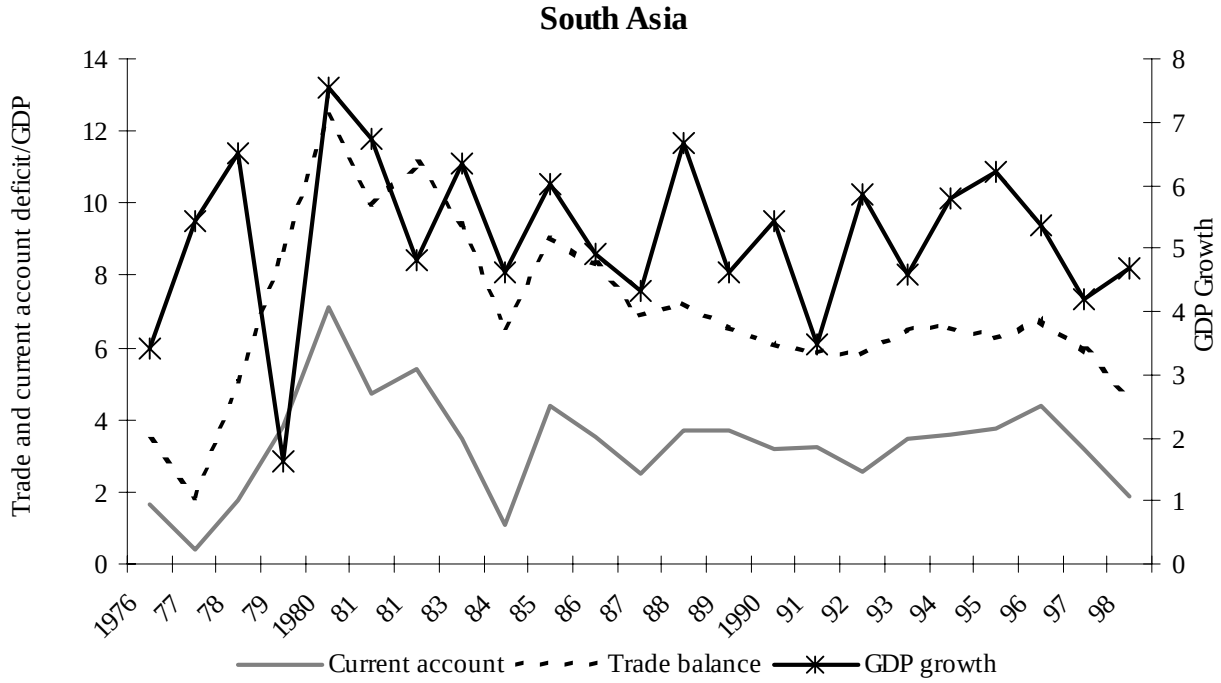
Figure 1

Current Account and GDP Growth in Selected Developing Countries: (1972-98)









Source: World Bank, *World Development Indicators*, 2000, CD.

Note: Positive values for the current account and trade balance indicate a deficit, negative values a surplus.

Table 1

Trade Taxes and Trade Balance Before and After Trade Liberalisation

		Before Liberalisation (from 1972)				After Liberalisation (up to 1998)			
	Year of lib.	Import duties	Export duties	Trade balance	Current account	Import duties	Export duties	Trade balance	Current account
						Trade Balance Improvement			
TB* ≤ *2									
Chile	1976	13.9	0.0	-1.2	-6.7	12.4	0.0	0.2	5.1
Korea	1990	8.7	0.0	-0.9	-0.7	5.6	0.0	-0.1	-0.1
Dom. Rep.	1992	18.9	5.3	-7.4	-4.3	15.0	0.0	-6.6	-3.2
Ecuador	1991	15.8	1.6	0.1	-5.3	8.9	0.3	1.4	-4.3
Sri Lanka	1990	13.4	13.5	-10.6	-5.9	13.4	0.7	-9.1	-4.5
Tunisia	1989	23.8	1.2	-6.3	-6.0	21.3	0.3	-4.4	-4.2
Venezuela	1991	10.1	0.0	3.1	0.9	10.1	0.0	5.1	1.8
2* < *TB* ≤ *5									
Cameroon	1991	21.7	4.2	-0.9	-5.6	21.0	1.8	2.8	-2.8
Pakistan	1991	26.8	4.0	-10.1	-3.3	21.3	0.0	-6.5	-4.1
Paraguay	1989	8.6	0.7	-5.8	-5.6	4.9	0.0	-3.1	-1.4
Thailand	1986	12.8	2.7	-4.7	-5.3	9.7	0.3	-1.6	-3.4
Uruguay	1985	16.3	1.1	-1.3	-3.4	10.7	0.4	2.4	-0.7
5* < *TB* ≤ *10									
Morocco	1984	19.1	2.1	-14.0	-11.0	16.7	0.5	-9.0	-1.9
						Trade Balance Deterioration			
TB* ≤ *2									
Costa Rica	1990	9.7	7.9	-2.8	-8.2	8.0	2.6	-3.1	-4.3
India	1991	38.6	1.4	-2.1	-1.0	27.8	0.2	-2.4	-1.1
Indonesia	1986	4.8	0.6	4.0	-1.7	5.1	0.5	2.4	-1.9
Malaysia	1988	8.4	6.9	3.4	-1.8	5.1	1.7	3.1	-3.6
Mexico	1986	8.3	2.0	2.1	-1.9	4.7	0.0	-0.3	-2.8
Philippines	1986	13.5	1.4	-2.9	-5.3	14.0	0.1	-4.3	-2.6
2* < *TB* ≤ *5									
Colombia	1991	15.0	4.5	0.4	-1.3	9.2	0.3	-3.3	-2.8
Zambia	1990	10.1	2.4	-1.1	-12.1	16.7	0.0	-5.7	-4.4
5* < *TB* ≤ *10									
Malawi	1991	21.5	0.4	-7.6	-10.1	21.4	0.0	-13.2	-58.3

Sources: Dean *et al* (1994), IMF (1998, 1999), Joshi and Little (1996), UNDP/UNCTAD (1999), Winglee et al (1992), World Bank (1999, 2000), WTO Trade Policy Reviews (various issues).

Notes:
1. The values are period averages, and are the author's calculations.
2. Trade Balance (*TB*) improvement/deterioration refers to percent of GDP.

Table 2

Growth of Exports and Imports and Movements of the Real Exchange Rate after Trade Liberalisation: 1976-98

Region and Country	Year of lib.	First two years after lib. Growth of: Exports	Imports	Real ex. rate	Subsequent years (to 1998) Growth of: Exports	Imports	Real ex. rate
Africa:							
Cameroon	1991	-5.6	-9.3	-2.9	2.1	7.7	-3.3
Malawi	1991	-4.0	3.6	-2.9	9.8	5.4	-4.1
Morocco	1984	6.0	0.01	-5.5	7.9	7.0	0.5
Tunisia	1989	1.8	2.5	-0.9	6.0	4.5	0.3
Zambia	1990	26.6	16.1	-5.4	-0.6	-2.3	3.5
Latin America:							
Chile	1976	11.5	26.5	-3.8	8.6	9.4	-0.7
Colombia	1991	5.9	38.2	4.1	6.8	8.9	9.4
Costa Rica	1990	10.3	11.8	-0.5	8.0	8.1	1.9
Dominican Rep.	1992	64.8	2.5	4.3	12.1	8.9	2.1
Ecuador	1991	7.0	0.9	6.9	5.2	4.6	2.7
Mexico	1986	8.4	20.9	9.5	12.0	14.1	2.7
Paraguay	1989	19.0	98.0	6.6	6.6	5.1	0.7
Uruguay	1985	1.5	22.6	-2.3	9.0	10.5	4.6
Venezuela	1991	5.0	9.9	4.5	7.6	4.1	11.8
East Asia:							
Indonesia	1986	7.8	-8.4	-16.2	9.1	12.0	0.15
Korea	1990	11.2	12.3	-2.9	17.0	7.6	0.3
Malaysia	1988	17.3	25.1	-1.1	13.5	10.5	-2.1
Philippines	1986	10.6	24.1	-6.2	10.3	9.5	1.7
Thailand	1986	24.5	36.6	-6.4	12.4	7.9	1.0
South Asia:							
India	1991	11.0	14.9	-8.1	13.4	14.7	1.5
Pakistan	1991	7.6	22.8	-1.2	-1.1	-1.7	-0.5
Sri Lanka	1990	9.8	12.3	1.6	8.8	9.1	1.6
Averages		11.7	17.5	-1.3	8.4	7.5	1.6

Sources: Dean *et al* (1994), IMF (1998, 1999), Joshi and Little (1996), UNDP/UNCTAD (1999), Winglee et al (1992), World Bank (1999, 2000), WTO Trade Policy Reviews (various issues).

Table 3A

Trade Liberalisation and the Trade Balance: (1976-98)

	Dependent variable: trade balance/GDP (*tb*)			
	Least Squares (Fixed Effects)			
Explanatory variables:	**(i)**	**(ii)**	**(iii)**	**(iv)**
tb_{-1}	0.68 (2.41)*	0.67 (2.59)*	0.68 (2.13)*	0.67 (3.55)**
w	0.88 (2.02)*	0.74 (1.95)§	0.92 (2.01)*	0.89 (1.96)*
y	-0.21 (4.76)**	-0.19 (4.35)**	-0.22 (3.80)**	-0.19 (3.37)**
p	-0.06 (3.72)**	-0.07 (3.63)**	-0.07 (3.73)**	-0.07 (3.93)**
d_x	-0.28 (2.52)*	-0.26 (2.69)*	-0.21 (2.50)*	-0.23 (1.69)§
d_m	0.74 (3.53)**	0.83 (2.76)*	0.78 (3.50)**	0.81 (2.38)*
lib	-1.35 (2.77)*	-1.21 (2.52)*	-1.56 (2.42)*	-1.28 (4.48)**
TOT		0.27 (1.98)*		0.29 (2.57)*
$y \times lib$			-0.26 (3.31)**	-0.23 (2.13)*
	Diagnostic Statistics			
R^2	0.54	0.54	0.54	0.54
Hausman test	39.25	56.85	87.00	99.03
Heteroscedasticity test	28.05	9.05	18.93	15.71
Number of observations	506	506	506	506

Notes:

1. Figures in parentheses ( ) are absolute t-ratios; figures in brackets [ ] are p-values. §, *, ** indicate that a coefficient is significant at the 10 percent, 5 percent and 1 percent level respectively.
2. Heteroscedasticity test is based on a regression of the residuals on the squared fitted values. The Hausman test justifies 'fixed effect' estimations over random effects.

Table 3B

Trade Liberalisation and the Trade Balance: 1976-98

	Dependent variable: trade balance/GDP (*tb*)			
	GMM			
Explanatory variables:	**(i)**	**(ii)**	**(iii)**	**(iv)**
tb_{-1}	0.92 (2.80)**	0.83 (2.64)	0.62 (3.96)**	0.61 (2.23)*
w	0.83 (2.24)*	1.12 (2.28)*	0.87 (2.92)*	0.73 (2.55)*
y	-0.26 (3.15)**	-0.30 (2.41)*	-0.21 (2.31)*	-0.18 (2.68)*
p	-0.02 (2.15)*	-0.07 (1.49)	-0.05 (1.36)	-0.01 (1.25)
d_x	-0.36 (2.27)*	-0.40 (3.44)**	-0.28 (2.68)*	-0.29 (2.88)*
d_m	0.88 (3.32)**	0.86 (3.37)**	0.85 (2.36)*	0.83 (6.52)**
lib	-1.76 (3.29)**	-2.20 (5.92)**	-2.52 (2.22)*	-3.57 (9.75)*
$y \times lib$			-0.41 (4.39)**	-0.40 (6.77)**
TOT		0.21 (2.29)*		0.20 (1.45)
	Diagnostic Statistics			
Wald test	[0.000]	[0.000]	[0.000]	[0.000]
Sargan test	[0.753]	[0.634]	[0.419]	[0.835]
1st-order serial correlation	[0.000]	[0.000]	[0.000]	[0.000]
2nd-order serial correlation	[0.491]	[0.552]	[0.623]	[0.128]
Number of observations	498	498	498	498

Notes:

1. Figures in parentheses ( ) are absolute t-ratios; figures in brackets [ ] are p-values. §, *, ** indicate that a coefficient is significant at the 10 percent, 5 percent and 1 percent level respectively.
2. The Wald test is for the joint significance of the regressors. The Sargan test is of over-identifying restrictions. The tests for 1st and 2nd order of no serial correlation are asymptotically distributed as standard normal variables (see Arellano and Bond, 1991). The p-values report the probability of rejecting the null hypothesis of serial correlation, where the first differencing will induce (MA1) serial correlation if the time-varying component of the error term in levels is a serially uncorrelated disturbance.
3. The GMM estimations were performed using the programme DPD98 for Gauss (Arellano and Bond, 1998).

Table 4A

Trade Liberalisation and the Trade Balance: 1976-98

	Dependent variable: trade balance growth (*tbg*)			
	Least squares (Fixed Effects)			
Explanatory variables:	**(i)**	**(ii)**	**(iii)**	**(iv)**
tbg_{-1}	0.05 (1.08)	0.05 (0.83)	0.04 (1.12)	0.04 (1.13)
w	0.69 (2.09)*	0.61 (2.27)*	0.65 (2.13)*	0.72 (2.59)*
y	-0.25 (7.14)**	-0.25 (4.27)**	-0.23 (5.47)**	-0.19 (5.47)**
p	0.02 (2.16)*	0.03 (1.14)	0.03 (2.33)*	0.01 (1.38)
d_x	-0.21 (1.72)§	-0.19 (1.81)§	-0.17 (2.06)*	-0.19 (1.71)§
d_m	0.43 (1.75)§	0.51 (2.72)*	0.49 (2.39)*	0.49 (2.63)*
lib	-1.18 (2.61)*	-1.12 (2.40)*	-1.23 (2.82)*	-1.26 (2.76)*
$y \times lib$			-0.27 (5.56)**	-0.27 (8.93)**
TOT		0.50 (0.75)		0.16 (0.23)
	Diagnostic Statistics			
R^2	0.34	0.35	0.39	0.39
Heteroscedasticity test	34.96	34.12	14.04	14.11
Hausman test	69.94	75.67	22.31	24.28
Number of observations	506	506	506	506

Notes:

1. Figures in parentheses ( ) are absolute t-ratios; figures in brackets [ ] are p-values. §, *, ** indicate that a coefficient is significant at the 10 percent, 5 percent and 1 percent level respectively.
2. Heteroscedasticity test is based on a regression of the residuals on the squared fitted values.

Table 4B

Trade Liberalisation and the Trade Balance: 1976-98

	Dependent variable: trade balance growth (*tbg*)			
	GMM			
Explanatory variables:	**(i)**	**(ii)**	**(iii)**	**(iv)**
tbg_{-1}	-0.25 (1.96)*	-0.65 (1.64)§	-0.39 (1.73)§	-0.26 (0.92)
w	0.46 (2.61)*	0.60 (2.12)*	0.78 (2.18)*	0.76 (2.89)*
y	-0.18 (2.94)*	-0.28 (2.83)*	-0.17 (1.85)§	-0.15 (2.17)*
p	-0.29 (0.93)	-0.37 (1.09)	-0.14 (0.70)	-0.15 (0.39)
d_x	-0.16 (1.71)§	-0.30 (1.81)§	-0.23 (1.63)§	-0.26 (2.49)*
d_m	0.48 (2.03)*	0.65 (2.42)*	0.49 (2.67)*	0.63 (2.65)*
lib	-1.22 (3.17)**	-1.39 (3.86)**	-1.61 (2.31)*	-2.53 (3.07)**
$y \times lib$			-0.15 (1.91)§	-0.13 (2.04)*
TOT		0.29 (0.83)		0.47 (0.96)
	Diagnostic Statistics			
Wald test	[0.000]	[0.000]	[0.000]	[0.000]
Sargan test	[0.410]	[0.495]	[1.05]	[0.594]
1st-order serial correlation	[0.601]	[0.100]	[0.213]	[0.173]
2nd-order serial correlation	[0.000]	[0.000]	[0.000]	[0.000]
Number of observations	498	498	498	498

Notes:

1. Figures in parentheses ( ) are absolute t-ratios; figures in brackets [ ] are p-values. §, *, ** indicate that a coefficient is significant at the 10 percent, 5 percent and 1 percent level respectively.
2. The Wald test is for the joint significance of the regressors. The Sargan test is of over-identifying restrictions. The tests for 1st and 2nd order of no serial correlation are asymptotically distributed as standard normal variables (see Arellano and Bond, 1991). The p-values report the probability of rejecting the null hypothesis of serial correlation, where the first differencing will induce (MA1) serial correlation if the time-varying component of the error term in levels is a serially uncorrelated disturbance.
3. The GMM estimations were performed using the programme DPD98 for Gauss (Arellano and Bond, 1998).

Table 5A

Trade Liberalisation and the Current Account: 1976-98

	Dependent variable: current account/GDP (ca)			
	Least squares (fixed effects)			
Explanatory variables:	**(i)**	**(ii)**	**(iii)**	**(iv)**
ca_{-1}	0.71 (6.66)**	0.71 (7.33)**	0.71 (6.63)**	0.70 (7.29)**
w	0.53 (1.72)§	0.56 (1.85) §	0.53 (2.70)*	0.55 (1.84)§
y	-0.14 (2.33)*	-0.20 (1.96)*	-0.37 (2.34)*	-0.14 (1.62) §
p	-0.03 (0.94)	0.01 (0.25)	-0.02 (0.97)	0.01 (0.28)
d_x	-0.16 (2.46)*	-0.24 (2.66)*	-0.17 (1.78)§	-0.23 (2.65)*
d_m	0.36 (1.81) §	0.51 (3.98)**	0.39 (1.68)§	0.51 (3.95)**
lib	-0.72 (2.47)*	-0.78 (2.35)*	-0.73 (2.09)*	-0.75 (2.84)*
$y \times lib$			-0.20 (1.73)§	-0.15 (2.73)*
TOT		0.24 (1.21)		1.08 (2.05)*
	Diagnostic Statistics			
R^2	0.36	0.38	0.51	0.52
Heteroscedasticity test	17.13	9.83	9.99	10.44
Hausman test	45.71	18.62	26.85	46.78
Number of observations	506	506	506	506

Notes:

1. Figures in parentheses ( ) are absolute t-ratios; figures in brackets [ ] are p-values. §, *, ** indicate that a coefficient is significant at the 10 percent, 5 percent and 1 percent level respectively.
2. Heteroscedasticity test is based on a regression of the residuals on the squared fitted values. The Hausman test justifies 'fixed effect' estimations over random effects.

Table 5B

Trade Liberalisation and the Current Account: 1976-98

	Dependent variable: current account/GDP (ca)			
	GMM			
Explanatory variables:	**(i)**	**(ii)**	**(iii)**	**(iv)**
ca_{-1}	0.78 (6.10)**	0.78 (6.05)**	0.73 (3.79)**	0.56 (2.06)*
w	0.88 (3.56)**	0.95 (2.81)*	0.65 (2.15)*	0.51 (1.68)§
y	-0.20 (2.34)*	-0.18 (1.89)§	-0.13 (2.17)*	-0.34 (2.33)*
p	-0.02 (0.95)	-0.02 (0.88)	0.02 (0.83)	-0.01 (0.74)
d_x	-0.16 (2.18)*	-0.26 (2.46)*	-0.14 (1.91)§	-0.19 (2.27)*
d_m	0.33 (1.95)§	0.36 (1.89)§	0.35 (1.73)§	0.22 (1.73)§
lib	-0.78 (2.24)*	-0.80 (2.83)*	-0.79 (2.35)*	-0.76 (3.33)**
$y \times lib$			-0.39 (3.91)**	-0.69 (2.74)*
TOT		0.02 (0.88)		0.27 (0.72)
	Diagnostic Statistics			
Wald test	[0.000]	[0.000]	[0.000]	[0.000]
Sargan test	[0.646]	[0.830]	[0.117]	[0.699]
1st-order serial correlation	[0.824]	[0.678]	[0.705]	[0.758]
2nd-order serial correlation	[0.000]	[0.000]	[0.000]	[0.000]
Number of observations	498	498	498	498

Notes:

1. Figures in parentheses ( ) are absolute t-ratios; figures in brackets [ ] are p-values. §, *, ** indicate that a coefficient is significant at the 10 percent, 5 percent and 1 percent level respectively.
2. The Wald test is for the joint significance of the regressors. The Sargan test is of over-identifying restrictions. The tests for 1st and 2nd order of no serial correlation are asymptotically distributed as standard normal variables (see Arellano and Bond, 1991). The p-values report the probability of rejecting the null hypothesis of serial correlation, where the first differencing will induce (MA1) serial correlation if the time-varying component of the error term in levels is a serially uncorrelated disturbance.
3. The GMM estimations were performed using the programme DPD98 for Gauss (Arellano and Bond, 1998).

Table 6A

Trade Liberalisation and the Current Account: 1976-98

	Dependent variable: current account growth (*cag*)			
	Least squares (Fixed effects)			
Explanatory variables:	**(i)**	**(ii)**	**(iii)**	**(iv)**
cag_{-1}	-0.15 (0.69)	-0.19 (0.98)	-0.19 (0.84)	-0.19 (0.92)
w	0.55 (1.89)*	0.56 (1.93)§	0.63 (1.70)§	0.63 (2.57)*
y	-0.22 (2.16)*	-0.22 (8.58)**	-0.33 (12.00)**	-0.32 (11.94)**
p	-0.02 (2.59)	-0.03 (2.57)*	-0.01 (1.51)	-0.02 (1.66)§
d_x	-0.14 (2.58)*	-0.14 (2.18)*	-0.13 (2.46)*	-0.13 (2.10)*
d_m	0.22 (2.30)*	0.24 (2.45)*	0.18 (2.24)*	0.24 (1.91)§
lib	-0.46 (0.96)	-0.49 (2.04)*	-0.56 (2.37)*	-0.47 (2.32)*
$y \times lib$			-0.18 (4.66)**	-0.15 (6.31)**
TOT		0.03 (0.97)		0.78 (0.93)
	Diagnostic Statistics			
R^2	0.16	0.16	0.27	0.38
Heteroscedasticity test	37.65	37.58	17.12	17.05
Hausman test	15.83	16.45	24.50	25.69
Number of observations	506	506	506	506

Notes:

1. Figures in parentheses ( ) are absolute t-ratios; figures in brackets [ ] are p-values. §, *, ** indicate that a coefficient is significant at the 10 percent, 5 percent and 1 percent level respectively.
2. Heteroscedasticity test is based on a regression of the residuals on the squared fitted values. The Hausman test justifies 'fixed effect' estimations over random effects.

Table 6B

Trade Liberalisation and the Current Account: 1976-98

	Dependent variable: current account growth (*cag*)			
	GMM			
Explanatory variables:	**(i)**	**(ii)**	**(iii)**	**(iv)**
cag_{-1}	-0.59 (0.96)	-0.75 (0.97)	-0.12 (0.99)	-0.16 (0.99)
w	0.71 (1.96)*	0.82 (1.84)§	0.62 (1.98)*	0.79 (1.99)*
y	-0.27 (3.52)*	-0.19 (2.01)*	-0.25 (2.93)*	-0.27 (3.16)**
p	0.04 (0.93)	0.04 (0.95)	0.09 (1.18)	0.01 (0.79)
d_x	-0.11 (1.02)	-0.11 (1.13)	-0.20 (0.73)	-0.12 (1.17)
d_m	0.19 (1.96)*	0.17 (1.95)§	0.54 (1.03)	0.26 (2.00)
lib	-0.53 (1.50)	-0.42 (2.02)*	-0.57 (1.72)§	-0.70 (2.01)*
$y \times lib$			-0.16 (1.99)*	-0.20 (1.98)*
TOT		0.12 (0.98)		-0.10 (0.99)
	Diagnostic Statistics			
Wald test	[0.003]	[0.009]	[0.000]	[0.051]
Sargan test	[0.368]	[0.223]	[0.250]	[0.283]
1st-order serial correlation	[0.000]	[0.000]	[0.000]	[0.000]
2nd-order serial correlation	[0.340]	[0.186]	[0.246]	[0.597]
Number of observations	498	498	498	498

Notes:

1. Figures in parentheses ( ) are absolute t-ratios; figures in brackets [ ] are p-values. §, *, ** indicate that a coefficient is significant at the 10 percent, 5 percent and 1 percent level respectively.
2. The Wald test is for the joint significance of the regressors. The Sargan test is of over-identifying restrictions. The tests for 1st and 2nd order of no serial correlation are asymptotically distributed as standard normal variables (see Arellano and Bond, 1991). The p-values report the probability of rejecting the null hypothesis of serial correlation, where the first differencing will induce (MA1) serial correlation if the time-varying component of the error term in levels is a serially uncorrelated disturbance.
3. The GMM estimations were performed using the programme DPD98 for Gauss (Arellano and Bond, 1998).

Table 7A

Two Steps Generalised Least Squares and Maximum Likelihood Estimation

	Dependent variable: trade balance/GDP									
	All Countries		**Africa**		**East Asia**		**South Asia**		**Latin America**	
Explanatory variables:	**(i a)**	**(i b)**	**(ii a)**	**(ii b)**	**(iii a)**	**(iii b)**	**(iv a)**	**(iv b)**	**(v a)**	**(v b)**
tb_{-1}	0.78 (2.77)*	0.69 (2.69)*	0.76 (2.77)*	0.67 (1.94)§	0.61 (2.17)*	0.43 (3.21)**	0.76 (3.85)**	0.74 (4.84)**	0.75 (3.58)**	0.72 (2.64)*
w	0.92 (2.18)*	0.83 (3.72)**	0.62 (2.51)*	0.71 (2.15)*	0.98 (2.86)*	0.75 (2.90)*	0.73 (2.02)*	0.76 (2.41)*	0.88 (1.99)*	0.72 (2.96)**
y	-0.27 (3.57)**	-0.31 (7.29)**	-0.16 (3.53)**	-0.17 (1.76)§	-0.43 (9.55)**	-0.40 (5.79)**	-0.16 (2.40)*	-0.14 (2.28)*	-0.25 (4.88)**	-0.24 (8.51)**
p	-0.01 (2.96)**	-0.02 (3.04)**	-0.02 (0.53)	-0.01 (2.68)*	-0.08 (4.10)**	-0.08 (3.65)**	-0.02 (1.27)	-0.01 (0.85)	-0.06 (3.35)**	-0.05 (6.03)**
$\boldsymbol{d_x}$	-0.28 (2.16)*	-0.31 (2.07)*	-0.28 (2.41)*	-0.29 (2.10)*	-0.54 (2.00)*	-0.54 (3.43)**	-0.26 (1.66)§	-0.29 (2.25)*	-0.25 (2.65)*	-0.28 (2.74)*
d_m	0.37 (1.99)*	0.48 (4.76)**	0.67 (11.53)**	0.46 (2.09)*	0.77 (7.17)**	0.67 (8.89)**	0.56 (2.15)*	0.60 (4.16)**	0.34 (1.98)*	0.47 (3.80)**
lib	-1.61 (4.35)**	-2.31 (3.83)*	-1.59 (2.68)*	-2.77 (2.42)*	-1.43 (2.56)*	-1.44 (2.44)*	-1.44 (2.68)*	-1.94 (2.35)*	-0.99 (2.14)*	-1.51 (2.87)*
$y \times lib$	-0.29 (3.59)**	-0.19 (2.40)*	-0.19 (2.17)*	-0.18 (2.50)*	-0.35 (6.49)**	-0.36 (2.79)*	0.18 (2.71)*	-0.26 (2.83)*	-0.28 (2.39)*	-0.28 (2.27)*
TOT		-0.07 (2.39)*		-0.03 (1.03)		-0.10 (1.75)§		-0.04 (0.71)		-0.19 (1.77)§
	Diagnostic Statistics									
LRS	93.04 [38.93]	119.22 [38.93]	24.61 [13.28]	28.00 [13.28]	30.54 [23.21]	33.07 [23.21]	8.31 [7.31]	9.39 [7.31]	70.91 [20.09]	71.07 [20.09]
Number of observations	506	506	115	115	115	115	69	69	207	207

Notes:

1. Figures in parentheses ( ) are absolute t-ratios. §, *, ** indicate that a coefficient is significant at the 10 percent, 5 percent and 1 percent level respectively.
2. Likelihood Ratio Statistic (LRS) is the test for serial correlation; the numbers in brackets [ ] are the critical values. The results provided are based on heteroskedastic and correlated regressions, with group autocorrelation. Such regressions are supported by the LRS.

Table 7B

Two Steps Generalised Least Squares and Maximum Likelihood Estimation

	Dependent variable: trade balance growth									
	All Countries		**Africa**		**East Asia**		**South Asia**		**Latin America**	
Explanatory variables:	**(i a)**	**(i b)**	**(ii a)**	**(ii b)**	**(iii a)**	**(iii b)**	**(iv a)**	**(iv b)**	**(v a)**	**(v b)**
tbg_{-1}	0.02 (2.14)*	0.03 (2.17)*	0.13 (1.53)	0.12 (1.31)	-0.07 (3.91)**	-0.03 (1.58)	-0.16 (1.34)	-0.16 (1.37)	0.04 (0.13)	0.01 (0.67)
w	0.53 (2.17)*	0.75 (3.16)**	0.56 (2.14)*	0.61 (2.33)*	0.70 (1.91)§	0.88 (3.34)**	0.48 (5.09)**	0.61 (4.31)**	0.74 (3.56)**	0.76 (3.38)**
y	-0.19 (2.34)*	-0.22 (2.54)*	-0.12 (2.09)*	-0.13 (2.56)*	-0.19 (3.17)**	-0.18 (2.21)*	-0.15 (2.53)*	-0.27 (2.13)*	-0.16 (2.31)*	-0.28 (2.94)*
p	0.10 (0.95)	0.10 (0.98)	-0.12 (1.12)	-0.06 (0.61)	-0.25 (1.53)	-0.37 (2.85)*	0.01 (1.61)	0.70 (1.23)	0.15 (1.60)	0.15 (1.62)
$\boldsymbol{d_x}$	-0.19 (2.19)*	-0.23 (1.99)*	-0.26 (2.27)*	-0.24 (1.77)§	-0.36 (2.13)*	-0.27 (4.44)**	-0.14 (1.81)§	-0.19 (1.96)*	-0.69 (1.99)*	-0.85 (2.44)*
d_m	0.37 (2.54)*	0.89 (2.46)*	0.39 (2.89)*	0.67 (1.85)§	0.35 (7.69)**	0.47 (6.72)**	0.48 (2.81)*	0.61 (2.68)*	0.94 (2.62)*	0.89 (2.39)*
lib	-1.54 (2.08)*	-1.75 (2.64)*	-1.88 (2.54)*	-2.60 (2.42)*	-1.29 (1.99)*	-1.40 (3.63)*	-1.67 (2.99)**	-2.35 (2.80)*	-1.07 (2.57)*	-1.25 (2.96)*
$y \times lib$	-0.39 (2.33)*	-0.45 (2.38)*	-0.17 (2.66)*	-0.19 (1.88)§	-0.79 (1.66)§	-0.84 (3.57)**	-0.25 (2.27)*	-0.21 (2.41)*	-0.76 (2.38)*	-0.78 (1.71)§
TOT		0.93 (0.36)		0.57 (0.33)		-1.44 (6.33)**		0.13 (2.36)*		-0.14 (0.58)
	Diagnostic Statistics									
LRS	166.69 [38.93]	189.96 [38.93]	75.16 [13.28]	101.84 [13.28]	41.45 [23.21]	53.33 [23.21]	34.84 [11.34]	38.75 [11.34]	36.50 [20.09]	38.19 [20.09]
Number of observations	506	506	115	115	115	115	69	69	207	207

Notes:

1. Figures in parentheses ( ) are absolute t-ratios. §, *, ** indicate that a coefficient is significant at the 10 percent, 5 percent and 1 percent level respectively.
2. Likelihood Ratio Statistic (LRS) is the test for serial correlation; the numbers in brackets [ ] are the critical values. The results provided are based on heteroskedastic and correlated regressions, with group autocorrelation. Such regressions are supported by the LRS.

Table 8A

Two Steps Generalised Least Squares and Maximum Likelihood Estimation

	Dependent variable: Current account/GDP									
	All Countries		**Africa**		**East Asia**		**South Asia**		**Latin America**	
Explanatory variables:	**(i a)**	**(i b)**	**(ii a)**	**(ii b)**	**(iii a)**	**(iii b)**	**(iv a)**	**(iv b)**	**(v a)**	**(v b)**
ca_{-1}	0.53 (2.25)*	0.60 (3.74)**	0.29 (2.09)*	0.26 (2.93)*	0.62 (2.77)*	0.57 (2.73)*	0.44 (3.79)**	0.45 (4.95)**	0.65 (5.88)**	0.59 (3.38)**
w	0.57 (2.95)*	0.55 (2.67)*	0.69 (3.47)*	0.46 (1.87)§	0.62 (2.60)*	0.66 (2.71)*	-0.28 (2.38)*	0.29 (2.14)*	0.49 (4.65)**	0.68 (3.73)**
y	-0.18 (2.48)*	-0.14 (4.64)**	-0.19 (3.23)**	-0.17 (1.91)§	-0.35 (7.58)**	-0.33 (6.68)**	-0.17 (1.82)§	-0.19 (1.67)§	-0.23 (9.04)**	-0.21 (7.24)**
p	0.03 (1.20)	-0.03 (2.16)*	0.01 (0.95)	-0.01 (0.64)	0.01 (0.31)	0.01 (0.51)	-0.03 (1.07)	-0.02 (1.25)	-0.06 (6.09)**	-0.05 (5.09)**
$\boldsymbol{d_x}$	-0.19 (1.98)*	-0.15 (1.93)§	-0.15 (2.75)*	-0.19 (1.74)§	-0.10 (2.63)*	-0.18 (2.26)*	-0.12 (2.20)*	-0.14 (2.40)*	-0.23 (1.73)§	-0.29 (3.45)**
d_m	0.38 (2.07)*	0.37 (1.92)§	0.44 (7.44)**	0.53 (4.44)**	0.25 (4.42)**	0.38 (2.17)*	0.29 (1.74)§	0.21 (3.72)**	0.87 (1.70)§	0.65 (3.76)**
lib	-0.89 (2.39)*	-0.90 (2.17)*	-0.65 (2.77)*	-0.48 (3.12)**	-0.34 (2.55)*	-0.39 (2.63)*	-0.67 (2.07)*	-0.71 (2.12)*	-1.02 (2.23)*	-1.16 (2.49)*
$y \times lib$	-0.22 (1.84)§	-0.19 (2.39)*	0.18 (2.35)*	-0.29 (5.04)**	-0.30 (6.74)**	-0.33 (6.01)**	-0.18 (1.82)§	-0.24 (2.17)*	-0.21 (1.72)§	-0.28 (2.03)*
TOT		-0.08 (1.58)		-0.04 (2.12)*		-0.10 (2.25)*		-0.06 (1.34)		-0.13 (0.87)
	Diagnostic Statistics									
LRS	287.12 [38.93]	204.83 [38.93]	47.21 [18.31]	40.47 [18.31]	32.77 [23.21]	39.24 [23.21]	38.40 [11.34]	22.24 [11.34]	58.62 [20.09]	55.46 [20.09]
Number of observations	506	506	115	115	115	115	69	69	207	207

Notes:

1. Figures in parentheses ( ) are absolute t-ratios. §, *, ** indicate that a coefficient is significant at the 10 percent, 5 percent and 1 percent level respectively.
2. Likelihood Ratio Statistic (LRS) is the test for serial correlation; the numbers in brackets [ ] are the critical values. The results provided are based on heteroskedastic and correlated regressions, with group autocorrelation. Such regressions are supported by the LRS.

Table 8B

Two Steps Generalised Least Squares and Maximum Likelihood Estimation

	Dependent variable: Current account growth									
	All Countries		**Africa**		**East Asia**		**South Asia**		**Latin America**	
Explanatory variables:	**(i a)**	**(i b)**	**(ii a)**	**(ii b)**	**(iii a)**	**(iii b)**	**(iv a)**	**(iv b)**	**(v a)**	**(v b)**
cag_{-1}	-0.11 (0.68)	-0.04 (0.96)	-0.04 (0.43)	-0.01 (0.94)	0.06 (0.83)	0.05 (0.57)	-0.44 (4.66)**	-0.39 (2.24)**	0.03 (0.54)	0.04 (0.64)
w	0.48 (2.81)*	0.50 (2.33)*	0.36 (2.62)*	0.39 (2.63)*	0.60 (4.28)*	0.41 (2.37)*	0.43 (1.85)§	0.39 (1.96)*	0.36 (4.10)**	0.37 (4.04)**
y	-0.13 (2.34)*	-0.17 (1.73)§	-0.18 (1.95)§	-0.18 (1.71)§	-0.23 (3.18)**	-0.20 (4.00)**	-0.14 (2.10)*	-0.15 (4.39)**	-0.20 (3.47)**	-0.19 (5.62)**
p	0.01 (0.84)	-0.01 (0.79)	-0.01 (0.92)	0.02 (0.35)	0.13 (7.42)**	0.06 (2.95)*	0.02 (1.04)	0.03 (1.51)	0.10 (2.12)*	0.13 (2.34)*
$\boldsymbol{d_x}$	-0.19 (2.87)*	-0.17 (1.76)§	-0.13 (0.69)	-0.14 (1.85)§	-0.16 (0.78)	-0.17 (1.62)	-0.12 (1.84)§	-0.14 (2.76)*	-0.19 (2.01)*	-0.20 (1.56)
d_m	0.35 (1.97)§	0.34 (2.24)*	0.28 (2.43)*	0.22 (2.25)*	0.27 (2.30)*	0.19 (4.51)**	0.17 (2.11)*	0.26 (2.54)*	0.85 (2.06)*	0.59 (1.78)§
lib	-0.69 (2.51)*	-0.70 (2.09)*	-1.06 (1.96)*	-0.64 (2.85)*	-0.31 (2.32)*	-0.22 (2.17)*	-0.95 (2.63)*	-.62 (2.48)*	-0.72 (2.13)*	-0.56 (2.23)*
$y \times lib$	-0.31 (2.81)*	-0.33 (2.93)*	-0.32 (2.67)*	-0.30 (2.08)*	-0.27 (4.26)**	-0.35 (2.63)*	-0.12 (1.94)§	-0.18 (2.13)*	-0.17 (3.47)**	-0.18 (2.09)*
TOT		-0.01 (2.54)*		-0.03 (0.38)		0.09 (1.76)§		0.54 (2.14)*		-0.05 (0.66)
	Diagnostic Statistics									
LRS	190.42 [38.93]	211.06 [38.93]	34.71 [23.21]	33.00 [23.21]	56.22 [23.21]	33.67 [23.21]	19.64 [11.34]	55.28 [11.34]	74.23 [20.09]	73.66 [20.09]
Number of observations	506	506	115	115	115	115	69	69	207	207

Notes:

1. Figures in parentheses ( ) are absolute t-ratios. §, *, ** indicate that a coefficient is significant at the 10 percent, 5 percent and 1 percent level respectively.
2. Likelihood Ratio Statistic (LRS) is the test for serial correlation. The numbers in parentheses are the critical values. The results provided are based on heteroskedastic and correlated regressions, with group autocorrelation. Such regressions are supported by the LRS.

Table 9A

Two Steps Generalised Least Squares and Maximum Likelihood Estimation

	Dependent variable: trade balance/GDP					
Explanatory variables:	**All Countries**		**Low-Moderate**		**High-Very High**	
	(i a)	**(i b)**	**(ii a)**	**(ii b)**	**(iii a)**	**(iii b)**
tb_{-1}	0.46 (2.06)*	0.78 (5.84)**	0.63 (4.73)**	0.67 (2.03)*	0.72 (4.71)**	0.49 (3.72)**
w	0.99 (2.58)*	0.89 (2.85)*	0.93 (7.55)**	0.80 (5.57)**	0.74 (2.91)*	0.73 (2.92)*
y	-0.14 (2.25)*	-0.23 (3.37)**	-0.19 (2.82)*	-0.22 (2.41)*	-0.10 (2.59)*	-0.16 (1.83)§
p	-0.01 (1.26)	-0.01 (2.85)*	-0.05 (7.07)**	-0.07 (4.36)**	-0.01 (0.43)	-0.01 (1.06)
d_x	-0.19 (3.41)**	-0.22 (2.45)*	-0.16 (9.39)**	-0.14 (11.05)**	-0.17 (1.69)§	-0.21 (2.17)*
d_m	0.22 (4.78)**	0.37 (4.18)**	0.29 (3.67)**	0.18 (12.39)**	0.69 (2.60)*	0.67 (6.12)**
lib	-1.20 (2.45)*	-1.11 (2.82)*	-0.68 (5.59)**	-0.49 (3.88)**	-1.74 (2.38)*	-1.77 (2.20)*
$y \times lib$	-0.57 (3.57)**	-0.32 (6.10)**	-0.38 (2.82)*	-0.20 (4.39)**	-0.27 (2.61)*	-0.25 (2.85)*
TOT		-0.32 (2.85)*		-0.17 (1.78)§		-0.51 (5.02)**
	Diagnostic Statistics					
LRS	202.94 [36.19]	194.97 [36.19]	91.40 [29.14]	110.65 [29.14]	76.61 [16.81]	75.30 [16.81]
Number of observations	460	460	299	299	161	161

Notes:

1. Figures in parentheses ( ) are absolute t-ratios. §, *, ** indicate that a coefficient is significant at the 10 percent, 5 percent and 1 percent level respectively.
2. Likelihood Ratio Statistic (LRS) is the test for serial correlation. The numbers in brackets [ ] are the critical values. The results provided are based on heteroskedastic and correlated regressions, with group autocorrelation. Such regressions are supported by the LRS.
3. In this set of estimations Indonesia and Zambia are not included because they switched regimes during the period.

Table 9B

Two Steps Generalised Least Squares and Maximum Likelihood Estimation

	Dependent variable: trade balance growth					
Explanatory variables:	**All Countries**		**Low-Moderate**		**High-Very High**	
	(i a)	**(i b)**	**(ii a)**	**(ii b)**	**(iii a)**	**(iii b)**
tbg_{-1}	0.03 (2.27)*	0.03 (2.36)*	0.04 (2.70)*	0.16 (2.92)*	-0.07 (1.02)	-0.10 (1.32)
w	0.81 (2.02)*	0.88 (2.18)*	0.97 (8.37)**	0.90 (15.11)**	0.53 (2.23)*	0.40 (2.03)*
y	-0.21 (2.28)*	-0.20 (3.19)**	-0.25 (2.30)*	-0.26 (2.29)*	-0.16 (2.17)*	-0.19 (2.28)*
p	0.11 (0.97)	0.10 (0.96)	0.54 (16.05)**	0.51 (6.26)**	0.01 (0.95)	0.01 (0.57)
d_x	-0.21 (2.23)*	-0.25 (2.33)*	-0.10 (4.27)**	-0.12 (12.34)**	-0.24 (2.25)*	-0.25 (2.82)*
d_m	0.48 (2.66)*	0.82 (2.75)*	0.31 (3.66)**	0.30 (9.56)**	0.52 (2.01)*	0.45 (2.19)*
lib	-1.17 (2.82)*	-1.83 (3.56)**	-0.59 (2.39)*	-0.87 (2.25)*	-2.65 (2.53)*	-3.38 (2.81)*
$y \times lib$	-0.20 (2.47)*	-0.23 (2.53)*	-0.22 (2.65)*	-0.21 (1.98)*	-0.19 (2.18)*	-0.22 (2.37)*
TOT		0.27 (0.49)		0.39 (2.38)*		-0.42 (1.62)
	Diagnostic Statistics					
LRS	249.13 [36.19]	233.38 [36.19]	55.71 [29.14]	53.27 [29.14]	34.79 [16.81]	76.64 [16.81]
Number of observations	460	460	345	345	161	161

Notes:

1. Figures in parentheses ( ) are absolute t-ratios. §, *, ** indicate that a coefficient is significant at the 10 percent, 5 percent and 1 percent level respectively.
2. Likelihood Ratio Statistic (LRS) is the test for serial correlation. The numbers in parentheses are the critical values. The results provided are based on heteroskedastic and correlated regressions, with group autocorrelation. Such regressions are supported by the LRS.
3. In this set of estimations Indonesia and Zambia are not included, because they switched regimes during the period.

Table 10A

Two Steps Generalised Least Squares and Maximum Likelihood Estimation

	Dependent variable: Current account/GDP					
Explanatory variables:	**All Countries**		**Low-Moderate**		**High-Very High**	
	(i a)	**(i b)**	**(ii a)**	**(ii b)**	**(iii a)**	**(iii b)**
ca_{-1}	0.53 (2.29)*	0.48 (2.53)*	0.73 (3.90)**	0.55 (2.80)*	-0.02 (1.75)§	-0.03 (2.10)*
w	0.80 (2.48)**	0.72 (2.20)*	0.83 (10.65)**	0.77 (3.18)**	0.38 (4.14)**	0.30 (4.69)**
y	-0.18 (4.08)**	-0.13 (4.20)**	-0.23 (18.00)**	-0.22 (13.71)**	-0.19 (2.12)*	-0.16 (1.72)§
p	-0.03 (2.84)*	-0.03 (3.20)**	-0.05 (2.55)*	-0.02 (1.06)	-0.03 (3.09)**	-0.03 (3.01)**
d_x	-0.14 (2.20)*	-0.18 (2.65)*	-0.10 (1.78)§	-0.13 (1.65)§	-0.16 (1.93)§	-0.19 (1.70)§
d_m	0.16 (2.09)*	0.20 (2.39)*	0.23 (9.50)**	0.19 (2.59)*	0.21 (4.52)**	0.26 (4.09)**
lib	-1.50 (2.41)*	-1.14 (2.06)*	-0.57 (4.52)**	-0.55 (2.54)*	-1.79 (2.34)*	-1.66 (6.16)**
$y \times lib$	0.17 (2.14)*	-0.19 (2.23)*	-0.26 (2.15)*	-0.31 (5.21)**	-0.24 (1.81)§	-0.19 (3.47)**
TOT		-0.01 (1.85)§		-0.14 (0.67)		-0.04 (0.62)
	Diagnostic Statistics					
LRS	211.37 [36.19]	204.37 [36.19]	60.37 [29.14]	175.26 [29.14]	37.30 [16.81]	60.41 [16.81]
Number of observations	460	460	345	345	161	161

Notes:

1. Figures in parentheses ( ) are absolute t-ratios. §, *, ** indicate that a coefficient is significant at the 10 percent, 5 percent and 1 percent level respectively.
2. Likelihood Ratio Statistic (LRS) is the test for serial correlation. The numbers in brackets [ ] are the critical values. The results provided are based on heteroskedastic and correlated regressions, with group autocorrelation. Such regressions are supported by the LRS.
3. In this set of estimations Indonesia and Zambia are not included because they switched regimes during the period.

Table 10B

Two Steps Generalised Least Squares and Maximum Likelihood Estimation

	Dependent variable: Current account growth					
	All Countries		**Low-Moderate**		**High-Very High**	
Explanatory variables:	**(i a)**	**(i b)**	**(ii a)**	**(ii b)**	**(iii a)**	**(iii b)**
cag_{-1}	-0.11 (2.57)*	-0.01 (0.91)	-0.21 (2.76)*	-0.18 (2.22)*	-0.04 (0.60)	-0.03 (0.26)
w	0.57 (3.77)**	0.63 (7.06)**	0.64 (11.50)**	0.68 (16.22)**	0.46 (1.77)§	0.33 (1.77)§
y	-0.17 (4.13)**	-0.14 (5.40)**	-0.16 (15.19)**	-0.22 (3.72)**	-0.15 (1.98)*	-0.13 (2.15)*
p	0.06 (0.75)	-0.02 (0.22)	0.02 (2.09)*	0.03 (3.14)**	-0.01 (0.15)	-0.04 (0.79)
d_x	-0.13 (2.10)*	-0.13 (1.88)§	-0.11 (1.22)	-0.14 (2.40)*	-0.15 (1.07)	-0.11 (1.79) §
d_m	0.20 (2.58)*	0.18 (2.27)*	0.17 (2.34)*	0.20 (7.51)**	0.26 (1.87)§	0.31 (2.26)*
lib	-1.02 (2.71)*	-1.08 (2.04)*	-0.49 (2.22)*	-0.61 (8.22)**	-1.63 (2.05)*	-1.96 (2.80)*
$y \times lib$	-0.16 (2.71)*	-0.16 (1.95)§	-0.29 (2.34)*	-0.19 (2.55)*	-0.22 (2.67)*	-0.19 (2.62)*
TOT		-0.02 (0.99)		0.03 (2.42)*		-0.01 (0.74)
	Diagnostic Statistics					
LRS	176.73 [36.19]	179.03 [36.19]	51.36 [29.14]	52.16 [29.14]	38.93 [16.81]	35.59 [16.81]
Number of observations	460	460	345	345	161	161

Notes:

1. Figures in parentheses ( ) are absolute t-ratios. §, *, ** indicate that a coefficient is significant at the 10 percent, 5 percent and 1 percent level respectively.
2. Likelihood Ratio Statistic (LRS) is the test for serial correlation. The numbers in brackets [ ] are the critical values. The results provided are based on heteroskedastic and correlated regressions, with group autocorrelation. Such regressions are supported by the LRS.
3. In this set of estimations Indonesia and Zambia are not included because they switched regimes during the period.

Table 11

Restriction Test for Equality of Coefficients across Regions and Trade Policy Regimes

Coefficient	*tb*	*tbg*	*ca*	*cag*
Regional Disaggregation				
d_x	11.46 [9.49]	9.68 [9.49]	10.52 [9.49]	15.18 [9.49]
d_m	9.64 [9.49]	16.18 [9.49]	15.80 [9.49]	10.96 [9.49]
lib	9.74 [9.49]	13.36 [9.49]	30.59 [9.49]	15.56 [9.49]
$y \times lib$	13.20 [9.49]	8.68 [7.78]§	13.08 [9.49]	9.27 [7.78]§
$d_x, d_m, lib, y \times lib$	38.00 [26.30]	36.60 [26.30]	40.52 [26.30]	24.49 [23.54]§
Disaggregation according to the Degree of Protection				
d_x	6.41 [5.99]	6.70 [5.99]	6.24 [5.99]	12.03 [5.99]
d_m	11.85 [5.99]	12.18 [5.99]	9.38 [5.99]	6.16 [5.99]
lib	18.40 [5.99]	17.60 [5.99]	27.12 [5.99]	13.80 [5.99]
$y \times lib$	7.94 [5.99]	5.83 [4.61]§	7.47 [5.99]	5.45 [4.61]§
$d_x, d_m, lib, y \times lib$	26.00 [15.51]	15.22 [13.36]§	23.70 [15.51]	15.76 [15.51]

Notes:

1. Figures in brackets [ ] are critical values of χ^2.
2. § indicates that a test is significant at the 10 per cent level. The other coefficients are all significant at the 5 per cent level.

APPENDIX

Data Definitions and Sources

Export Duties (d_x): Export duties (% of exports); includes all levies collected on goods at the point of export. Source: World Bank, *World Development Indicators* (WDI), 1999.

Import Duties (d_m): Import duties (% of imports). Import duties comprise all levies collected on goods at the point of entry into the country. They include levies for revenue purposes or import protection, whether on a specific or ad-valorem basis, providing they are restricted to imported products. Data are shown for central government only. Source: World Bank, *World Development Indicators* (WDI), 1999.

Rate of Change of Relative Prices (p_x and p_m): used in the export and import demand functions is measured by the real exchange rate (RER) defined as (EP_d / P_f), where E is the nominal exchange rate measured as the foreign price of domestic currency and (P_d / P_f) is the ratio of domestic to foreign prices. Data for the RER for Colombia, Costa Rica, Ecuador, India, Indonesia, Malaysia, Mexico, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, and Tunisia are from Bahmani-Oskoowee and Mirzai (2000). The RERs for the remaining countries are constructed from the IMF's *International Financial Statistics* (various issues).

Income Growth (y): GDP; annual percentage growth (constant 1995 US$). Source: World Bank, *World Development Indicators* (WDI), 1999.

World Income Growth (w): World GDP; annual percentage growth (constant 1995 US$). Source: World Bank, *World Development Indicators* (WDI), 1999. The activity variable is defined as the difference between world GDP and country GDP, that is: $WY_i = WorldGDP - GDP_i$

Terms of Trade (*TOT*): the so-called "net barter" terms of trade, is defined as the ratio of the export unit value index to the import unit value index. Source: World Bank, *World Development Indicators* (WDI), 1999.

Table A1

Classification of Countries According to the Heritage Foundation Trade Policy Grading Scale: 1995-2000

Level of Protectionism	Criteria	Countries	
Very low	ATR ≤ 4 percent and/or very low non-tariff barriers.		
Low	4 < ATR ≤ 9 percent and/or low non-tariff barriers.	Chile Paraguay	Uruguay
Moderate	9 < ATR ≤ 14 percent and/or moderate non-tariff barriers.	Colombia Costa Rica Ecuador Korea Malaysia Mexico	Philippines Thailand Sri Lanka Venezuela Zambia
High	14 < ATR ≤ 19 percent and/or high non-tariff barriers.	Dominican Rep. Indonesia	Morocco
Very high	19 percent ≤ ATR and/or very high non-tariff barriers that virtually close the market to imports	Cameroon India Malawi	Pakistan Tunisia

Source: Heritage Foundation Index of Economic Freedom (see Johnson and Sheehy, 1995; Johnson *et al* 1998a, 1998b; Johnson and Holmes, 1998, O'Driscoll *et al*, 1999).

Note: ATR denotes average tariff rate. The validity of the Heritage's classification of the countries was confirmed by comparing with the IMF (1998) trade policy rating (for those countries for which the scores were available).

Table A2

Dichotomous Classification of Countries According to Trade Policy Regime

Classification/Countries		
Low-Moderate		***High-Very high***
Chile	Paraguay	Cameroon
Colombia	Philippines	Dominican Republic
Costa Rica	Sri Lanka	India
Ecuador	Thailand	Malawi
Korea	Uruguay	Morocco
Malaysia	Venezuela	Pakistan
Mexico		Tunisia

Note: The classification presented in this table is based on the Heritage Foundation criteria in terms of tariffs and non-tariffs barriers provided in Table A1. The background information is based on the analysis presented in Section 2.