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Trade Liberalisation and Manufacturing in Bolivia

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TRADE LIBERALISATION AND MANUFACTURING IN BOLIVIA

I. INTRODUCTION

The Growth of Trade Liberalisation in Latin America

The past decade in Latin America has seen sweeping changes in economic policies. Previously protected economies with highly interventionist governments have been opened up to foreign competition and have reduced the role of the state through cuts in government expenditure and extensive privatisation. This worldwide trend, which has been strongly supported by the multilateral agencies, has been particularly marked in Latin America.

The context of these policy reversals is the aftermath of the debt crisis of the early 1980s which brought to a head the growing disillusion with the import substituting industrialisation strategies which had characterised the region since the 1950s. The drying up of private commercial bank loans to the region left it vulnerable to the insistence of the IMF and the World Bank on a major shift in policy. This coincided with increased domestic recognition of the limitations of import substitution and growing awareness of the success of the export oriented industrialisation strategies of the East Asian Newly Industrialised Countries (NICs).

Table I. 1: Overview of Trade Liberalisation in Latin America

		Maximum Tariff		Quantitative Restriction[a]	
	Start of Liberalisation	Initial Year (%)	End 1992 (%)	Initial Year (%)	Post Reform
Argentina	1989	65	30	60	4
Bolivia	1985	150	10	90	2
Brazil	1990	105	35	34	1
Colombia	1990	100	20	93	14
Costa Rica	1986	100	27	1	1
Chile	1985	35	11	0	0
Ecuador	1985	290	35	38	15
Mexico	1985	100	20	38	2
Peru	1990	108	25	100	5
Uruguay	1983	75	45	0	0
Venezuela	1989	135	20	65	10

Note: [a] Coverage of quantitative restrictions either as a percent of total imports or of total tariff code items.

Sources: Agosín and Ffrench-Davis (1993), Table 1; IMF (1992), Tables 11 and 13.

The main elements of the policy reforms which have taken place in Latin American can be enumerated under three main headings. First, there has been a shift to more outward-oriented policies, characterised by sweeping reductions in both tariff and non-tariff barriers and more competitive real exchange rates. Although Argentina, Chile and Uruguay had embarked on trade liberalisation under the military regimes of the 1970s, the latest phase in trade liberalisation began in the mid-eighties when Mexico, Bolivia, Ecuador and Chile (again) began to reduce barriers, closely followed by Costa Rica (see Table I.1). By the 1990s these were all classified by the IMF as 'open economies' while other Latin American countries which began to liberalise slightly later were considered 'relatively open'.

Secondly, there has been considerable liberalisation of domestic markets in many Latin American countries. This has been most widespread in the case of financial markets where a combination of reduced inflation and deregulation has led to positive real interest rates often at very high levels (Griffith-Jones et al, 1994, Table 3.7). There have been changes in the labour market in a number of countries which have made it easier for employers to hire and fire workers. Product markets have also been liberalised with removal of price controls and elimination of government subsidies both acting to reduce government induced price 'distortions'.

Finally there has been a radical change in the economic role of the state in most Latin American economies. Budget deficits have been reduced or eliminated in most countries in the 1990s through a combination of cuts in expenditure and in some cases tax reforms which increased government revenue. Tax revenues have been supplemented by the sale of public enterprises, with Chile, Mexico and Argentina taking the lead (see Table I.2)

Advocates of liberalisation claim that there is now clear evidence that the economic situation in Latin America is turning around after the 'lost decade' of the 1980s. Rates of inflation have been brought down; a decade after the debt crisis broke, capital is again flowing in to the region; and growth is picking up (*The Economist*, 26 November 1994, pp. 73-7).

Does this indicate that the changes in policy which the Latin American countries introduced have been successful and that the region is about to embark on a period of rapid and sustained economic growth? In order to establish this, it is necessary to examine the ways in which changes in policy have indeed contributed to an improvement in economic performance. In the absence of such an analysis, it might be claimed that improved performance is merely a reflection of the additional resources which have been made available to countries as a reward for adopting liberalisation policies, rather than being a result of the policies themselves.

Table I.2: Value of Privatisation Transactions in Latin America, 1985-1992 (mn.US$)

	Amount
Argentina	10,791
Bolivia	4
Brazil	3,998
Colombia	876
Chile	1,345
Mexico	22,671
Peru	267
Venezuela	2,314

Source: Devlin (1994), Table 7.3; Bolivian figure includes privatisation in first half of 1993 (author's investigation).

The time is therefore ripe for detailed studies of the impact of various policy reforms on the Latin American economies. The present Research Paper seeks to contribute to such an analysis by focusing on the impact of one of the key reforms - trade liberalisation - on the Bolivian economy, and particularly on the manufacturing sector, in the belief that it is only by such empirical studies that it is possible to move beyond the *a priori* claims of neo-classical economic theory on the one hand, and the generalised condemnation of structural adjustment often found amongst the critics on the other.

The Choice of Case Study

Why Bolivia?

The choice of Bolivia as a case study may at first sight appear strange. It would perhaps have been more obvious to have selected a larger country such as Mexico, or a better known example such as Chile. Much of the discussion of trade liberalisation in Latin America has focused on these two cases.

However, neither Mexico with its long border with the United States and its large domestic market, nor Chile with its highly urbanised and relatively well-educated population, are typical of Latin America, and even less of the Third World as a whole. In contrast, Bolivia's income level and human resource development is closer to that of sub-Saharan Africa and some Asian countries. It is possible, therefore, that its experience has more in common with that of other low income countries than do the semi-industrialised Latin American countries.

Many of the problems of market failure which development economists have long used to justify state intervention and protection are particularly acute in Bolivia. The domestic market is limited, with a total population of only 6 million, many of whom in the rural areas participate only marginally as consumers. The industrial sector is small and technologically backward. Much

of the population is illiterate and educational indices are low. In addition, Bolivia is a landlocked country, with an inadequate internal transport infrastructure. There are strong grounds for questioning the sufficiency of liberalisation policies as a means of promoting economic growth under such conditions. Conversely, if it can be shown that 'market friendly' policies have worked in Bolivia, then this could well provide lessons for other low income countries.

A second reason for selecting Bolivia as a case study is the radical nature of the trade reform which was introduced there in 1985. The maximum tariff level has been reduced from 150% to 10% and quantitative restrictions (QRs) on imports totally eliminated. Within the first year of trade liberalisation, tariffs were brought down to below 20% and most QRs removed, a process which took three or four years in Chile and Mexico (Meller, 1992, Table 6.1).

In view of the significance of the Bolivian experience, it is surprising that it has not been more extensively studied. The short term stabilisation policies introduced in 1985 have indeed received considerable attention outside Bolivia, and have been hailed as an example of successful orthodox stabilisation. However, the changes in trade policy and the longer term success of structural adjustment have received relatively little attention.

Why Trade Liberalisation?

The decision to focus on trade liberalisation, as opposed to other changes in economic policy, was based on two considerations. First, there is a wealth of theoretical and empirical literature which discusses the relative merits of outward as opposed to inward-oriented trade policies, and the expected gains to be achieved through trade liberalisation. This makes it possible to formulate quite precise hypotheses which can be tested in the Bolivian case (see Sections IV-VI).

Secondly, the measures taken to liberalise trade were very central to the policy reforms carried out in Bolivia. Some other measures, such as the elimination of the fiscal deficit and the launching of privatisation, played a less significant role and came much later. Others, such as the changes in labour legislation and liberalisation of the domestic capital market, were introduced at the same time as trade was liberalised and these are touched upon at various points in the study; however, the central focus remains the impact of trade liberalisation.

Why Manufacturing?

A final decision was to focus the study on the impact of trade liberalisation on the manufacturing sector. Historically this has always been a relatively small sector of the Bolivian economy compared to minerals and hydrocarbons which have dominated (legal) exports and agriculture which has been the major source of employment. However, sustained economic growth in Bolivia and increased

levels of employment can only be achieved with a dynamic manufacturing sector. While in the short term, income levels may be increased by an expansion of mineral exports, these will not be able to provide employment possibilities for the bulk of the population because of its relatively capital-intensive nature, while the ability of agriculture to absorb labour is also severely constrained as is reflected in the growing trend to migrate to the urban areas. The impact of trade liberalisation on manufacturing, therefore, is seen as being central to Bolivia's economic prospects.

Background to the Bolivian Trade Liberalisation

The adoption of the New Economic Policy (NEP) by the Movimiento Nacional Revolucionario (MNR) government headed by President Paz Estenssoro in August 1985 marked the end of a phase in Bolivian economic policy which began with the 1952 Revolution that brought Paz Estenssoro and the MNR to power for the first time.

The 1952 Revolution broke the power of the traditional oligarchy through the nationalisation of the tin mines, which formed the backbone of the Bolivian economy and the land reform which abolished feudal relations and expropriated the large landowners of the Altiplano. Through the tin nationalisation, it gave the state a central role in the economy, controlling the bulk of the country's exports and a significant part of the investible surplus.

However, despite these revolutionary measures, key features of the Bolivian economy remained unchanged. The income levels of the bulk of the Bolivian peasantry remained low so that they constituted only a very limited market for manufactured goods. The economic structure therefore changed very little and this was reflected in exports which continued to rely overwhelmingly on primary commodities, mainly tin and, increasingly, oil and gas.[1]

Despite the state's control over these key export sectors, surpluses were not channelled into productive investment and government finances were never adequate to fund a high level of public investment. In the 1950s and 1960s Bolivia depended partly on aid flows from the USA. In the 1970s, as in other Latin American countries, Bolivia's foreign borrowing grew rapidly, although compared to other Latin American countries a much higher proportion was in the form of bilateral and multilateral government loans.

The first half of the 1980s was a period of severe economic crisis in Bolivia. Capital inflows, which had sustained the boom of the 1970s, declined sharply, while repayments continued to increase. The United States stopped providing aid to Bolivia during the dictatorship of General García Meza, and other foreign loans dried up as a result of the international debt crisis. Consequently, between

1982 and 1985, there was a substantial net transfer of resources, equivalent to about 3.5% of GDP from Bolivia to its foreign creditors (Morales, 1988, p.27).

The economic crisis was characterised by falling GDP, rising unemployment, a growing budget deficit, a deteriorating balance of payments situation and accelerating inflation (see Table I.3). It was accompanied by considerable political instability and increased social mobilisation reflected in strikes and demonstrations (Dunkerley, 1990).

Table I.3: Key Economic Indicators, 1980-1985

	GDP Growth (% p.a.)	Unemployment (%)	Budget Deficit (% GDP) [a]	Balance of Payments (US$ mn) [b]	Inflation (% p.a.) [c]
1980	-1.4	5.8	7.8	321.3	47.2
1981	0.9	9.7	6.9	-129.2	32.1
1982	-4.4	10.5	15.2	-43.5	123.5
1983	-4.5	14.2	18.7	-101.2	275.6
1984	-0.6	15.1	25.1	-37.7	1,281.4
1985	-1.0	18.0	10.1	-373.6	11,749.6

Notes: [a] Consolidated Non-financial Public Sector Deficit
[b] Balance on Current and Long-Term Capital Account
[c] Change in Consumer Price Index
Sources: Muller & Asociados (1992); World Bank (1991)

Between 1980 and 1985 GDP fell by more than 10% and GDP *per capita* by almost a fifth. Open unemployment more than tripled and inflation accelerated to hyperinflationary levels unprecedented in any country in peace time. The public sector deficit spiralled until it accounted for a quarter of Bolivia's GDP in 1984, and the balance of payments was consistently in the red.

The crisis can be seen as the culmination of the Bolivian strategy of state capitalism with indebted industrialisation. The model was unable to generate either the fiscal revenues or the export earnings which would have made it sustainable. When the new inflows of capital began to dry up at the end of the 1970s, the need to transfer resources abroad became pressing. Successive governments attempted to introduce stabilisation packages during the early 1980s, but none of these lasted.

Economic conditions deteriorated further and the fiscal deficit increased with rising inflation. As different groups attempted to maintain their income, while the overall size of the cake shrank, political and social conflicts intensified. External difficulties were further intensified by the deteriorating terms of trade. In 1984 payments to foreign creditors were suspended due to a lack of funds,

and in 1985 the government was forced to bring forward the elections as inflation accelerated.

The New Economic Policy[2]

The Paz Estenssoro Government which came to power in August 1985 immediately introduced a combined stabilisation and structural adjustment package known as the New Economic Policy. This involved an orthodox stabilisation policy (in sharp contrast to the heterodox policies adopted by other Latin American countries at around the same time) and extensive economic reforms.

The Main Policy Measures

In order to bring inflation under control, the government adopted a sharply contractionary fiscal and monetary policy, cutting government employment by ten per cent, freezing wages in the public sector, and halting public investment for a year. Government revenues were increased by raising petrol prices to international levels and increasing the tariffs of public utilities.

In addition, the foreign exchange market was unified with the introduction of a single floating exchange rate, resulting in an immediate devaluation of 93% and the virtual elimination of the black market premium. Restrictions on inflows and outflows of foreign capital were also removed.

The longer term structural adjustment components of the NEP, in line with those introduced elsewhere in Latin America, had three major pillars – a shift to a more outward-oriented economy; liberalisation of domestic markets; and a reduction in the role of the state (Aguirre et al, 1992, pp. 28-35).

In order to bring about a more outward-oriented economy, virtually all quantitative restrictions and non-tariff barriers were eliminated and tariffs reduced significantly (see Section III below for further details). Subsequently, in 1987, a new tax incentive for exports was created. The new exchange rate system, which has been characterised as a 'dirty float', was also designed to encourage greater openness by maintaining a relatively stable real exchange rate and avoiding extreme levels of overvaluation which had characterised the pre-1985 period.

The domestic capital, labour and goods markets were also liberalised. Key elements of the reform package included deregulation of the domestic financial system and freeing of interest rates. Similarly in the labour market, employment protection for workers was reduced and wage indexation eliminated. A further step was taken towards a market economy through the deregulation of most prices, particularly agricultural prices, and the removal of subsidies.

The role of the state in the economy was reduced through cuts in government expenditure and the sacking of workers in state enterprises, particularly the state mining company, COMIBOL, where three quarters of the labour force was dismissed. Privatisation efforts, however, were slow to get off the ground.

As a first step, the Bolivian Development Corporation was broken up and its productive enterprises handed over to the Regional Development Corporations. However, when the new Sánchez de Losada government took office in 1993, very few state firms had been privatised.

These measures were seen as representing a decisive break with the state capitalist model that had characterised Bolivian economic development since 1952. The intention was that in the future, market forces should play the key role in determining the allocation of resources.

Impact of the NEP

The success of the New Economic Policy in stabilising the economy was quite remarkable. By 1987 the annual rate of inflation had been brought down to less than 20% and the public sector deficit was reduced to under five per cent of GDP by the late 1980s.

The economy has become significantly more outward-oriented than it was in the first half of the 1980s or indeed in the late 1970s before the economic crisis.[3] The index of openness increased sharply in 1986 and rose again in the early 1990s (see Table I.4).

The clearest indicator of the impact of domestic liberalisation can be seen in the capital markets. Real interest rates, which were negative during the mid-eighties, rose to high positive levels from 1987 onwards (see Table I.4).

There is also evidence that liberalisation has led to greater flexibility in the labour market. The value of the minimum wage in the late 1980s was about a third of its level in the early 1980s in real terms (Afcha et al, 1992, Table A-6). As a result, average industrial incomes in the late 1980s were five times the minimum wage (Montaño and Villegas, 1993, Table IV-18) suggesting that minimum wage legislation had little impact on wages. There was also a significant increase in the proportion of the labour force employed on temporary contracts (Montaño and Villegas, 1993, Table IV-21).

Distortions in the goods market were reduced by trade liberalisation and the removal of price controls and subsidies. The low and uniform level of protection in Bolivia by the late 1980s ensured that most prices were close to, or below, international levels.

Finally, the size of the state sector has been substantially reduced compared to the early 1980s. The share of public expenditure in GDP fell from over 40% in the first half of the decade to just over a quarter in the late 1980s and early 1990s (see Table I.4). This was paralleled by a significant reduction in public sector employment (Arauco, 1988).

Table I.4: Indicators of Liberalisation, 1980-91

	Openness (% GDP)[a]	Real Interest Rate (% p.a.)	Public Sector Expenditure (% GDP)
1980	45.8	3.2	48.3
1981	49.6	5.5	38.9
1982	44.1	-63.4	49.4
1983	44.4	-60.6	43.3
1984	46.9	-88.7	46.0
1985	48.5	-96.0	23.9
1986	57.4	-0.1	22.9
1987	56.7	29.4	24.1
1988	52.0	14.9	27.8
1989	54.9	19.6	27.6
1990	60.0	17.8	27.8
1991	62.3	20.4	29.1

Notes: [a] (Exports + Imports)/GDP at constant 1980 prices.
Source: Author's elaboration from INE (1992a), UDAPE (1992b), World Bank (1991).

By the late 1980s, therefore, the key elements of the New Economic Policy had already had a major effect on the Bolivian economy. Inflation had been brought under control, the economy was opened up to foreign competition and becoming more outward-oriented, domestic markets had been liberalised, and the role of the state in the economy cut back. Despite the elections in 1989, which saw the Movimiento de la Izquierda Revolucionaria (MIR) candidate, Jaime Paz Zamora, elected President, the main elements of the NEP were maintained by the new government.

In spite of the success of stabilisation and the implementation of the major structural reforms, some aspects of the policy have given grounds for concern. Critics have pointed to some of the social costs of adjustment reflected in declining real wages, high levels of unemployment and cuts in social expenditure (NACLA, 1991).

Another key area of concern has been how to move from stabilisation to a reactivation of the economy (Morales, 1989). It is here that the structural adjustment measures should have a major impact. However, the level of investment, particularly private investment, in Bolivia has remained stubbornly low and this has been reflected in relatively low rates of economic growth. The balance of payments situation has also remained a problem, and improvements

have reflected changes in the capital account rather than a major turn around in trade performance.

It seems opportune, therefore, to consider the role which trade liberalisation has played in Bolivia's economic reform programme. Before doing so, however, the next section considers the ways in which theoretical analysis has suggested that trade reform can lead to improved economic performance, and the existing empirical evidence which bears on this question.

II: THE THEORY AND PRACTICE OF TRADE LIBERALISATION

Introduction

The advocacy of trade liberalisation in developing countries emerged largely from a disillusion with previous strategies of import-substituting industrialisation and a belief in the superiority of outward-oriented trade strategies. A number of empirical studies have supported the claim that countries adopting outward-oriented policies have performed better than those which pursued inward-oriented policies (see Edwards, 1993, for a review of these studies). The World Bank has been to the fore in arguing the case for outward-orientation (see for example World Bank, 1987, Ch.5; World Bank, 1991, Ch. 5). However such generalised claims for the superiority of outward-orientation have been challenged on a number of grounds, including the need to differentiate between countries at different levels of development and according to whether external conditions are favourable or not (cf. Singer, 1988; Gray and Singer, 1988; Evans, 1991).

Before embarking on a discussion of trade policy, it is important to have a clear definition of outward-orientation and of trade liberalisation. For some writers, outward-orientation is seen simply as having policies which are not inward-oriented i.e. do not provide incentives for production for the domestic market. However, as Bhagwati (1988) has pointed out, it is possible to distinguish between export promotion, where production for the domestic and export markets receive equal protection, and ultra-export promotion where there is a positive bias in favour of exports. Even this threefold classification is oversimplistic since it assumes that all goods are tradable. When non-tradables are introduced it is possible that production of tradables both for the domestic and external market can be promoted simultaneously (or simultaneously discriminated against), giving rise to a five-fold classification (Liang, 1992). Finally, particular combinations of incentives can be achieved in different ways. Neutrality between exports and domestic sales may be the result of free trade or of protection with export incentives. Thus, it is possible to generate a continuum of different strategies (Bradford, 1990).

While trade liberalisation might be defined as a move towards a more outward-oriented regime, the concept of outward orientation itself is somewhat ambiguous. The recent major comparative study by the World Bank defines trade liberalisation as

> 'any act that would make the trade regime more neutral – nearer to a trade system free of government intervention' (Michaely et al, 1991, p.17).

As Greenaway (1993) points out, this combines two conceptions of liberalisation: a move towards neutrality between the domestic and export market, and a move to free trade.

This is particularly problematic in multi-country studies, where ambiguity in defining what constitutes liberalisation makes it extremely difficult to compare experiences. It is less of a problem in an individual country case study, where it is the direction of policy change that is at issue rather than the extent of liberalisation.

For the purpose of the present study, therefore, trade liberalisation is identified with a reduction in the extent of quantitative restrictions on imports, and a reduction in the level and dispersion of the Effective Rate of Protection (both between different activities and between different markets). This restricts trade liberalisation to measures affecting trade policy instruments, so that exchange rate policies are not regarded as part of trade liberalisation.

Perspectives on Trade Liberalisation

The Neo-Liberal Case for Trade Liberalisation

The traditional case for trade liberalisation is based on comparative advantage. Third World countries have, it is argued, adopted protectionist policies (both tariff and non-tariff barriers) which have led to an inefficient allocation of resources, distorting their production structures from the optimum which would have existed under free trade. Trade liberalisation is therefore essential so that these countries can realise their true comparative advantage.

However, the advocates of trade liberalisation are not content to rest their case merely on static considerations of allocative efficiency in a perfectly competitive economy. It is argued that the gains from liberalisation will be greater when there are increasing returns to scale or where production is dominated by a small number of producers. Furthermore, there may also be dynamic long-term gains from trade liberalisation, as a result of the links between trade policies and growth of GDP, exports or productivity (World Bank, 1991, p.98). Liberalisation, it is further argued, will reduce the degree of unproductive rent-seeking associated with state intervention, and improve income distribution by increasing employment through the expansion of labour-intensive industries.

Neo-structuralist Critiques

While the theoretical arguments underlying the static case for free trade are well established (although not uncontroversial), the other arguments for liberalisation are less firmly based theoretically. The introduction of increasing returns to scale and/or imperfect competition can give rise to situations in which trade

liberalisation leads to losses rather than gains, depending on which sectors expand and which contract when trade is liberalised (Devarajan and Rodrik, 1989).

In any case, the main arguments for intervention in the development literature have always been couched in dynamic terms, as in the case of the Prebisch-Singer thesis on the deteriorating terms of trade or the infant industry argument, rather than in terms of static resource allocation. The growing literature on the development of technological capabilities in the Third World has strengthened the arguments for infant industry protection by highlighting the importance of productivity gains through learning (Pack, 1991).

The dynamic links that neo-liberals seek to establish between trade policies and growth in GDP, exports or productivity are not well grounded theoretically. Reviewing these arguments, Taylor (1991, p.119) concludes that,

> 'the case for a positive association between trade liberalisation and economic performance as measured by growth is *prima facie* difficult to make, and is not supported by cross-sectional or time-series evidence'.

The central concern of the critics is that trade liberalisation will tend to reinforce an international division of labour which is inimical to long-run growth, particularly in low income developing countries. As Amsden points out, 'The more backward the country, the harsher the justice meted out by market forces' (Amsden, 1989, p.13). One aspect of this is that, because of a low level of productivity, less developed countries are at an absolute disadvantage *vis-à-vis* the developed countries, in all but a small number of commodities, so that

> 'in free trade the absolute disadvantage of the underdeveloped capitalist country will result in chronic trade deficits and mounting international borrowing. It will be chronically in deficit and chronically in debt' (Shaikh, 1979, p.226).

As Taylor (1991) and Rodrik (1991) have shown, it is possible to develop theoretical models in which trade liberalisation has a negative effect on growth, with reasonably plausible technical and institutional assumptions. A common feature of these models is the importance of demand as an incentive for firms to invest, and some notion of a process of cumulative causation. This provides a basis for selective, targeted intervention *via* trade policy.

Empirical Evidence

The *a priori* arguments for trade liberalisation are by no means conclusive. Many of the leading advocates of liberalisation therefore rest their case heavily on empirical evidence. The evidence linking trade orientation and economic

performance has already been mentioned above. Here we shall consider studies which focus specifically on the impact of trade liberalisation.

The effects of trade liberalisation have been analysed using a number of different methodologies. The most commonly used have been:

- 'before/after' studies which compare the performance of countries before and after the introduction of trade reform;

- 'with/without' studies which compare the performance of countries which use trade reform with a control group which did not;

- simulation modelling which compares performance with a hypothetical outcome without trade reform.

Each of these approaches is subject to limitations. 'Before/after' studies cannot distinguish between the effects of trade reform and other changes which occur simultaneously, and implicitly assume that pre-reform policies would otherwise have been maintained. 'With/without' studies assume that conditions other than trade policy are similar in the two groups of countries, but since trade reform is usually accompanied by additional financial resources or other policy changes, this is problematic. Moreover, countries undertaking trade reform cannot be assumed to constitute a random sample of developing countries. Finally, the outcome of simulation exercises depends crucially on the assumptions built into the model being used and therefore tell us more about the specification of the model than the outcome of trade reform. It also assumes that the key parameters of the model are not changed as a result of the reforms.

(i) 'Before/After' Studies

The most comprehensive study of this kind is the World Bank sponsored study by Michaely et al (1991). It concluded that liberalisation tended to accelerate growth and improve the balance of payments. An earlier multi-country study by Krueger (1978) failed to find any significant direct relationship between changes in a country's trade regime and growth performance.

(ii) 'With/Without' Studies

A number of studies compare the performance of countries which have implemented trade reforms with a control group of countries which have not. Frequently this is combined with a type of 'before/after' approach by looking at changes in relative performance compared to the period before trade reform was introduced. These studies have tended to show an improvement in the balance of payments position, no clear-cut picture in terms of growth and a worsening in terms of investment (Greenaway and

Milner, 1993, Ch.13). Some studies do show a significant improvement in terms of growth in countries undertaking trade reform relative to those which do not, but this may be attributable to the worse initial performance of the reformers (Thomas, 1991).

A rather different type of econometric study by Clarke and Kirkpatrick (1991), using pooled data for 80 countries during the 1980s, concluded that trade reform had no significant impact on economic performance.

(iii) Simulation Exercises

A number of such exercises have attempted to illustrate the impact of trade liberalisation (e.g. Condon and de Melo, 1991; Rodrik, 1988; Devarajan and Rodrik, 1989). These have generally shown that there are gains from liberalisation, but this depends on the assumptions made concerning firm behaviour, entry and exit and the cost conditions.

The evidence from all these studies, therefore, is by no means clear in establishing a link between trade liberalisation and economic performance. The World Bank has recently adopted a somewhat cautious tone, stating that

> 'the difficulties in isolating the impact of *trade policies per se* and establishing causality suggest that the debate is not fully resolved' (World Bank, 1991, Box 5.3, emphasis in the original).

In addition to the lack of unambiguous results, the multi-country studies reviewed suffer from a number of weaknesses. If, as has been suggested, the effects of trade liberalisation hinge significantly on technological and institutional factors, then a case-by-case approach may be necessary in order to take these factors into account. Cross-section analysis of multi-country data sets may contain so much 'noise' that it is hardly surprising that statistically significant relationships often fail to emerge.

Where country case studies have been drawn upon in such studies these have mainly involved middle-income countries (cf. Krueger, 1978; Michaely et al, 1991). Structuralist arguments which emphasise the narrow range of commodities in which an underdeveloped country has an absolute advantage, and problems of supply bottlenecks and resource immobility, may be more acute in the least developed countries than in middle-income countries.

A second weakness of many of these studies is a failure to analyse empirically the mechanisms through which trade liberalisation is meant to affect economic performance. Both 'before/after' and 'with/without' studies focus on differences in performance outcomes, compared either to the pre-reform situation or the control group. As was pointed out above, a weakness of these approaches is

their assumption that the key difference between the two situations is the difference in trade policy. In practice however, whether one adopts a 'before/after' or 'with/without' approach, there are likely to be other factors which also affect performance, so that it may be illegitimate to attribute the change in performance entirely, or even mainly, to trade liberalisation.

In this context it is important to identify the mechanisms through which trade reform affects economic performance. It is surprising that these linkages are not given more attention in the literature. Empirical studies seem to adopt a 'black box' approach to the ways in which trade liberalisation affects economic performance. However, in view of the conflicting theoretical approaches to liberalisation and the ambiguous empirical evidence, there is a strong case for giving more attention to these linkages. In the remainder of this section, therefore, three of the most important effects of trade liberalisation, on resource allocation, productivity and exports, will be examined in more detail.

Trade Liberalisation and Resource Allocation

Theoretical Arguments

The effects of trade liberalisation on resource allocation will be discussed first of all in the context of a simple two-good model, before later introducing a third non-traded good. In the two-good case, liberalisation leads, under certain assumptions, to a shift along the production possibility curve to a new equilibrium in which more of the exportable and less of the import-competing good is produced. Among the key assumptions on which this conclusion is based are that factors of production are mobile between different activities, and that resources are fully employed.

If factors of production are not fully mobile, there may still be gains from trade, although these will be less than when resources are totally mobile. If, however, the assumption of full employment is relaxed, production may shift to a point inside the production possibility frontier and trade may lead to losses. Thus, if trade liberalisation is to lead to gains for the country concerned, it is vital that resources which are released from import-competing activities should be reabsorbed in export activities.

A further complication arises where, as is generally the case, one is not moving towards a situation of complete free trade. In this case the theory of the second best implies that partial liberalisation will not necessarily lead to welfare improvement.

As indicated above, a further question arises over the effects of trade liberalisation where economies of scale exist. Under certain circumstances these may increase the gains to be achieved through trade liberalisation. However,

where sectors subject to increasing returns to scale contract as a result of liberalisation then there may be losses from trade. Similarly, where markets are imperfect, the outcome of liberalisation is difficult to predict.

An important advantage of trade liberalisation in developing countries is often held to be its effect on factor incomes. On the Hecksher-Ohlin assumption that exportables are relatively labour-intensive and importables relatively capital-intensive, trade liberalisation will tend to increase the return to the abundant factor, labour. This prediction is often extended to argue that trade reform will lead to a reduction in income inequality in developing countries.

In practice it is not possible to classify all goods as either exportables or importables, and recent analyses of trade liberalisation have introduced a third, non-tradable, good into the picture (Edwards and van Wijnbergen, 1989). Although it might be expected that with trade liberalisation, production of non-traded goods would fall, this is not in fact the case. Assuming that the ranking of goods in terms of capital-intensity goes from importables (most capital-intensive) to non-traded to exportables (most labour-intensive), and that factors of production are mobile between sectors, it can be shown that trade liberalisation will in the long-run lead to an expansion of the production of exportables and non-traded goods and a contraction of importables.

If capital is sector specific i.e. cannot move between sectors, the production of non-traded goods may increase or decrease in the short-run, and the price of the non-traded good will rise relative to the importable good and fall relative to exportables. A further complication arises if wages are not fully flexible. Where capital is sector specific and wages are sticky downwards, trade liberalisation can lead to a disequilibrium situation with unemployment.

Empirical Evidence

One of the key issues in the analysis of trade liberalisation is whether or not it will lead to a process of deindustrialisation. In so far as the industrial sector has tended to be the most highly protected sector in developing countries, it might be expected that it would contract as a result of trade liberalisation. Indeed in Latin America, the experience of the Southern Cone countries in the 1970s and early 1980s seemed to support this view (cf. Tokman, 1984). However, it has also been argued that this was not a direct consequence of trade liberalisation but rather of other policies which led to overvalued exchange rates.

However, when account is taken of scale economies and imperfect competition, it is quite possible that trade liberalisation may lead to the expansion of a previously protected manufacturing sector. Devarajan and Rodrik (1989) illustrate this possibility with a simulation of the effects of trade liberalisation in Cameroon.

Michaely et al (1991) conclude, on the basis of their case studies, that the rate of growth of manufacturing output only falls in the first year after liberalisation and then accelerates. Tybout (1991) similarly concludes that manufacturing has performed relatively better in countries which have undergone policy reform than the average for the region in which they are found. Clarke and Kirkpatrick (1991), however, find no relationship between manufacturing growth and trade liberalisation.

It is perhaps not surprising that no overall pattern has been found in manufacturing. Since the sector is made up of import-competing, exportable and non-traded goods, the extent to which output expands will depend on the relative importance of each of these and the impact of liberalisation on non-tradable production. It will also depend on the nature of firm reactions, cost conditions and entry and exit, where markets are imperfect and scale economies important.

Another issue which gives rise to considerable debate is the effect of liberalisation on employment. On the basis of their studies Michaely et al (1991, p.76) claim that

> 'The overwhelming impression gained from these findings and country studies is that import ratios and unemployment are correlated either very weakly or not at all.'

As Greenaway (1993) points out, however, a number of the case studies show substantial increases in unemployment following liberalisation. The authors of the World Bank study dismiss these examples as being the result of factors other than trade reform, but this is a rather subjective conclusion. Thus the possibility that trade liberalisation may lead to underemployed resources cannot be ruled out.

There is a similar lack of consensus concerning the claims that trade liberalisation will lead to increased income equality. As Helleiner (1990, p.893) points out, the effects of such policies will differ between countries depending on their economic structure. This is borne out by a study by the OECD which concluded that

> 'foreign-oriented growth is necessarily associated with equitable growth in some cases but [that] in others this form of growth may go hand in hand with persistent or deteriorating inequalities and poverty' (Bourguignon and Morrisson, 1989, p. 299).

A recent survey of liberalisation and income distribution in the 1980s arrived at a similar conclusion:

> 'liberalisation could affect income distribution substantially differently according to countries' initial conditions (factor endowments, institutions) and policy set-ups' (Berry and Stewart, 1994, p.22).

Looking more specifically at the impact of trade liberalisation on income distribution, the previously cited World Bank sponsored study found that in some cases liberalisation was accompanied by a deterioration in income distribution while in others it improved. The study concluded that

> 'there is no evidence that lower income groups derive particular advantage from liberalisation, nor is there any confirmation for the oft-repeated contention that liberalisation is bound to lead to a deterioration of income distribution, deepening the poverty for the poor' (Michaely et al, 1991, p.112).

However, another study of four Latin American countries for the World Bank found an association between real devaluation and decreases in real wages of low-income labourers (quoted in Thomas et al, 1991, p.76). These results reinforce Helleiner's point that it is difficult to generalise about the employment and income distribution effects of trade liberalisation.

Trade Liberalisation and Productivity

Theoretical Arguments

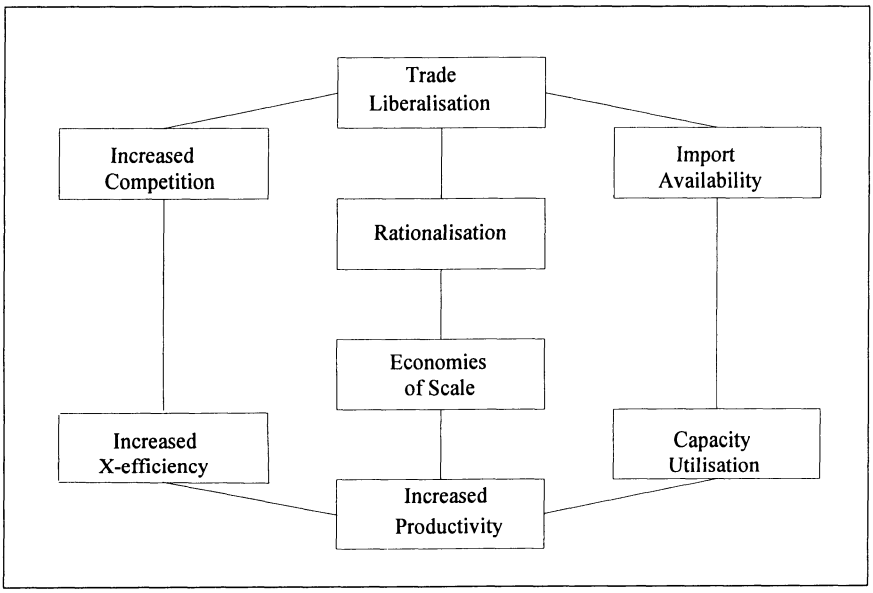
A number of theoretical arguments have been put forward to support the view that open trade regimes lead to faster rates of productivity growth than inward-oriented ones, and that trade liberalisation will lead to improved productivity growth. Three such arguments have received particular attention in the literature (see for example Nishimizu and Robinson, 1984). These are illustrated schematically in Figure II.1.

The first of these is the 'import discipline' hypothesis that trade liberalisation will result in increased competitive pressures on domestic producers which will in turn lead to greater entrepreneurial effort to increase X-efficiency. This argument implicitly assumes satisfying rather than optimising behaviour on the part of firms, and insufficient competitive pressure within the domestic market to cause firms to seek to maximise return. Moreover, as Rodrik (1991) shows, it is possible to show that a protected market will, by ensuring a larger market share for a domestic producer, make it more worthwhile to invest in productivity-enhancing technology. Thus, as long as protection increases the firm's market share, it will improve the level of technical efficiency.

A second argument is based on economies of scale. If trade liberalisation leads to wider markets for domestic producers through exports, they can expand

and take advantage of economies of scale to reduce costs. Moreover, where protection has led to a proliferation of small, high-cost producers in an industry, liberalisation may lead to rationalisation of the domestic industry with further scale effects. These arguments are analytically fragile, however, since they depend on a number of assumptions (Rodrik, 1992; Tybout, 1992). In practice, trade liberalisation will not necessarily lead to the growth of industries which are subject to increasing returns to scale. The assumptions of freedom of entry and exit on which the rationalisation argument is based are also open to question.

Figure II.1: The Mechanics of Trade Liberalisation



A third argument introduces imports for which there are no domestic substitutes as a variable in the production function. Trade liberalisation increases the availability of these inputs and thus contributes to a higher level of capacity utilisation and of productivity (Dornbusch, 1992). However it is also possible for trade liberalisation to lead to 'import strangulation' if, when import controls are removed, imports of consumer goods expand rapidly leaving less foreign exchange available for imports of inputs and capital goods which previously received priority treatment (Fontaine, 1992a).

This third point is also sometimes linked to a more general argument that a more open economy is associated with greater transfer of know-how from abroad. This, however, confuses openness to foreign technology and foreign capital with openness to trade.

Thus, the theoretical mechanisms through which trade policy affect productivity growth continue to be controversial, and there is no clear cut *a priori* case for supposing that trade liberalisation will lead to increased productivity growth. As Rodrik (1991, p.171) concludes

> 'we are far from having any systematic theories which link trade policy to technical efficiency *per se*. In particular, we do not have any good reason to expect that trade liberalisation will generally be helpful to overall technological performance'.

Empirical Evidence

(i) The Direct Relation Between Trade Liberalisation and Productivity: Most of the empirical evidence on trade liberalisation and productivity growth is based on establishing a direct relationship between some indicator of openness or trade liberalisation and a productivity index.[4] Studies include cross-country comparisons, time-series studies of particular countries and cross-industry studies within countries.

Many of these studies have been reviewed in recent surveys, so that it is unnecessary to review them all here (see Pack, 1988; Havrylyshyn, 1990; Tybout, 1992; Kirkpatrick and Maharaj, 1992; Helleiner, 1994). No clear-cut picture emerges from these studies. Even the strongest supporters of liberalisation can only find tentative evidence of a positive relationship between openness and productivity. Tybout (1992, p.207) concludes

> 'In view of the diverse, ambiguous theoretical literature on the link between trade and productivity, it is not surprising that stable, predictable correlations have not emerged. Nonetheless in some countries and during some sub-periods there is some association between trade flow patterns and indexes of productivity growth at the industry level, even after correcting for several measurement problems.'

Havrylyshyn (1990, p.19) points out that

> 'Few studies measure directly the effect of trade policy on productivity, but most of those that do conclude that outward orientation leads to productivity gains, although the results are not always consistent or statistically robust.'

An even more sceptical view of the link between trade orientation and productivity growth is provided by Pack (1988, p.372) who states that

> 'Export orientation, whatever its other merits, does not appear to yield higher total factor productivity growth than does import substitution. Comparisons of total factor productivity growth among countries pursuing different international trade orientations do not reveal systematic differences in productivity growth in manufacturing, nor do the time-series studies of individual countries that have experienced alternating trade regimes allow strong conclusions in this dimension.'

This conclusion is echoed by Kirkpatrick and Maharaj (1992) and Helleiner (1994).

(ii) Mechanisms Linking Trade Liberalisation to Productivity Growth:
In the light of this rather ambiguous evidence, it is relevant to ask whether the theoretical arguments linking productivity growth to trade liberalisation discussed above, stand up empirically. Although there are numerous studies which test the relationship between trade policy and productivity, there are relatively few which consider the links between trade liberalisation and the specific mechanisms that theoretically could lead to increased productivity.

Import Discipline
Most of the studies of industrial structure in developing countries are based on domestic measures of concentration, and only a few take trade variables into account (see Lee, 1991, Table 2). In cross-section studies, where these are taken into account, Lee finds some support for the import discipline hypothesis in that profit margins are typically negatively correlated with import penetration and positively correlated with measures of protection, although several writers have warned of the need for caution in interpreting the relationship between profitability and trade variables (Lee, 1991, p.109). Havrylyshyn (1990), moreover, concludes that although studies from industrial countries support the import discipline hypothesis, the results of three studies which looked at changes over time in Less Developed Countries (LDCs) were ambiguous (studies of Spain, Ivory Coast and Chile). A more recent study of Mexico by Weiss (1992) found evidence of a weak relationship between trade liberalisation and price markups, while a study of Turkey found a significant negative relationship between import penetration and price-cost margins in the post-1980 period (Celasun, 1994).

The second step in the chain is whether or not the level of competition affects the growth of productivity. There is considerable debate within the advanced industrial countries over the relationship between market structure and technical progress. Broadly speaking, the neo-classical view emphasises the importance of competition as a force for technical change while the Schumpeterian view sees the need for large-scale operations and stable markets as crucial for investment in research and development.

In LDCs this issue has hardly been studied, which is not entirely surprising in view of the primitive state of industrial studies. The evidence of the few studies of productivity performance which have included market structure variables, for what they are worth, are supportive of the Schumpeterian, rather than the neo-classical view of technical change, since productivity growth has usually been found to be positively correlated with concentration (see for example the studies of Brazil, Colombia, India and South Korea in Helleiner, 1994). However, as was indicated above, studies of concentration in LDCs do not usually take account of trade, which is a major limitation.

Scale Economies

A second question is whether or not trade liberalisation does in fact generally lead to firms being able to take advantage of economies of scale. Again there are very few studies which have analysed this issue. Tybout (1992, p.204) refers to three such studies on Chile, Colombia and Morocco and concludes that, although it is unclear how far their findings can be generalised, 'they do cast doubt on the popular conjecture that opening an economy leads to efficiency gains through the exploitation of plant-level scale economies.'

The link between economies of scale and productivity gains in developing countries has also been relatively neglected. Havrylyshyn (1990) reviewing some of the studies which address this issue, concludes that what evidence there is tends to confirm the existence of some positive effect of scale on productivity. A number of subsequent studies in South Korea, Brazil and India have confirmed that growth of establishment size was an important determinant of total factor productivity growth (Dollar and Sokoloff, 1990; Fritsch and Franco, 1994; Ahluwalia, 1994).

However Berry (1992, p.58) is more agnostic:

> 'To summarize, neither the evidence on the relation of size to unit costs or profits nor the implications of survivor analysis suggest a prevalence of economies of scale, scope or size in LDC manufacturing. But neither do these data clearly contradict such a possibility, given the alternative interpretations to which they are open.'

What both Havrylyshyn and Berry are agreed on is that the importance of economies of scale tends to vary considerably from industry to industry.

Input Availability

Finally what evidence is there concerning the link between increased availability of imported inputs and trade liberalisation? One of the most consistent findings of studies of trade liberalisation is that it is accompanied by increased imports (Thomas, 1991, Table 4.5; Michaely et al, 1991, Ch.11).[5] However this does not necessarily show that imports of inputs or capital goods increased, or that

these contributed to increased productivity. One case study which addresses this issue (Fontaine, 1992b on Kenya) finds that although consumer goods benefited more than inputs from liberalisation, there was also an increase in the level of imported inputs. However, contrary to expectations, there was a negative relationship between availability of imported inputs and productivity.

An important way in which greater availability of imported inputs can lead to increased levels of productivity in practice is through higher levels of capacity utilisation. In reviewing the empirical evidence, Havrylyshyn (1990) concludes that the first step in this argument, linking trade liberalisation to higher levels of utilisation, has not as yet been adequately tested, although it is intuitively plausible. A number of studies however have found that capacity utilisation is an important determinant of productivity, as might be expected.

In summary then, neither the theoretical arguments nor the empirical evidence provide a conclusive case that trade liberalisation leads to better performance in terms of productivity. It is possible to construct equally plausible theoretical models in which liberalisation can lead to slower productivity growth. In the case of the empirical evidence, it is difficult by its very nature to establish a direct link between trade liberalisation and productivity growth because of the role of many other factors. The mechanisms linking trade and productivity, which are identified theoretically, have been subject to very little empirical verification, and the various studies which do bear on these issues have not produced unambiguous results.

Trade Liberalisation and Exports

Theoretical Arguments

A third major plank in the case for trade liberalisation is the claim that it will stimulate exports. Under protectionist regimes, it is argued, there is an anti-export bias because of the lower effective exchange rate for exports compared to imports (Bhagwati, 1988). As long as there are large profits to be made in protected import-substituting industries, firms will be unwilling to invest in production for export (Michalopolous, 1987, quoted in Agosín, 1991).

In these circumstances, it is argued, trade reform is essential if exports are to grow. Liberalisation will lead to a shift in resources from the production of import substitutes to the production of exportables. However, there are a number of assumptions implicit in this argument. First it assumes that resources can be transferred costlessly from producing import substitutes to producing exportables. In practice the growth of exports is likely to require investment in new capacity as well as substantial costs in developing overseas markets. Secondly, it assumes that resources are fully utilised so that the economy is on its production possibility frontier. However, it is quite possible that import

liberalisation will lead to a loss of output and increased idle resources. Equally, if resources are not fully utilised initially, it may be possible to increase exports without at the same time withdrawing resources from the production of import substitutes.

The above argument emphasises the incentive effects of protection on production for export *vis-à-vis* production for the domestic market and is sometimes referred to as the relative anti-export bias (Balassa, 1982). However, protection can also affect the competitiveness of exports *vis-à-vis* the production of other countries. Because inputs cost more than world market prices, protection puts exporters at a competitive disadvantage in international markets. Unless they are exempted from duties on imported inputs and are free to substitute imports for domestically produced inputs, local exporters will suffer a cost penalty. This has been described as the 'input tax' source of bias against exports (Milner, 1990) and is sometimes referred to as an *absolute* bias against exports (Balassa, 1982).

The difference between the relative and absolute bias against exports can be presented formally in terms of the Effective Rate of Protection (ERP) for production for the domestic market and for exports. Neutrality implies that the ERP is equal for import substitutes (IS) and exports (X). A *relative* bias against exports exists when $ERP_{IS} > ERP_X$. A measure of the extent of the relative anti-export bias is given by $(1 + ERP_{IS})/(1 + ERP_x)$ (Balassa, 1982). The larger this ratio, the greater the degree of anti-export bias.

An absolute bias against exports occurs when ERP for exports is negative ($ERP_x < 0$). This implies that the additional costs, in terms of import duties and highly priced local inputs, which exporters face as a result of protection, exceed any additional incentive which they receive for exporting.

The importance of a relative bias against exports depends on assumptions concerning full utilisation of capacity, so that an increase in exports will be at the expense of domestic sales. Where there is substantial excess capacity, a relative bias against exports will not necessarily discourage exports. An absolute bias against exports has a more direct effect on exports because it puts the country's exporters at a competitive disadvantage *vis-à-vis* other countries.

A further argument which is sometimes made is that trade liberalisation not only reduces the cost of imported inputs, but can also increase their availability. Under restrictive trade regimes, potential exporters may not be able to acquire certain key imported inputs or capital goods which they require in order to produce for export.

> 'If appropriate intermediate goods can be imported, a country may easily become an exporter of labour intensive tasks such as assembly services;

> without such imports, that value-added opportunity is lost, along with the opportunity to graduate over time from assembly to tasks with higher value added'. (Dornbusch, 1992, p.74).

Protectionist policies, it is argued, not only discourage exports directly through their effects on the costs and availability of imported inputs, but also indirectly through their impact on the exchange rate. Protection reduces the demand for foreign exchange below that which would exist under free trade leading to a higher exchange rate than would exist in the absence of protectionist measures. The consequent overvaluation of the currency is a disincentive to exporters (Morrison, 1975).

In this scenario, trade liberalisation will result in a more realistic real effective exchange rate (REER), giving a boost to exports. It is also likely to lead to a more stable REER, because whereas in protectionist regimes the negative effects of fluctuations in the exchange rate are dampened by the existence of quantitative controls, in more export-oriented regimes these effects are felt much more quickly so that the government has to take corrective action. A more stable REER encourages investment in production for export because it reduces the uncertainty associated with exchange rate fluctuations.

Empirical Evidence

In view of these theoretical arguments, what evidence is there that trade liberalisation does in practice lead to improved export performance? A number of cross-section studies have concluded that countries with more liberal trade regimes have tended to perform better in terms of exports. The best known of these, by the World Bank, showed that on average manufactured exports grew more rapidly in outward-oriented than in inward-oriented countries during both the 1965-73 and the 1973-85 periods (World Bank, 1987).

The methodology of this study has been subject to numerous criticisms (see for example Singer, 1988; Evans, 1990). More detailed analysis of the link between protection and export performance shows a somewhat equivocal relationship. Morrison (1975), for instance, finds a negative relationship with tariff levels, but this is only significant at the 10% level. Agosín (1991) finds no statistically significant difference between the prevalence of non-tariff barriers in countries where manufactured exports have grown fast and those where they have grown slowly.

While the relationship between protection and export performance has a bearing on the question of the link between trade liberalisation and exports, the latter has also been directly addressed in a number of recent studies. The results of these studies are by no means clear-cut. Those associated with the World Bank have found that exports, particularly manufactured exports, tend to increase following liberalisation (Michaely et al, 1991, Ch.12; Thomas et al,

1991, Ch.3), and that reforming countries have performed better than non-reformers (Thomas et al, 1991, Ch.3), although the differences are not always statistically significant. On the other hand, three studies for UNCTAD found little evidence to support a link between liberalisation and export performance (UNCTAD, 1989, Part I, Ch.V.B; Agosín, 1991; Shafaeddin, 1994), a conclusion that is supported by Clarke and Kirkpatrick (1991).

Even those studies which find a relationship between trade reform and export performance differ over the mechanisms which link them. Thus, while Michaely et al (1991, p. 275) conclude that it is the relaxation of import restrictions (together with depreciation of the real exchange rate) that account for export expansion, while export promotion measures have no independent impact, Thomas et al (1991, p.76) claim that

> 'Generally, the positive effects on exports and growth resulting from a real devaluation with export reform would be expected to be more immediate than those from a real devaluation with import liberalisation.'

A further point which should be noted is that in the most successful exporters, the East Asian NICs, particularly South Korea and Taiwan, the export drive preceded import liberalisation, rather than being a consequence of it. Thus both theoretically and empirically the causal link between trade liberalisation and an improvement in export performance is not nearly as clear-cut as is sometimes claimed. While there is no doubt that protection can discourage exports in various ways, it is not inevitably incompatible with a strong export performance, nor does trade liberalisation on its own guarantee a good export performance.

Conclusion

This review of the theoretical and empirical literature on trade liberalisation suggests that, despite the widespread adoption of trade policy reform by developing countries over the past decade, the consequences of such measures are not fully understood. The enthusiasm for liberalisation has often been based more on faith than sound theoretical arguments, while evaluation has often been carried out using 'rose tinted glasses' (Greenaway, 1993).

The debate on liberalisation is therefore by no means closed. The present study is intended as a small contribution to this debate in two respects. First, it is a study of a low income country which undertook sweeping trade liberalisation under extremely difficult circumstances, and is often held up as an example of what can be achieved. However, as yet there has been little detailed analysis of the effects of this trade reform.

Second, in analysing the impact of trade liberalisation on the Bolivian manufacturing sector, the study adopts a microeconomic approach, and seeks to identify the mechanisms through which trade liberalisation is supposed to affect economic performance. This type of research which links the analysis of trade relations with industrial studies has so far been very little used in discussing trade policy reform, but provides a valuable approach to the trade liberalisation debate.

III: THE BOLIVIAN MANUFACTURING SECTOR AND TRADE LIBERALISATION

The Development of the Manufacturing Sector

Unlike other Latin American economies which have undertaken radical trade policy reform, such as Chile or Mexico, Bolivia's industrial development is relatively recent. There was little manufacturing activity before the 1952 Revolution, but since then successive governments have paid lip service to the need to industrialise the country. In 1955 the Economic Commission for Latin America (ECLA) emphasised the need for Bolivia to promote industry through import substitution, and the period from 1952 to 1985 has been described as one of state capitalism with indebted industrialisation (Morales, 1988b).

Policies to Promote Industrialisation

The policies adopted by Bolivian governments to promote industrial development in the period up to 1985 were the typical ones of Latin American import substitution strategies. This involved giving protection to local producers, particularly of consumer goods, while at the same time providing them with preferential access to imported inputs. A number of investment laws were passed in the 1960s and 1970s. The 1971 Law (DL 10045), for example, enabled firms to receive exemptions from import duties on machinery and equipment and on raw materials and components, as well as reductions on domestic taxes (Violand, 1990).

During the 1970s the Ley de Inversiones did not succeed in attracting much foreign investment. Nor was it used selectively to promote particular industries or to encourage regional development (Violand, 1990). The impact of tariff protection generally was also weakened by the large-scale contraband trade.

In addition to tariff and tax exemptions, there were some rediscounted loans from programmes managed by the Central Bank, for the manufacturing sector. However, these credit programmes had limited effect, either because they did not involve preferential interest rates or because the credit was diverted to non-industrial activities (UDAPE, 1990a, p.25).

The Growth of the Manufacturing Sector

Despite these attempts to promote import substitution, the manufacturing sector remained relatively small. In the quarter century after 1955, its share of GDP increased by only one per cent and it remained well below the Latin American average (Espejo et al, 1988, p.13). In fact, throughout the period 1960-1990, Bolivia's industrial sector has lagged behind that of other Latin American countries both in terms of its share of GDP and of value added *per capita* (Montaño and Villegas, 1993, Tables II.4 and II.5).

During the 1950s, when Bolivia suffered from high inflation in the aftermath of the Revolution, the manufacturing sector stagnated. In the 1960s, however, manufacturing grew at an average of 7.9% per annum and between 1970 and 1978 at 6.7% a year. Despite this, however, manufacturing accounted for only 15.6% of GDP in 1978. From 1978 onwards, industry was affected by the growing economic crisis and between 1978 and 1985 production fell at an average rate of 4.7% per annum (Table III.1).

Table III.1: Growth of Manufacturing Sector, 1950-1991

	Growth Rate (% p.a.)	Share of GDP (% end year)
1950-60	-0.4	14.1[a]
1960-70	7.9	14.4
1970-78	6.7	15.2
1978-85	-4.7	12.1
1985-91	4.3	13.7

Note: [a] End year is 1962
Sources: Espejo et al (1988), pp.12-13; own elaboration from INE (1992a).

After the introduction of the New Economic Policy, manufacturing output began to recover slowly, growing at an average annual rate of 4.3% between 1985 and 1991. However, despite this recovery, manufacturing value added had not regained the level of the late 1970s by the early 1990s (INE, 1992a).

Characteristics of Bolivian Manufacturing

The relative backwardness of the manufacturing sector is also reflected in its composition. The industrialisation which took place in Bolivia in the sixties and seventies hardly went beyond the so-called 'easy phase' of import substitution in non-durable consumer goods. In 1978, when industrial production reached a peak, the food, drink and tobacco industry (ISIC 31) accounted for about 40% of manufacturing value added, while textiles, clothing and footwear (ISIC 32) contributed almost 20% (Montaño and Villegas, 1993, Table I.4).

A further illustration of the limited degree of industrialisation in Bolivia is the extent to which manufacturing depended on imported inputs. Except for certain industries such as wood products and nonferrous metals, which depended on local raw materials, more than half of the inputs to the manufacturing sector came from abroad (Ministerio de Planeamiento y Coordinación, 1988, Table IX.5). This reflected the low degree of intra-sectoral linkages within the manufacturing sector.

The Bolivian manufacturing sector is also characterised by a very large number of micro-enterprises which make up the overwhelming majority of firms (about 90%) and account for between a quarter and a third of industrial

employment. The average size of manufacturing firm in the early 1980s was only 6.3 employees in Bolivia, which was considerably less than the norm in other developing countries (Sanchez, 1988).

Finally, the Bolivian manufacturing sector was far from being internationally competitive. A significant part of industrial capacity is technologically obsolete and cannot hope to compete in foreign markets (Cobas and Aurrecoechea, 1988; Aguirre et al, 1992). This is reflected in the very low level of manufactured exports from Bolivia. Although on some indicators Bolivia appeared to have significant exports of manufactures by the late 1970s, these were either processed minerals or basically agricultural products such as sugar. Even when these were considered as manufactured goods, the industrial sector as a whole showed a substantial trade deficit.

Obstacles to Industrial Development

Studies of industrial development in Bolivia have identified a number of obstacles which account for the backwardness of Bolivian industry.[6] The first of these is the relatively small size of the domestic market. This is a function not only of the relatively small and dispersed population, but also of the unequal income distribution. This means that a significant section of the population do not enter into the market as consumers of manufactured goods.

The small market has also given rise to oligopolistic industries where collusion is the norm and firms see little need to compete. Economic concentration is even greater than plant concentration levels might indicate because of the existence of a number of economic groups which control several plants within a particular industry and have interests in other areas. As a result of these oligopolistic structures, there was little innovation or effort to improve the quality of products.

It has proved difficult to attract capital into the industrial sector. Unlike some other Latin American countries, there has been little direct foreign investment in manufacturing in Bolivia. In addition to the small domestic market, this probably reflects the lack of domestic infrastructure and the chronic political instability which has characterised Bolivia throughout most of its history.

Other external sources of funds have not generally been available for the industrial sector. Domestic private investment has been limited and has tended to concentrate on financial and commercial activities which give a much quicker return, rather than on manufacturing. Although the state has been a major economic actor in Bolivia since the 1950s, its direct involvement in manufacturing has been concentrated largely in oil refining and in metals, so that it has not been able to develop the industrial sector as a whole.

Finally, a frequently heard complaint is the lack of skilled manpower, which is cited as a factor causing low productivity in manufacturing. This reflects both the low overall levels of literacy and education, and the lack of adequate vocational training opportunities.

In addition to these obstacles, the policies themselves never constituted a coherent industrial strategy. As one report put it,

> 'A clear industrial policy has always been lacking in Bolivia, because the country has based its economy solely on exports of raw materials, particularly minerals and hydrocarbons' (Espejo et al, 1988, p. 6, my translation).

Trade Policy Reform and the Structure of Protection

Protection Before 1985

Immediately before the adoption of the NEP, the main features of Bolivia's import regime were the following:

- an average (unweighted) nominal import duty which was not particularly high - just over 20% - following a revision of the tariff code in 1982 (Econometria, 1987, Table 5).

- considerable dispersion in tariff levels, with imports of consumer goods being relatively highly protected while fuels, intermediate inputs and capital goods paid low levels of duty.

- a number of exemptions from import duties, for particular industries and for firms covered by the Ley de Inversiones, so that the average import duty paid was below the nominal tariff.

- use of non-tariff barriers to protect local production from imports of similar products, which affected about 10% of all imports.

The effects of these protectionist measures, together with a low share of value added in gross production in the manufacturing sector, was to give a relatively high level of effective protection to industry. As can be seen in Table III.2, the ERP in Bolivia in the early 1980s was considerably higher than in a number of other Latin American countries at that time.

The Post-1985 Trade Liberalisation

The main measures affecting imports since 1985 are set out in Table III.3. The government implemented two of the main recommendations of trade reformers, the elimination of quantitative restrictions on imports, and the adoption of a relatively low, uniform tariff structure. DS 21060 established the freedom to

import all goods, except those which constitute a threat to public health or the security of the state. It also substantially reduced differential tariff levels which were totally eliminated a year later when a uniform tariff rate of 20% was set, and attempted to eliminate duty exemptions.

Table III.2:
Effective Rates of Protection in Manufacturing in Selected Latin American Countries

Country	Year	ERP (%)
Bolivia	1982	94
Argentina	1977	38
Brazil	1980-81	46
Chile	1979	14
Colombia	1979	44
Mexico	1979	11
Uruguay	1981	75

Sources: Table II.5; Schmitz (1984), Table 1; Agarwala (1983), Table 1; Corbo and Sánchez (1985), Table 3-5; Mezzera and de Melo (1985), Table 5-3.

However, these general principles were breached in a number of ways. Three industries, flour milling, sugar refining and edible oils, were protected through a system of prior licensing for imports. Agro-industries were also given preferential treatment through exemptions from duties on their imported inputs. In fact exemptions as a whole, which accounted for 28% of total import duties due in the early 1990s, were just as prevalent as they had been in 1981 (own calculation from INE data). The principle of tariff uniformity was also breached by the introduction of a preferential duty of 10% for capital goods in 1988.

Table III.3: Measures Affecting Imports Introduced since 1985

Decree	Measures
DS21060 (29/08/85)	Tariff reduced to 10% plus 10% of existing tariff; non-tariff barriers removed
DS21094 (15/10/85)	Tariff exemptions for inputs for agriculture and agro-industry
DS21098 (19/10/85) DS22193 (17/05/89) DS22374 (22/11/89)	Prior licences required for imports of sugar, edible oils and flour
DS21367 (13/08/86)	Import tariff consolidated at uniform rate of 20%
DS21910 (01/03/88)	Preferential duty of 10% for capital goods; gradual reductions of duty on other goods planned
DS22407 (11/01/90)	Tariff on capital goods reduced to 5%
DS22585 (20/08/90)	General tariff reduced to 10%

Although an initial attempt to reduce import duties gradually had to be abandoned at the end of 1988 for fiscal reasons, import duties were further reduced to 10% in general and 5% for capital goods in 1990, and have been maintained at that rate since then.

Changes in Nominal Protection After 1985

The initial uniform tariff of 20% introduced in 1986 did not represent a significant reduction over the average tariff level on all goods which existed prior to 1985. Thus, the main feature of the trade reform as far as the overall structure of import duties were concerned was a reduction in their dispersal rather than in their level. As a result, while for some products duties were considerably reduced, for others the new tariff structure meant a higher level of protection.

Table III.4: Nominal Tariffs on Manufacturing, 1982, 1988, 1990 (%)

	1982	1988	1990
Meat Products	8.3	10.4	10.9
Dairy Products	2.8	12.1	10.3
Mills & Bakeries	17.5	11.5	2.8
Sugar & Confectionery	41.7	17.9	13.7
Other Food Products	19.9	15.2	10.8
Drink	60.2	17.1	12.7
Tobacco	100.0[a]	11.5	13.0
Textiles, Clothing & Leather	72.2	17.8	14.4
Wood & Wood Products	62.1	10.9	5.1
Paper & Paper Products	35.0	13.4	9.9
Chemicals	37.2	14.9	12.0
Petroleum Products	n.a.	19.7	13.5
Non-metallic Minerals	45.6	17.5	14.0
Base Metals	n.a.	17.0	12.4
Metal Products, Machinery & Equipment	45.7	13.2	8.4
Other Manufacturing	43.3	10.3	8.1
Total Manufacturing	47.7	14.0	9.7
Standard Deviation	19.6	3.0	3.2
Coefficient of Variation (%)	41.1	21.4	33.0

Note: [a] Industry protected by non-tariff barriers where the tariff equivalent was assumed to be 100%.

Source: Econometría (1987), Table 7, for 1982; author's elaboration from INE data for 1988 and 1990.

Table III.4 shows the nominal rates of protection for 16 Bolivian manufacturing industries before and after the introduction of trade reform. These were calculated from data on imports and import duties actually paid, weighted by the structure of imports (in other words these are *ex post* rather than *ex ante* measures). The estimates took account of tariff exemptions, but because direct

price comparisons were not made between domestic and world prices, the protective effects of non-tariff barriers or the possibility of 'water-in-the-tariff' (i.e. domestic prices below the world price plus tariff) were not included.

Nominal tariffs were calculated from the import duties actually paid on officially declared imports, although the latter underestimate the total value of imports because of smuggling and under-declaration for customs valuation. The rationale for doing so is the belief that, although illegal imports do not pay duty, there are a number of additional costs involved in smuggling (e.g. bribes, risk premium) so that it cannot be assumed that they sell in the Bolivian market at international prices. Thus, despite smuggling, the average tariff provides a reasonable estimate of the excess price of goods in Bolivia.

The overall level of nominal protection was not significantly reduced by the reforms. Under the pre-1985 tariff structure, however, manufactured goods had been more highly protected than primary products, so the average level of nominal protection for manufacturing industry was significantly reduced from 47.7% to 14.0% in 1988 (see Table III.4). The dispersion in tariffs was also reduced, as is indicated by the fall in the standard deviation and the coefficient of variation between 1982 and 1990. Most industries had lower levels of protection in 1988 and 1990 than in 1982, the only exceptions being the meat and dairy products industries.

Changes in the Effective Rate of Protection

A more accurate measure of the protection received by the manufacturing sector is the Effective Rate of Protection calculated on the value added in a particular industry rather than the Nominal Rate of Protection calculated on the gross value of production.

The only detailed study of ERP in Bolivia before the introduction of the NEP is the one carried out by Econometría (1987) for the Cámara Nacional de Industrias, the results of which are included in Table III.5. The estimates of ERP were made using the Corden method.[7] In calculating the ERP, input-output coefficients from the 1978 input-output table were used.

As indicated above, despite the low average level of import duties before 1985, the ERP for the manufacturing sector was relatively high. As Table III.5 shows, there were also considerable differences in the levels of protection given to different industries, ranging from a low of 2.1% for dairy products to a high of 195.7% for tobacco.

In theory, the introduction of a uniform tariff, as was done in Bolivia in 1986, should lead to a uniform ERP, equal to the level of the tariff, because the prices of both inputs and outputs are raised by the same proportion. In practice, as can

be seen from Table III.5, this was not the case because some imports were exempt from duties.

The estimates of ERP for 1988 and 1990 were carried out using the same methodology as in the Econometría study in order to make them as comparable as possible. The input-output coefficients used to estimate the 1988 and 1990 ERPs were derived from the 1988 input-output table (INE, 1992b). Although this differed slightly from the 1978 input-output table, with an increase in the number of branches from 31 to 35, the manufacturing sector was unaffected by these changes.

Table III.5 shows that the ERP for the manufacturing sector was reduced from 94.1% in 1982 to 17.1% in 1988 and further to 8.9% in 1990 when the lower rates of duty of 10% was introduced. As was the case with nominal tariffs, most industries received less protection in 1988 than in 1982, the only exceptions being dairy products and other food products. In practice most industries were affected by reduced duties on their output and increased duties on inputs, both of which tended to reduce the ERP.

Table III.5: Estimates of ERP in Manufacturing, 1982, 1988, 1990 (%)

	1982	1988	1990
Meat Products	80.4	-4.4	6.1
Dairy Products	2.1	7.8	8.5
Mills & Bakeries	65.0	21.2	3.0
Sugar & Confectionery	114.5	54.6	8.0
Other Food Products	40.0	49.6	0.7
Drink	88.4	19.5	14.1
Tobacco	195.7	13.0	13.0
Textiles, Clothing & Leather	169.1	19.9	14.9
Wood & Wood Products	145.8	1.6	-4.2
Paper & Paper Products	76.0	12.8	9.2
Chemicals	64.8	13.6	11.6
Petroleum Products	n.a	22.2	13.0
Non-metallic Minerals	56.1	18.7	14.7
Base Metals	n.a	19.1	10.2
Metal Products, Machinery & Equipment	57.4	11.6	6.3
Other Manufacturing	49.9	6.3	3.6
Total Manufacturing	94.1	17.1	8.9
Standard Deviation	44.5	14.8	5.3
Coefficient of Variation (%)	41.1	86.6	59.5

Source: Econometría (1987), Table 7, for 1982; author's elaboration for 1988 and 1990.

Although the dispersal of ERP was reduced when measured by the standard deviation between 1982 and 1988, there continued to be large differences in ERP for different sectors, ranging from -4.4% for meat products to +54.6% for

sugar and confectionery; when measured by the coefficient of variation, the dispersal of ERP rates in fact increased.

The further reductions in tariff rates which took place in 1990 are reflected in a significantly lower ERP in that year compared with two years previously. These reductions in ERP were particularly marked in the case of the two sectors with the highest protection in 1988, sugar and confectionery and other food products. As a result, there was considerably less dispersal in rates of protection in 1990 than there had been two years earlier.

Exchange Rate Overvaluation and the Effective Rate of Protection

The calculations of protection which have been made so far have not taken into account the possibility that the exchange rate was overvalued. In comparing the ERP at two different dates, differences in the degree of overvaluation of the exchange rate may affect the real protection which industry receives.

There was obviously a significant difference between the situation in Bolivia in 1982 and that in 1988 or 1990. This is indicated by the difference between the parallel and the official exchange rate in 1982, which averaged around 160%. While this overestimates the degree to which the exchange rate was overvalued, it is clear evidence of substantial overvaluation. In contrast the differential between the official and parallel rates in 1988 and 1990 was less than one per cent.

The effect of overvaluation on ERP depends on the availability of foreign exchange at the official exchange rate. If this is readily available for both inputs and output, the ERP calculated at the official rate overestimates the net ERP which needs to be deflated according to the formula

$$Net\ ERP = [(1 + ERP) * R/Req] - 1$$

where R is the official exchange rate
Req is the equilibrium exchange rate.

If however, official foreign exchange is so scarce that it has to be obtained mainly on the parallel market, and domestic prices are set in relation to dollar prices converted at the black market rate, then the ERP is a good indicator of the degree of protection afforded to the manufacturing sector.

If certain manufacturers enjoy privileged access to imported inputs at the official exchange rate, whereas consumer goods have to be acquired with black market foreign exchange, then the ERP for these producers will be even higher than that calculated at the official exchange rate. Thus, under certain circum-

stances, the existence of an overvalued exchange rate may lead to the effective rate of protection being underestimated.

From what is known about the availability of foreign exchange in Bolivia in 1982, it is unlikely that the calculations of the ERP made in the previous section substantially underestimates the true extent of protection. Manufacturers, with very few exceptions, priced their products in dollars converted at the black market exchange rate. At the same time, they frequently complained that they did not have enough foreign exchange allocated at the official rate to pay for the imported inputs which they required, although the parallel market could always meet their requirements (Morales, 1988, p.43). Under these circumstances, the unadjusted ERP provides a better overall indication of the extent of the protection received by manufacturing industry than the Net ERP adjusted for overvaluation.

Export Incentives

The first systematic attempt to promote non-traditional exports in Bolivia was the *Régimen de Incentivos Fiscales a las Exportaciones no Tradicionales* created in 1977. This provided exporters with exemptions from duties on imported inputs incorporated into exports. It also created a *Certificado de Reintegro Tributario a las Exportaciones* (CERTEX) which varied from 6% to 25% depending on the 'embodied value added' of the product.

The main measures introduced since 1985 to promote exports are set out in Table III.6. Initially under DS21.060 the existing CERTEX system of export incentives was maintained until 1986, when it was withdrawn. In 1987 a new incentive, the *Certificado de Reintegro Arancelario* (CRA), was introduced with two rates, 5% for traditional exports and 10% for non-traditional exports, although subsequently the incentive was restricted to non-traditional exports. At the end of 1990 the rate was reduced to 6% and in April 1991 was replaced by a Drawback with rates of 2% and 4% for non-traditional exports.

Other measures designed to promote exports include the *Certificados de Notas de Crédito Negociables* (CENOCREN) to compensate exporters for value added tax payments, the temporary import regime (RITEX), free commercial and industrial zones (although as yet there are no industrial zones in operation), and preferential freight rates for exporters on the national railways. The Bolivian government also sought to provide institutional support for exporters through the creation of the Instituto Nacional de Promoción de Exportaciones (INPEX). Finally, in 1993 the government issued a decree which sought to ensure that exporters would be compensated for any taxes which they paid, including the transactions tax and the full amount of the value added tax.

Table III.6: Main Measures taken to Promote Exports, 1985-93

Decree	Measures
Law 843 (20/05/86)	Created CENOCREN
DS21660 (10/07/87)	Introduced the CRA; authorised setting up of industrial free trade zones; created INPEX
DS22407 & DS 22410 (11/01/90)	Established legal framework for industrial and commercial free zones and RITEX (temporary import regime)
DS22526 (13/06/90)	Established the norms for applying DS22410
DS22585 (20/08/90)	Reduced the CRA to 6%
DS22753 (15/03/91)	Introduction of Drawback of 2% and 4% to replace CRA
Ley de Exportaciones (1993)	Created the Consejo Nacional de Exportaciones and the principle of not exporting taxes

Conclusion

The trade policy changes which formed a key part of the New Economic Policy have significantly altered the conditions facing Bolivian manufacturing. This small and technologically backward sector has been opened to international competition. Imports, which accounted for 42% of domestic demand for manufactured goods in both 1978 and 1985, supplied almost half the market in 1991 (my calculation from INE data). The share of total production exported increased from a fifth in 1978 and 1985 to almost a quarter in the early 1990s. The remainder of this study will examine the impact that this has had on Bolivian industry.

IV: THE IMPACT OF TRADE LIBERALISATION ON RESOURCE ALLOCATION

Introduction

As was indicated in Section II, the traditional case for trade liberalisation is based on comparative advantage. A move towards free trade, it is argued, will lead to a more efficient allocation of resources, which shift out of protected import-competing sectors and into those sectors which produce exportables. An additional advantage is that if exportables are labour-intensive relative to import-competing sectors (and non-tradable goods), the reallocation of resources leads to increased demand for labour reflected in higher levels of employment or increased wages.

There are, however, a number of dangers in wholesale trade liberalisation .It may lead to a process of deindustrialisation, which, while reflecting static comparative advantage, may undermine a sector which is crucial in terms of the country's dynamic comparative advantage. Structural rigidities may prevent the transfer of resources from those sectors which contract as a result of increased competition from imports, to new activities .Where economies of scale are important in protected sectors, increased import competition may, by reducing the market for local firms, lead to increased costs and less competitive production.

In view of these theoretical arguments and counter-arguments, the impact of trade liberalisation on resource allocation cannot be determined *a priori*. The purpose of this section is to analyse empirically the impact of trade liberalisation since 1985 on resource allocation in Bolivia, with particular reference to the manufacturing sector.

The Size of the Manufacturing Sector

The first question which needs to be considered is whether or not trade liberalisation in Bolivia has led to deindustrialisation. In a neo-classical world, a highly protected sector such as manufacturing before 1985 would be expected to contract as a result of trade liberalisation, while sectors which received negative effective protection, such as mining and some areas of agriculture, would expand.

Analysis of broad sectoral changes in shares of GDP in Bolivia provide some indication of resource reallocation, although in some cases they are masked by counteracting changes in different industries within the same sector. Table IV.1 indicates that since 1985 the shares of mining, manufacturing and public utilities

have increased, while those of agriculture, construction and other services have contracted.

This is consistent with Table IV.1 above which showed that, far from the manufacturing sector contracting after the introduction of trade liberalisation, it grew steadily after 1985. This would seem to contradict the arguments of those pessimists who believe that trade liberalisation will inevitably lead to deindustrialisation.

Table IV.1: Share of GDP by Broad Sector, 1978-1991 (%)

	1978	1985	1991
Agriculture	17.3	22.7	21.3
Mining	11.4	6.5	9.0
Petroleum	5.6	6.3	6.3
Manufacturing	15.2	12.1	13.7
Construction	5.4	3.0	2.7
Utilities	5.9	8.8	9.5
Other Services	36.4	39.4	36.6

Source: INE.

However, the pattern of sectoral change is rather different if 1991 is compared to 1978 when GDP was at roughly the same level (i.e. before the severe economic crisis of the early 1980s). In this case the most striking increases in shares of GDP are recorded in agriculture[8] and utilities (mainly transport and communications). In 1991, the shares of both mining and manufacturing were well below those recorded at the beginning of the period. As far as manufacturing is concerned, this again is consistent with Table III.1 which showed that the recovery after 1985 had not matched the decline in production between 1978 and 1985.

In terms of resource allocation this seem to bear out the expectation that a highly protected manufacturing sector would indeed contract as a result of trade liberalisation, and that the growth in manufacturing after 1985 merely reflects a partial recovery from the very depressed levels brought about by the crisis.

In order to disentangle the impact of trade liberalisation and economic recovery on growth in the manufacturing sector, it is necessary to separate out the different sources of growth of output. Between 1985 and 1991, the share of domestic demand for industrial goods met by imports increased from 42% to 49%. Thus desubstitution of imports had a negative effect on industrial production. Nevertheless, as was seen above, industrial production actually increased over the period 1985-91. What accounts for this? As can be seen in Table IV.2, the loss of output as a result of increased import penetration was

almost matched by increased production for export. However the major contribution to the growth of industrial production came from the recovery in domestic demand.

If, however, one takes the previous peak year of industrial production (1978), as a base, there is a slight increase in domestic demand in 1991 but industrial production is still lower. Over this longer period, although both exports and domestic demand have contributed to increased industrial production, they have been more than offset by desubstitution of imports (see Table IV.2). This explains why, although GDP in 1991 exceeded that of 1978, the share of the manufacturing sector was 1.5% lower in 1991 than in 1978.

Table IV.2:
Contribution of Sources of Growth to Increased Production of Manufactures, 1985-91 and 1978-91 (%)

	1985-91	1978-91
Import Substitution	-13.7 (-15.6)	-10.8 (-12.9)
Domestic Demand Expansion	41.1 (51.7)	2.0 (4.7)
Export Growth	13.3 (13.9)	2.7 (5.5)
Production Growth	41.4 (50.8)	-6.1 (-2.7)

Note: Figures are expressed as a percentage of gross production in the base year. Figures in brackets are for manufacturing excluding National Accounts Sector 19, Base Metals.
Source: Author's elaboration from INE, Boletín de Cuentas Nacionales.

The shift of resources away from manufacturing is even clearer if one looks at changes in employment. Although the number employed in manufacturing fell by 30,000 from its peak in 1980 to 1985 as a result of the recession and the share of manufacturing in total employment fell from 10.3% to 8.7%, 1986 saw a further reduction of 30,000 in employment which reduced the share of manufacturing to only seven per cent. It is unclear how far this was a result of trade liberalisation or of other measures introduced at the same time, particularly the changes in labour legislation which reduced employment protection for workers ('libre contratación'). Whatever the cause, employment levels only began to show signs of increasing again after 1989.

Changing Resource Allocation within the Manufacturing Sector

Patterns of Change

Trade liberalisation not only affects the size of the manufacturing sector as a whole, but also its sectoral composition. Some sectors expand while others contract or stagnate. A first overview of the uneven pattern of development

between sectors, classified according to the branches of manufacturing identified in the Bolivian national accounts, can be obtained from Table IV.3.

A number of sectors grew rapidly (at over 8% per annum) between 1985 and 1991, increasing their share of total manufacturing. The fastest growing sectors were tobacco, dairy products, drinks, sugar and non-metallic minerals. Despite the overall recovery in manufacturing after 1985, three industries, wood, textiles, clothing and leather, and processed meat, contracted between 1985 and 1991 and a number of others grew slowly and remained well below their 1978 peak. Compared to 1978, the only manufacturing industries which had a higher level of output in 1991 were food and drinks, and non-metallic minerals.

Table IV.3:
Growth of Manufacturing Sectors by National Accounts Industries (1980 prices)

	Growth Rates (%)		
Indusrtry	1978-85	1985-91	1978-91
Processed Meats	6.9	-1.5	2.9
Dairy Products	7.2	10.4	8.7
Mills & Bakeries	0.4	1.6	0.9
Sugar	-5.2	8.1	0.7
Other Foodstuffs	7.2	4.7	6.1
Drinks	-1.5	10.2	3.7
Tobacco	-9.9	12.7	-0.1
Textiles etc	-15.0	-2.5	-9.4
Wood	-9.2	-4.6	-7.1
Paper	-6.6	5.6	-1.1
Chemicals	-5.0	1.5	-2.0
Petroleum Refining	-4.5	4.1	-0.6
Non-metallic Minerals	-4.3	8.0	1.2
Basic Metals	-3.6	2.2	-1.0
Metal Products, Machinery and Transport Equipment	-16.3	6.1	-6.6
Other Manufacturing	-4.2	4.1	-0.4
Total Manufacturing	-4.7	4.3	-0.7

Source: Author's elaboration from INE; input-output tables.

Table IV.4 gives a more disaggregated view of the differential growth pattern during the period from 1978 to 1991. The index of manufacturing production is available for 34 four-digit industries, which account for almost 90% of Bolivian industrial output from 1978 to 1991. Table IV.4 presents annual average growth rates of production for three periods 1978-85, 1985-91 and 1978-91.

Table IV.4:
Growth of Volume of Manufacturing Production by 4-digit Industry, 1978 to 1991 (% p.a.)

ISIC	Branch	1978-85	1985-91	1978-91
3692	Cement	-1.1	14.1	5.6
3112	Dairy Products	-1.3	12.0	4.6
3115	Vegetable & Animal Oils	-0.7	10.4	4.3
3133	Beer	-8.9	16.0	1.9
3111	Processed Meat Products	-1.1	4.9	1.6
3523	Soap	-2.4	6.0	1.4
3118	Sugar Refining	-4.5	7.9	1.0
3530	Petroleum & Coal Derivatives	-0.5	2.1	0.7
3134	Non-alcoholic Beverages	-15.0	22.3	0.6
3132	Wines & Fermented Beverages	6.1	-5.8	0.4
3131	Spirits	0.4	-1.0	-0.3
3122	Animal Feed Products	2.4	-3.9	-0.5
3117	Bakery Products	-1.2	0.0	-0.7
3720	Non-ferrous Metals	-3.9	2.3	-1.1
3213	Knitted Textiles	-18.2	22.8	-1.3
3116	Mill Products	1.9	-1.0	-1.5
3113	Canned Fruit & Vegetables	-12.9	13.4	-1.6
3691	Construction Materials	-3.1	-0.1	-1.8
3140	Tobacco	-11.9	11.6	-1.8
3620	Glass	-3.1	-2.1	-2.6
3699	Non-metallic Minerals	-20.2	21.0	-3.3
3420	Printing & Publishing	-8.8	2.9	-3.6
3560	Plastic Products	-7.4	0.4	-3.9
3121	Other Food Products	-4.4	-5.7	-5.0
3511	Chemical Products	-17.8	11.6	-5.3
3211	Spinning and Weaving	-7.5	-3.6	-5.7
3311	Saw Mills	-16.4	6.0	-6.7
3119	Cocoa & Chocolate	-10.4	-3.0	-7.1
3559	Rubber Products	-9.9	-5.2	-7.7
3819	Metal Products	-21.6	9.2	-8.6
3220	Clothing	-15.5	-0.4	-8.8
3240	Footwear	-15.4	-3.6	-10.2
3811	Cutlery, Tools, etc	-33.3	7.0	-17.1
3512	Fertilisers & Pesticides	-13.2	-30.0	-21.4

Source: Author's elaboration from INE, INVOFIM.

As Table IV.4 indicates, ten four-digit industries increased their production between 1978 and 1991. Of these the majority were in food processing (4) and beverages (3). The remaining three sectors were cement, which had the highest growth rate of any industry during the period, soaps and detergents, and petroleum and coal derivatives. At the other end of the scale, ten industries contracted at an average annual rate of over 5%. Of these three were in textiles, clothing and leather, three in chemicals and the two metal product sectors; the

other two were sawmills and cocoa and chocolate. This reinforces the pattern observed at the more aggregate level, where growth was seen to be concentrated in the food and drinks industries, while more technology-intensive industries such as chemicals and metal products, machinery and equipment, declined.

The Impact of Trade Liberalisation on Resource Allocation

How far are the broad changes in resource allocation within manufacturing described in the previous section those that would be expected as a result of trade liberalisation? Trade liberalisation affects resource allocation primarily through changes in the relative prices of import-competing, exportable and non-traded goods. Thus, in order to analyse the impact of trade liberalisation, the 34 industries included in Table III.4 were classified into these three categories.[9]

In general terms, trade liberalisation will bring about changes in the relative prices of importable, exportable and non-traded goods. Specifically liberalisation will reduce the price of importables and non-traded goods in relation to exportables, while increasing the price of non-tradeables with respect to importables. This will lead to an increase in the output of exportables and a reduction in the output of importables. Given certain assumptions about substitutability, the output of non-tradeables will also increase in the medium-to-long term (Edwards and Van Wijnbergen, 1989).

The analysis of the Bolivian situation is complicated by the substantial change which took place in the Real Effective Exchange Rate between 1985 and 1986 as a result of the massive nominal devaluation in August 1985. A real devaluation, as opposed to trade liberalisation, increases the price of both exportables and importables relative to the price of non-traded goods. As a result resources are switched out of production of non-tradables into production of tradables.

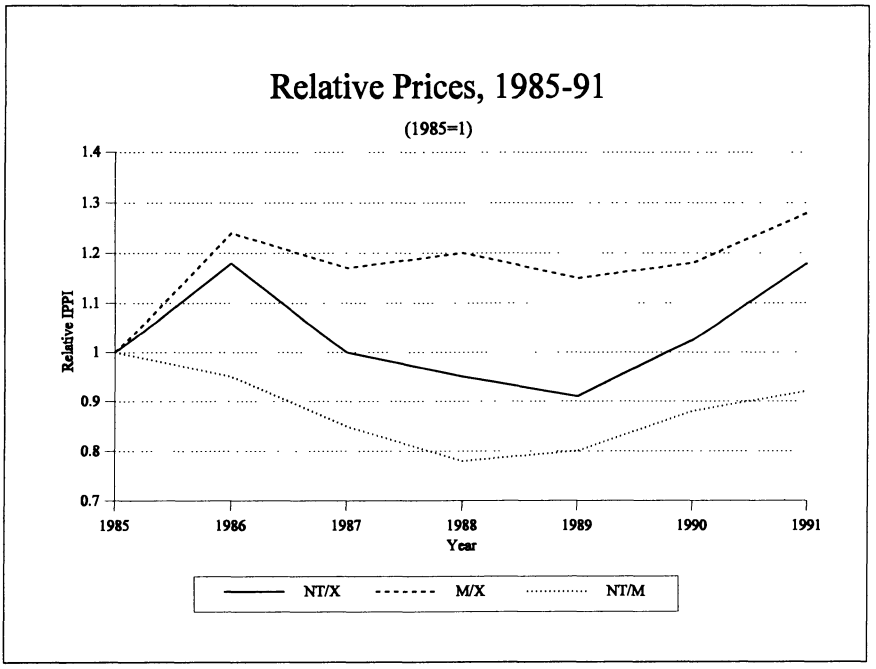
The combined effect of trade liberalisation and devaluation then is unambiguously to reduce the price of both importables and non-traded goods in relation to exportables. The effect on the relative price of non-tradables and importables is ambiguous since devaluation and trade liberalisation act in opposite directions. Consequently resources are expected to be attracted into the production of exportables. Whether or not importables will expand or contract will depend on the relative strength of the devaluation and the import liberalising effect. Finally the effect on non-tradables will depend on the direction of the liberalisation effect and (when positive) its relative strength compared to the effect of devaluation.

This analysis assumes that other factors are held constant. However, a further complicating factor in the Bolivian case was a large adverse terms of trade shock which led to a decline of 33% in the price index for manufactured exports in 1986. This was followed by a further drop of 20% in export prices between 1989 and 1991 (UDAPE, 1992b, Table 2.3.9).

(i) Relative Prices

Figure IV.1 illustrates the changes in the relative prices of exportables, importables and non-tradables between 1985 and 1991. Between 1985 and 1986 the relative prices of both importables and non-tradables increase relative to exportables, reflecting the adverse terms of trade shock. Thereafter, the price of non-tradables falls relative to exportables up to 1989, as would be expected, reflecting the impact of both devaluation and liberalisation. In terms of importables, the price of non-tradables falls between 1985 and 1988 and then rises somewhat between 1988 and 1991. This suggests that the dominant effect in the earlier period was the change in the exchange rate, while in the later period the effects of devaluation had worked themselves through and that continuing trade liberalisation had a more significant impact.

Figure IV.1



Note: NT: Non-Tradables; X: Exportables; M: Importables.

After the initial increase in the price of importables relative to exportables, there is no clear trend in relative prices. This is surprising since liberalisation should lead to a decline in the price of importables in terms of exportables. Between 1989 and 1991, the prices of both importables and non-tradables rise once more relative to exportables, which probably reflects the further deterioration in the terms of trade in these two years.

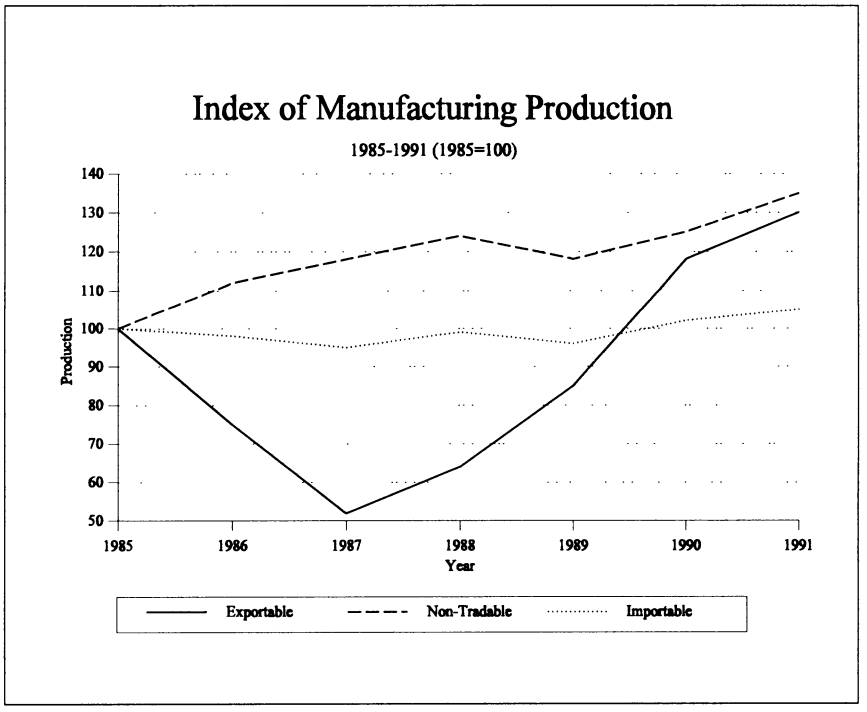
(ii) Output

The adverse terms of trade shock led as might be expected to a decline in the output of the sectors producing exportables between 1985 and 1987 (see Figure IV.2). From 1987 onwards, however, the production of exportables recovered rapidly and the output expansion expected as a result of devaluation and liberalisation occurred.

Production of non-tradables increased steadily throughout the period (with a slight dip in 1989). This is consistent with the relative fall in the price of non-tradables up to 1988 or 1989, but even when the relative price of non-tradables increased, output continued to expand.

Production of importables remained almost constant throughout the period, causing a relative decline in their share of manufacturing output. The increased relative price of importables following the 1985 devaluation did not lead to an expansion of production, as might have been predicted.

Figure IV.2



Why did devaluation not lead to a significant increase in production of import-competing sectors in the 1985-7 period? The most plausible explanation is along the following lines. Before the introduction of the New Economic Policy, as was indicated in Section III, there was a severe shortage of foreign exchange available at the official exchange rate and manufacturers priced consumer goods in relation to dollar prices converted at the black market rate. The devaluation of the official exchange rate therefore did not have such a marked effect on prices as might be expected. At the same time, the costs of imported inputs, some of which were obtained at the official exchange rate, did increase substantially. Add to this the initial effects of trade liberalisation, which affected consumer goods much more than inputs, and it can be seen that the devaluation may not have increased the profitability of import-competing industries.

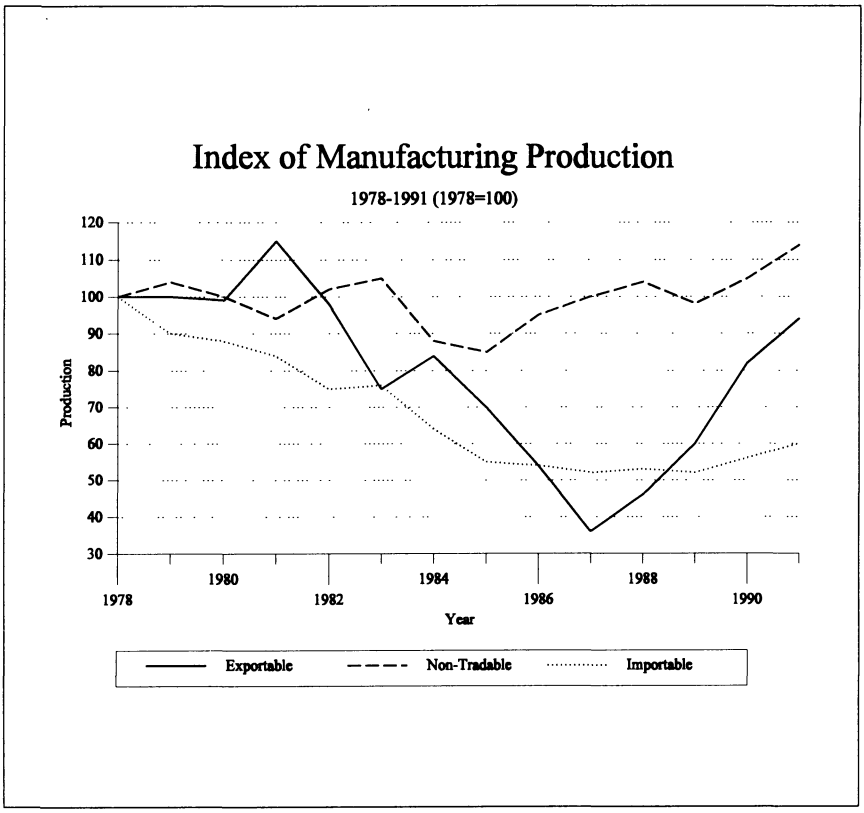
The assumptions made in this model are consistent with the Bolivian situation in the mid-eighties. In particular, responses to the annual manufacturing survey of INE indicated a significant increase in import competition in the mid-eighties. It is also clear that Bolivian industry, particularly the sector producing importable goods, is highly dependent on imported inputs so that devaluation has a major impact on costs.[10] Thus, despite increased prices after 1985 those sectors producing importables were unable to expand production.

In the longer term, the increased openness of the economy has as expected constrained the expansion of production of importables. This has been reflected in the fall in the relative price of importables in the late 1980s and early 1990s leading to a shift in resources to exportables and non-traded goods.

Although the changes in relative prices and resource allocation between 1985 and 1991 are broadly consistent with those predicted by the theory of liberalisation, they are affected to a large extent by the low base from which they started in 1985. The effects of devaluation and liberalisation are confused with the effects of economic recovery from the severe crisis of the mid-eighties. Thus, as in the previous section, it is necessary to look at a longer time period in order to arrive at a final evaluation of shifts in resource allocation.

A starting point for this analysis is 1978, the peak year for Bolivian industrial production and the base year for the Index of Industrial Production (INVOFIM). Unfortunately the corresponding producer price index (IPPI) only goes back to 1985 so that changes in prices between 1978 and 1985 have to be deduced. The appreciation of the Real Effective Exchange Rate in the first half of the 1980s implies that the relative price of non-tradables increased relative to that of tradables. This seems to be borne out by the fall in output of both exportable and importable good industries between 1978 and 1985, while production of non-tradables held up much better, only declining in 1984 when the crisis was at its most intense (see Figure IV.3).

Figure IV.3



When the collapse of tradable production in the early 1980s is taken into account, the increased production of exportables since the mid-eighties is only a recovery of previously lost production. In fact production of exportables was still slightly below its 1978 level in 1991.[11] Since production of importables over the same period has declined, the only growing sector in manufacturing over the longer term has been non-traded goods.

Although in the short-to-medium term it would seem that devaluation and liberalisation had the desired effect of attracting resources into the exportable sector, in the long term resources seem to have been reallocated towards non-traded goods.

Implications of Changes in Resource Allocation

The changes in resource allocation associated with trade liberalisation are not an end in themselves, but are desired by advocates of trade liberalisation for two main reasons. First, it is believed that they will lead to a more efficient allocation of resources by shifting resources out of high-cost industries into low-

cost industries in accordance with the country's comparative advantage. Second, in low-income countries, it is assumed that comparative advantage lies primarily in those sectors of manufacturing which make intensive use of labour. Resources will therefore tend to shift out of capital-intensive industries into labour-intensive industries with positive effects in terms of employment creation.

To what extent have these expectations been borne out in the case of Bolivia? The most appropriate way of examining the proposition that resources have shifted out of high-cost and into low-cost industries would be in terms of the Domestic Resource Costs (DRCs) of different industries in the period before 1985. Unfortunately, there are no data available on DRCs in Bolivia in this period. In the absence of DRC indicators, it is necessary to use the Effective Rate of Protection as a proxy for the DRC.[12]

Data on ERPs in Bolivia before 1985 are only available for the main sectors identified in the national accounts. There are 16 industries identified within manufacturing, of which ERP estimates for 1982 are available for 14 (Econometría, 1987, Table 7). Growth rates of production in constant prices were calculated from the Bolivian national accounts for the post-reform period 1985-91. In view of the possibility that the very depressed level of production in 1985 might have a distorting effect, rates of growth were also calculated for the period 1978-91, in the belief that this might capture longer term effects which were obscured in the shorter term.

Since ERP is only a crude proxy for the Domestic Resource Cost of different industries, but provides some indication of the ranking of industries by cost, Spearman's Rank Correlation Coefficient was calculated. As expected there was a negative correlation between a sector's growth rate and the level of protection in 1982, suggesting that resources have in fact shifted out of high-cost and into low-cost industries. The relationship was significant at the 10% level for the longer period, but not statistically significant between 1985 and 1991.[13]

Is it also the case that resources have shifted out of capital-intensive industries towards more labour-intensive industries? In order to analyse this, combined physical and human capital intensity is proxied by value added per person employed in 1988 (source INE, 1992b). Surprisingly, a positive correlation was observed between growth rates and capital intensity, implying a shift of resources *towards* more capital intensive sectors.[14]

When the relations between capital intensity (KINT), ERP and growth are analysed by multiple regression, both ERP and capital intensity have a significant impact on growth both after 1985 and in the longer term. The equation obtained for the 1985-91 period was:[15]

$$GROWTH = 3.82 - 0.05\,ERP^{*} + 0.28\,KINT^{**} \qquad Adj\ R^2 = 0.48$$
$$(1.858)\quad (-2.205)\quad (3.623) \qquad DW = 3.16$$

* significant at 5% level ** significant at 1% level

An even stronger relationship was found for the longer period, 1978-91:

$$GROWTH = 2.90 - 0.08\,ERP^{**} + 0.21\,KINT^{**} \qquad Adj\ R^2 = 0.59$$
$$(1.654)\quad (-4.275)\quad (3.172) \qquad DW = 1.39$$

These equations confirm that resources have shifted out of high-cost industries, as proxied by ERP, towards low-cost industries. They also indicate that growth has tended to be higher in the more capital-intensive industries, and that this is not a spurious correlation which might be caused by high protection of labour-intensive industries in the pre-liberalisation era.

There is an obvious problem here that the above analysis has been undertaken at a relatively high level of aggregation, which combines heterogeneous activities into broad sectors. Can the effects of trade liberalisation on resource allocation described above be confirmed at a more disaggregated level? In order to attempt to do so, it is necessary to look at growth rates at the 4-digit level of the ISIC.

Unfortunately, estimates of ERP before liberalisation are not available at the 4-digit level; therefore, average nominal rates of protection had to be used, taken from Econometría (1987), Appendix D.3. This is an even more imperfect measure of cost than the ERP used as a proxy for DRC above, but it is the only indicator available.

The data available to measure capital in Bolivia are not very reliable and so two ratios, calculated from INE data on firms employing more than 15 employees, have been constructed. Value added per person employed is used as an indicator of combined physical and human capital, while electricity consumption per person employed is used as a proxy for fixed capital intensity.

In order to explore the characteristics of growing and declining industries, thirty-three 4-digit industries[16] were classified into three groups according to the average annual rate of growth of output between 1978 and 1991, and 1985 to 1991, as measured by the INVOFIM. Table IV.5 sets out the unweighted average rate of protection for each group of industries, and the average

employment-weighted capital-intensity for the three groups of industries in the two periods.

The data seem at first sight to confirm the previous finding that the industries which have grown most rapidly in both periods have tended to have below average protection in 1982, while those industries which have contracted most had above average protection levels.

Table IV.5: Protection and Capital Intensity Indicators, 1978-91 and 1985-91

GROWTH (% p.a)	PROT (%)	VA/L (000Bs)	K/L (000Bs)
		1978-91	
Gr>0%	22.6	46.9	2.04
0>Gr>-5%	27.6	24.2	1.23
-5%>Gr	31.8	17.9	0.91
		1985-91	
Gr>10%	22.0	49.2	2.24
10%>Gr>0	25.5	24.8	0.98
0>Gr	33.6	20.3	1.32
Average	27.6	30.9	1.44

Notes: Gr - growth
VA/L - value added per person employed, 1989
K/L - electricity consumption per person employed, 1989
PROT - average nominal tariff, 1982
Bs - Pesos Bolivianos

Source: Author's elaboration from INE data and Econometría (1987), Appendix D.3.

Table IV.5 also confirms the other finding at the more aggregated level, that it is relatively capital-intensive industries which have grown most rapidly. This is the case over both periods, and for both indicators of capital intensity. Conversely, industries which have shown a tendency to contract have been relatively labour-intensive.

The results of running multiple regressions, with growth as a dependent variable, suggests caution in assuming a link between the initial level of protection and growth, since there was no statistically significant relation with the level of nominal protection. However, the paradoxical results for capital intensity received further confirmation and were significant at the 5% level in both periods.[17]

It may be that the nominal rate of protection is a rather poor indicator of differences in Domestic Resource Cost in different industries, and one cannot reject the view, supported by ERP data, that resources have shifted towards lower cost industries over the period under study.

What is more in need of explanation is why resources appear to have shifted out of labour-intensive industries and into relatively capital-intensive industries. This is less difficult than it might seem. In the conventional analysis of trade liberalisation in developing countries, it is usually assumed that in terms of factor intensity exportables are relatively labour-intensive, import competing industries relatively capital-intensive and non-tradables in between (cf. Edwards and van Wijnbergen, 1989). In Bolivian manufacturing, however, import-competing industries have been the most labour-intensive, and non-tradables the most capital-intensive industries.[18]

Since trade liberalisation has led to the contraction of the importables sector, and since non-traded good industries have done relatively well, particularly over the longer term, as was seen above, it is not surprising that output growth has been concentrated in relatively capital-intensive industries while labour-intensive industries have contracted.

Conclusion

Having looked in some detail at the changes in resource allocation in Bolivia, what provisional conclusions can be drawn? First, although manufacturing output has grown since 1985, both in absolute terms and as a share of GDP, it can still be argued that trade liberalisation has contributed to a shift in resources away from the manufacturing sector in the long term, since output has not regained its 1978 peak and import penetration has increased significantly.

Second, it is evident that trade liberalisation has also had an important impact on resource allocation within the Bolivian manufacturing sector. Resources have been shifted out of import-competing industries and into non-tradable good industries and export industries. The long term effect on the export industries has been dampened, however, by the adverse terms of trade movements which have acted as a negative shock on prices of exportables.

The unexpected conclusion as far as resource allocation is concerned is that resources have shifted away from labour-intensive industries towards more capital-intensive industries. This partly reflects the fact that – contrary to expectations – import-competing industries in Bolivia were relatively labour-intensive, while non-tradable good industries were the most capital-intensive.

Putting it another way, while there is some evidence that trade liberalisation has had the expected effects in terms of shifting resources towards those industries in which Bolivia enjoys a comparative advantage, the further assumption that this can be explained in terms of a two factor Hecksher-Ohlin-Samuelson (H-O-S) type model does not stand up to examination.

V: TRADE LIBERALISATION AND PRODUCTIVITY GROWTH

As was seen in Section II, it has been suggested that more open economies tend to have higher rates of productivity growth than inward looking ones and that trade liberalisation contributes to improvements in productivity. Thus, one of the key indicators of the success of trade policy reform is the effect which it has on the level and growth of productivity within the economy.

In order to assess these claims, this section will look at productivity growth in the Bolivian manufacturing sector as a whole and at a more disaggregated level. The first part considers the *prima facie* evidence that there has been a significant improvement in productivity in Bolivian manufacturing following the introduction of the New Economic Policy. The second part considers the evidence regarding the various mechanisms through which trade liberalisation may affect productivity, while the third involves an econometric examination of the determinants of productivity growth in order to identify the contribution of key trade variables. Finally, the experience of six industries in the late 1980s and early 1990s is discussed to put more flesh on the bare bones of the earlier analysis.

Has Productivity Increased in the Manufacturing Sector?

Productivity in the Manufacturing Sector as a Whole

The first question which must be considered is whether or not productivity has increased in Bolivian industry in the aftermath of the trade liberalisation under the NEP. Although ideally one might wish to look at Total Factor Productivity (TFP), this is impossible to calculate for the Bolivian manufacturing sector because of the absence of time-series data on the capital stock, or indeed even reliable estimates of fixed investment in manufacturing. Even if the data had existed, there would have been major problems of valuation because of the high inflation of the early 1980s, which would have made any attempt to calculate the capital input extremely difficult.

Even calculating a time series for labour productivity is not without its problems. A first difficulty in measuring productivity in Bolivian manufacturing is the existence of a number of different estimates of total employment in the manufacturing sector. There are three main sources of employment data over time. The first is for employment in manufacturing and artisan activities and is derived by UDAPE from data from the Instituto Nacional de Estadísticas (INE) and the Ministry of Labour. A second source is official estimates based on data from the Planning Ministry and the Ministry of Labour. These estimates are lower since presumably artisans are not included. Finally INE provides figures on manufacturing employment from its own manufacturing surveys, but these

considerably understate total employment since the coverage of the surveys is partial.

The existence of such different estimates presents a problem in terms of attempting to measures labour productivity. It was decided to use the estimates of manufacturing employment, excluding artisans for this purpose, because it was felt that the data from the INE surveys were partial and affected by changes in coverage, while the data on employment in manufacturing and artisan activities probably included a significant number of people who were essentially underemployed and that this would obscure any changes in productivity.

In calculating labour productivity for the manufacturing sector as a whole, output was measured by manufacturing value added in constant 1980 prices, taken from the Bolivian national accounts tables. Table V.1 indicates the major trends in productivity over the period from 1976 to 1990. This shows that labour productivity declined considerably as manufacturing output contracted between 1978 and 1985, as indeed would be expected in a recession. There was a sharp increase in productivity in 1986, as a result of the substantial reduction in employment in that year, following which productivity fluctuated around its new higher level.

A number of factors can determine the level/growth of productivity in industry. There is a well-established relationship between output growth and productivity growth (Verdoorn's law) in many branches of economic activity. In manufacturing this has been attributed by Kaldor to the existence of dynamic increasing returns associated with skill and learning effects in the labour force and technological progress.[19]

Table V.1: Labour Productivity in Manufacturing (Mfg), 1976-1990

	Mfg. GDP (1980 Pesos) (mn)	Mfg. Employment ('000)	Productivity (1980 Pesos) ('000)
1976	16886	156.3	108.0
1977	18059	160.5	112.5
1978	18881	166.1	113.7
1979	18578	172.7	107.6
1980	17974	177.1	101.5
1981	16581	168.4	98.5
1982	14531	155.5	93.4
1983	14558	150.2	96.9
1984	14707	149.3	98.5
1985	13483	147.1	91.7
1986	13742	117.1	117.4
1987	14087	118.1	119.3
1988	14852	125.1	118.7
1989	15374	117.5	130.8
1990	16250	130.3	124.7

Note: 1 million pesos = 1 boliviano
Source: INE; UDAPE.

Capacity utilisation also has an impact on productivity since costs rise when plants operate below capacity. In order to test for the effects of liberalisation on productivity, a model was constructed in which productivity was a function of growth in value added, capacity utilisation and a dummy variable to represent trade liberalisation set at 0 up to 1985 and 1 from 1986 onwards.[20]

Using the data from Table V.1 as the dependent variable, the regression equation obtained was:

$$VA/L = 53.5^{*} + 0.004\,MFG^{*} - 0.35\,CAPUT + 27.5\,LIB^{*}$$
$$(4.27) \quad (3.43) \quad (-0.77) \quad (9.44)$$

$$Adj\ R^2 = 0.92; \qquad DW = 2.11$$

* – significant at the 5% level (t-statistics in brackets)

VA/L – value added per person employed
MFG – manufacturing GDP
CAPUT – capacity utilisation
LIB – liberalisation dummy

Not surprisingly, in view of the substantial increase in labour productivity in 1986 noted earlier, this shows that trade liberalisation was associated with an increase in the level of productivity, with the dummy variable being highly significant. As expected there was also a positive correlation with the level of manufacturing output, although surprisingly the level of capacity utilisation was not significant.

When the rate of growth of labour productivity rather than its level was used as a dependent variable, the liberalisation dummy was only significant at the 10% level and neither growth nor capacity utilisation were significant. This suggests that liberalisation may have led to a once and for all increase in productivity, but leaves open to question whether or not it led to a faster rate of productivity growth.

Productivity Growth at the Industry Level

The evidence that labour productivity in the manufacturing sector increased after 1985 does not of course indicate that this was necessarily associated with trade liberalisation since many other changes took place at the same time. Therefore, in order to investigate further the relationship between trade liberalisation and productivity growth, it is necessary to construct estimates of productivity at a more disaggregated level.

An index of productivity was derived from two data sets from the INE surveys of manufacturing. Production was taken from the index of manufacturing production (INVOFIM) which gives an index of volume of production for 34 four-digit manufacturing industries from 1978 to 1991. Employment was derived from the index of workers employed, which is also available at the four-digit level for the period 1987 to 1991, with a base year of 1980. In total this gave 27 four-digit industries for which it was possible to calculate an index of output per worker for 1987 to 1991 with 1980 as a base year.

This index is subject to a number of limitations since the numerator is a physical index of production and does not take into account changes in the value added content of the product which might distort the output measure. Equally, the denominator only includes workers and not employees or managers. While this is a useful indicator of productivity at the plant level, it will not necessarily reflect overall firm-level productivity changes. However, it is the best indicator available and does at least give some indication of the orders of magnitude of productivity growth in different four-digit manufacturing industries.

In order to test for the possible impact of trade liberalisation on productivity growth, a regression was run using changes in the Nominal Rate of Protection (NRP) between 1982 and 1988 as an independent variable, and the rate of growth of productivity between 1987 and 1991 as the dependent variable. Although it would have been preferable to use the Effective Rate of Protection (ERP) rather than the NRP, this is not available at the 4-digit level and therefore NRP has been used as a proxy. The NRP was calculated on the basis of import duties actually paid and therefore took into account any duty exemptions.

As in the case of the time series analysis, output growth and capacity utilisation were also used as explanatory variables. (In the latter case, the level of capacity utilisation at the beginning of the period (1987/8) was used, with the expectation that a low initial level of utilisation would provide more scope for increased productivity over the period.)

The resulting equation was obtained:

$$LP(1987\text{-}91) = \underset{(0.98)}{8.29} + \underset{(5.17)}{0.65\,GR^{*}} - \underset{(-1.62)}{0.27\,CAPUT} - \underset{(-3.10)}{0.24\,DPROT^{*}}$$

$$\text{Adj } R^2 = 0.57 \qquad DW = 2.11$$

where
LP – Labour productivity growth
GR – Output growth
DPROT – Change in nominal protection (1982-88)

Both output growth and capacity utilisation have the expected sign, although the latter is not statistically significant. The change in NRP between 1982 and 1988 is found to be negatively related to the rate of productivity growth. Since protection fell for most industries, this meant that the larger the reduction in the NRP, the faster the rate of productivity growth. This is obviously consistent with the view that trade liberalisation in Bolivia has led to productivity growth.

Mechanisms Linking Trade Liberalisation and Productivity Growth

Although the previous section suggests that liberalisation in Bolivia has been accompanied by an increase in the level of productivity, it does not necessarily establish a causal link. If productivity is indeed a result of trade liberalisation, this should be via the mechanisms identified in Section II: competitive effects; scale effects; and import availability effects. In this section, each of these effects will be examined in turn. If there is evidence of increased competition, rationalisation or increased availability of imported inputs, then it will be necessary to analyse whether there is any link between them and productivity performance. If, however, there is no such evidence, it is likely that the supposed effect of liberalisation has not operated in the Bolivian case.

Import Discipline

Trade liberalisation is likely to result in greater competition for domestic producers from imports. One indicator of this for the manufacturing sector is the share of imports in domestic demand, defined as domestic production plus imports minus exports.

Table V.2 shows a clear pattern with the share of imports dropping from just over 40% in the late 1970s as the economic crisis limited the availability of imports. By the end of 1985, however, the level of import competition had recovered to that of the late 1970s and by the early 1990s imports accounted for almost half the demand for manufactures in Bolivia. This does support the view that Bolivian industry has faced increased competition from imports in the aftermath of liberalisation.

Although liberalisation has taken place (almost) across the board, its impact in terms of import competition differs considerably from industry to industry. It has been most marked in the textile, clothing and leather industry. Increasing import shares have also occurred in wood and wood products, chemicals, non-metallic minerals and metal products and equipment. On the other hand, in some industries the share of imports has in fact declined compared to the late 1970s, against the general trend. Industries where foreign competition has decreased include dairy products, sugar, miscellaneous food products, tobacco, and petroleum products. In some of these industries, the changes in trade policy in fact increased the Effective Rate of Protection initially as in the case of dairy

products and other food products, and some, particularly sugar and vegetable oils (included in miscellaneous food products), continued to receive non-tariff protection.

Table V.2: Share of Imports in the Domestic Demand for Manufactured Goods, 1978-1991

Year	Import Competition (%)
1978	41.5
1979	41.2
1980	34.5
1981	39.9
1982	33.7
1983	30.5
1984	36.6
1985	41.9
1986	47.8
1987	47.9
1988	47.0
1989	45.0
1990	48.7
1991	49.3

Note: Import competition is the share of imports in domestic demand (calculated as gross production + imports - exports) at constant 1980 prices.
Source: Author's elaboration from INE data.

There is therefore strong evidence that the import discipline effect of trade liberalisation may indeed operate in Bolivia. However the importance of this effect is likely to differ considerably between different industries, an issue which will be taken up later.

Scale Effects

The second mechanism through which trade liberalisation can increase productivity is through the rationalisation of previously protected industries which enables them to take advantage of economies of scale. Unfortunately, Bolivia has never carried out the kind of industrial census which would be needed in order to examine in detail the impact of trade liberalisation on industrial structure. The most comprehensive surveys carried out to date, in terms of coverage, are the Censos de Establecimientos Económicos of 1983 and 1992, which covered 150,000 and almost 250,000 establishments in all sectors respectively. However the data collected were very limited (mainly employment) and have only been published in very aggregated form.

Table V.3 compares the distribution of employment by size of firm in 1983 and 1992. This shows a very clear pattern - employment has increased, both absolutely and relatively, in all sizes of firms except the largest (firms

employing 50 or more) where it has fallen markedly. This supports the view that trade liberalisation in Bolivia has been accompanied by a process of 'informalisation' of the manufacturing sector, rather than rationalisation and larger scale production.

Table V.3: Employment by Size of Manufacturing Firms, 1983, 1992

Size	1983 Employment	1992 Employment	1983 (%)	1992 (%)
1-4	20,140	22,970	27.0	29.9
5-9	8,612	10,454	11.5	13.6
10-14	3,313	4,564	4.4	5.9
15-19	2,425	3,112	3.2	4.1
20-24	1,652	2,887	2.2	3.8
25-29	2,030	2,072	2.7	2.7
30-39	2,608	3,147	3.5	4.1
40-49	1,800	2,301	2.4	3.0
50-	32,046	25,211	42.9	32.8
All	74,626	76,718	100.0	100.0

Source: INE, Censos de Establecimientos Económicos, 1983 and 1992.

This hypothesis needs to be examined further, however. The data presented above suffer from two major limitations. First, the fact that firms are becoming smaller in terms of employment does not necessarily mean that they are contracting output, since productivity may have increased over the period. Second, since the timing of the Census does not coincide exactly with the period of liberalisation, it is possible that part of the observed change occurred prior to liberalisation.

This can partly be overcome by using data from the INE annual surveys of manufacturing (Formulario Económico Unico) which in recent years have covered between 700 and 1000 establishments. Although the data from the Formulario Económico Unico are inadequate in terms of coverage of the manufacturing sector as a whole, they are fairly comprehensive as far as establishments employing 15 or more workers are concerned. They can therefore be used to identify trends amongst the largest Bolivian manufacturing firms.

The NEP reforms were introduced in August 1985 and the introduction of a uniform tariff of 20% occurred a year later. Table V.4 uses 1986 as a base year to compare with 1990, the latest year for which processed data is available. Table V.4 shows a number of trends. First, there has been a slight increase in the total number of establishments with 15 or more employees from 338 in 1986 to 364 in 1990. Second, employment in this group of firms has contracted by almost a quarter over this period. Third, total value added has remained virtually unchanged in real terms. Since both total employment in manufacturing

and total manufacturing value added increased during this period, this implies that large firms have lost ground *vis-à-vis* smaller firms. Finally, the average size of establishment in terms both of value added and the average number of persons employed has fallen.

Table V.4:
Selected Indicators for Manufacturing Establishments with 15 or more Employees, 1986, 1990.

	1986	1990
No. of Establishments	338	364
Employment	43,491	32,958
Employment per Establishment	129	91
Value Added (1986 prices)	Bs 948.3mn	Bs 923.9mn
Value Added per Establishment	Bs 2.8mn	Bs 2.5mn

Source: Author's elaboration from INE data.

Surveys by the Cámara Nacional de Industria confirm that there has been a reduction in the average size of firms employing more than 15 employees in terms of value added between 1987/8 and 1990/91 (my calculation from CNI data).[21] Thus both the INE and CNI data contradict the view that trade liberalisation will lead to a process of industrial rationalisation enabling firms to take advantage of economies of scale. In fact trade liberalisation appears to have been accompanied by further informalisation of the manufacturing sector and increased production by small-scale producers. This view is given further support by evidence of the rapid growth of employment in family firms in the major Bolivian cities between 1985 and 1991 (Montaño and Villegas, 1993, Ch.IV).

Import Availability

A final way in which trade liberalisation may lead to better productivity performance is through greater access to imported inputs and capital goods. Restrictive trade regimes may make it difficult for manufacturers to obtain the inputs or equipment which they require. Liberalisation increases the availability of such imported inputs.

Table V.5 shows the evolution of imports of consumer goods and of inputs and capital goods for the industrial sector since the late 1970s. There was a significant decline in Bolivia's capacity to import during the early 1980s, and this is reflected in the sharp reduction in imports of both consumer goods and capital goods in the 1982-5 period compared to 1977-81. Imports of inputs for the industrial sector were given priority during the crisis and held up rather better.

After 1985 there was an improvement in the situation and imports of both inputs and capital goods for the industrial sector increased slightly. Imports of capital goods however remained well below the level of the late 1970s and early 1980s. The most significant increase in imports took place in consumer goods.

Table V.5: Imports of Inputs and Capital Goods for the Industrial Sector (US $ million.)

	1977-81	1982-85	1986-92
Inputs	217.4	201.9	219.1
Capital Goods	210.5	133.9	153.0
Consumer Goods	173.4	97.6	152.4
All Imports	818.0	577.6	698.4

Source: INE.

There is little doubt that in the period immediately before the trade reforms of the mid-1980s, access to imports did represent a problem for Bolivian manufacturers. Between 1983 and 1986, lack of foreign exchange consistently ranked as one of the most important factors accounting for under-utilisation of capacity in Bolivian industry (see Table V.6). After 1986, the proportion of firms identifying this as a cause of capacity under-utilisation declined significantly.

Further evidence to support the view that access to imported inputs improved after 1986 is obtained from data on the share of imported inputs in total inputs for the major Bolivian manufacturing firms which increased by more than half, from 24.7% in 1986 to 37.3% in 1988 (my elaboration from the data of the INE manufacturing surveys).

However, what is unclear is whether or not the increased availability of imported inputs and capital goods is primarily a result of trade liberalisation or of other factors. In fact, looked at from a balance of payments point of view, the major factor which has led to an improvement in Bolivia's capacity to import since 1985 has been a reduction in debt service payments, which is only indirectly connected to the trade liberalisation programme.

While the increased level of imports is primarily a result of other factors, changes in the composition of imports do partly reflect the effects of trade liberalisation. The fact that it is imports of consumer goods which have increased most significantly since liberalisation and have increased their share of imports, while imports of inputs and capital goods for industry have seen their shares decline, is consistent with Rodrik's 'import compression' hypothesis. The fact that imports of inputs and capital goods have not been compressed (in absolute terms), reflects the improved financial terms that Bolivia has been able

to obtain from multilateral and bilateral donors, as a result of adopting trade and other economic policy reforms.

Table V.6:
Causes of Capacity Under-utilisation in Manufacturing, 1983-88 (% of responding firms)

	1983	1984	1985	1986	1987	1988
Lack of Operating Capital	16	16	17	15	7	3
Lack of Primary Inputs	58	56	43	31	8	4
Strikes	40	56	35	11	3	0.1
Labour Instability	15	21	22	5	0.5	0.2
Lack of Skilled Labour	4	5	5	4	1	0.5
Obsolete Equipment	12	14	12	11	3	1
Lack of Spare Parts	22	24	15	9	1	0.7
Lack of Demand	46	40	54	58	16	20
Lack of Foreign Exchange	45	48	54	58	16	20
Lack of Storage/Capacity	0.5	0.6	0.9	1	0.5	0.01
Competition from Imports	21	22	37	38	25	31

Source: INE manufacturing surveys.

Conclusion

From the above discussion, it appears that both the 'import discipline' effect and the 'input availability' effect of trade liberalisation could have had some impact on productivity in Bolivian industry. However there is no evidence of rationalisation having taken place so that there is no reason to suppose that scale effects could have influenced productivity. In the next section, therefore, the focus will be on the first two effects.

Determinants of Productivity Growth

Time Series Analysis

It was seen above that the level of productivity in the manufacturing sector was significantly higher in the period after the introduction of the NEP, but that the results in terms of productivity growth were much less clear cut. In order to test the effects of trade liberalisation on productivity, a model of the domestic determinants of productivity growth is developed and then trade variables are introduced to see their explanatory significance.

The main domestic determinant of the rate of productivity growth is expected to be the rate of growth of output. However, it is clear from the data in Table V.1 that there was a substantial upward shift in labour productivity in Bolivia between 1985 and 1986, which could not be explained by the very limited growth in output in that year. Moreover, it is known that major changes were made in Bolivian labour legislation as part of the NEP which made it much

easier for firms to lay off workers. In order to take account of this once-and-for-all increase in labour productivity, a dummy variable was introduced with a value of 1 in 1986 and 0 in all other years. Equation 1a in the table below shows that when such a dummy variable (DUM) is included, the growth of manufacturing value added (MFGgr) is an important determinant of productivity growth.

In Equation 1b, the change in the level of capacity utilisation (DCAPUT) is introduced as a further factor influencing productivity growth. Unfortunately, there is a high degree of collinearity between changes in capacity utilisation and growth in output, and as a result neither variable is significant. Since two observations are also lost when changes in capacity utilisation is introduced, it is not included as an independent variable in the remaining equations.

Determinants of Productivity Growth, 1976-91

Equation	1a	1b	1c	1d
Constant	-0.58 (-0.47)	-0.69 (-0.46)	8.44 (0.74)	-0.57 (-0.46)
MFGgr	0.49* (2.42)	0.55 (1.79)	0.58** (2.12)	0.49* (2.31)
DUM	27.6* (6.24)	28.9* (5.11)	29.0* (5.85)	27.8* (5.78)
DCAPUT		-0.33 (-0.50)		
MCOMP			-0.22 (-0.81)	
DMIMP				0.003 (0.18)
Adj. R^2	0.77	0.75	0.77	0.76
DW	2.42	2.39	2.47	2.37
Observations	14	12	13	14

Note: Figures in brackets are t-statistics.
* - significant at 5% level; ** - significant at 1% level

The 'import discipline' hypothesis predicts that a high level of import competition will lead to rapid productivity growth. Contrary to expectations, however, Equation 1c indicates a negative coefficient on the import discipline variable (MCOMP) although it is not significantly different from zero.

Finally, it is expected that increases in the availability of imported inputs will have a positive effect on productivity growth. In this case, the growth of imported inputs (DMIMP) is positively related to productivity growth but – as with import competition – is not significant (see Equation 1d).

What emerges from these figures is a clear and sharp increase in productivity in 1986, which is consistent with the earlier finding that the level of productivity was substantially higher in the period following the introduction of the New Economic Policy. However, it is difficult to explain this in terms of the trade policy aspects of the NEP. First, the effects of trade liberalisation are not likely to be felt immediately, particularly as the main reductions in tariffs only came about in 1986. Second, there is no evidence to indicate that the mechanisms through which trade liberalisation is meant to lead to improved performance were an important factor determining the rate of productivity growth during the period. These findings are, however, consistent with the view that changes in Bolivian labour legislation which made it easier for firms to lay off workers contributed to the increased level of labour productivity.

Cross-Section Analysis

In order to explore further the determinants of productivity growth, the performance of 27 4-digit manufacturing industries will be examined in this section. There are substantial intra-industry differences in productivity performance, which raises the question of the determinants of productivity growth at the industry level.

The Verdoorn effect linking output and productivity growth applies at the industry level as well as to the manufacturing sector as a whole, so that the growth of output is expected to have a major influence on productivity. Similarly, changes in capacity utilisation also affect industry productivity growth. In addition, there may be industry specific variables which influence the underlying rate of technical progress and hence productivity growth in an industry. One such variable is the level of concentration in the industry, although there are conflicting theories as to whether the relationship between concentration and technical progress is positive or negative. It is also possible that more capital-intensive industries have greater possibilities of increasing productivity than labour-intensive industries.

Once a model of the determinants of productivity growth has been established, it is possible to consider the effects of various trade variables on productivity. The import discipline hypothesis suggests that those industries most subject to competition from imports will have the fastest rate of productivity growth. The import availability argument implies that it is industries which rely heavily on imported inputs which will perform best when trade is liberalised. Finally, the orientation of an industry towards the international or the domestic market may also be an important factor determining productivity

growth, with industries which have to compete on the international market expected to have a higher rate of productivity growth.

Data on employment at the 4-digit level were only available for the period from 1987 to 1991. However, this period can be taken to represent the effects of trade liberalisation on productivity growth after the short-term, once-and-for-all, effects had taken place. It is, therefore, particularly relevant in terms of addressing the question of whether trade liberalisation affects the growth, as opposed to the level, of productivity.

Determinants of Productivity Growth 1987-91 at 4-digit Level

Equation	2a	2b	2c	2d	2e
CONST	15.2 (1.61)	13.5 (1.37)	15.4 (1.47)	18.7 (1.67)	16.1 (2.06)
PROD	0.59* (4.06)	0.61* (4.08)	0.58* (3.69)	0.54* (3.33)	0.98* (5.99)
CAPUT	-0.31 (1.59)	-0.31 (1.59)	-0.31 (1.55)	-0.33 (1.67)	-0.32 (2.03)
MCOMP		0.07 (0.72)			
MCONT			-0.67 (0.06)		
MSHARE				-4.32 (0.61)	
XRATIO					-0.38* (3.51)
Adj R^2	0.42	0.40	0.39	0.40	0.60
DW	2.06	2.02	2.06	2.08	2.00
Observations	27	27	27	27	27

Note: Figures in brackets are t-statistics
* – significant at 5% level.

The two industry-specific variables considered that might have an effect on productivity growth were the four-firm concentration ratio and electricity consumption per person employed (a proxy for capital-intensity); however, neither was significant, and were not included in the regressions. The basic model, therefore, included growth of production (PROD) and capacity utilisation (CAPUT) as independent variables. Capacity utilisation was not significant at the 10% level, but was kept in the equation because it had the correct sign and improved the fit of the equation (see Equation 2a above).

As was indicated above, there is an apparent cross-section relation between the reduction in protection in an industry and the rate of productivity growth. If trade liberalisation had indeed led to faster productivity growth in the 1987-91 period, then it is to be expected that it did so through one of the major mechanisms identified previously.

Equation 2b tests the import discipline hypothesis that productivity growth will be fastest in those industries which are subject to most competition from imports. In order to analyse the impact of import competition, the share of imports in the total value of production plus imports (MCOMP) for each four digit industry was calculated from unpublished INE data. The data are only available for 1988, but this is not too serious a problem since, as was seen above, the increase in import competition compared to the late 1970s had already taken place by the late 1980s. Although the coefficient for import competition is positive as expected, it is not significantly different from zero, so that the import discipline hypothesis is not confirmed.

The second hypothesis to be tested is that the increased availability of imported inputs has increased productivity. If this were indeed the case, then it would be expected that industries which rely heavily on imported inputs would have experienced the largest increases in productivity following liberalisation.

To test this hypothesis, two variables were used, the ratio of imported inputs to the value of production in an industry (MCONT), and the ratio of imported to total inputs (MSHARE). These ratios were calculated from the INE manufacturing surveys for 1989, the last year for which data on inputs separated into domestic and imported was available. It was appropriate to use this data because what is relevant is the extent to which an industry would use imported inputs when import restrictions were minimal, and such conditions had been achieved by 1989.

Contrary to expectations, equations 2c and 2d both indicate a negative relationship between productivity growth and dependence on imported inputs, however measured, in the 1987-91 period, although in neither case is this statistically significant.

Finally, Equation 2e examines the impact of trade orientation on productivity growth, using the share of exports in total output (XRATIO) in 1988, as the independent variable. In this case it is expected that those industries which sell a higher share of their output on international markets will have the strongest productivity growth. Contrary to expectations, the coefficient on the export variable is negative and highly significant.

Thus, despite the apparent relationship between productivity growth and changes in protection levels in different industries, there is no evidence to

support the view that any of the mechanisms through which trade liberalisation has been claimed to affect productivity are operative. Indeed, of the trade variables considered here, only import competition had the expected sign, while only the export ratio was statistically significant, but with the wrong sign.

Case Studies

In order to try and throw further light on this paradox, a number of four digit industries were analysed in depth over time. The industries chosen include some which faced substantial import competition after 1985 and some which were relatively immune to import competition. They also include some which depend mainly on imported inputs and others which depended more on local inputs. The industries also represent contrasting situations in terms of output and productivity growth.

Spinning and Weaving (3211)

Spinning and weaving was one of the industries which was worst hit by trade liberalisation. Producers experienced a double negative effect, first through a significant increase in competition from imported yarns and fabrics, and secondly through the stagnation in domestic clothing production, which was also hit by increased imports after 1985. As a result, production in 1991 was 20% lower than in the mid-1980s (Table V.7).

Although a number of firms in the industry rely heavily on imported inputs (particularly of dyes, chemicals and synthetic fibres), trade liberalisation has had little positive impact in terms of access to imported inputs since these were usually either subject to low tariffs or imported with exemptions before 1985. Indeed the ending of the overvaluation of the peso boliviano meant an increase in the cost of imported inputs, particularly for manufacturers of synthetic fabrics (PREALC, 1989, p.15). Thus, the overall impact of liberalisation on the industry was highly negative.

Table V.7: Indicators for the Spinning and Weaving Industry

	INVOFIM (1978=100)	Permanent Workers (1980=100)
1980	82.9	100.0
1985	57.9	n.a
1986	58.2	56.4
1987	58.8	57.2
1988	54.2	49.1
1989	39.0	32.0
1990	34.0	29.3
1991	46.5	35.5
1992	n.a	33.5

Notes: INVOFIM - index of physical volume of manufacturing production.
n.a. - not available
Source: Instituto Nacional de Estadística.

As a result of declining domestic demand and increased import competition, a number of textile firms went out of business or severely cut back their activities during the late 1980s and early 1990s. Firms which closed down included MASA which had been the largest textile factory in Bolivia, FENIX and Lanficio Boliviano 'Domingo Soligno'. Other firms laid off workers and scrapped part of their capacity. Employment in the industry fell by 40% between 1986 and 1992 (see Table V.7).

These changes within the textile industry led to a contraction in the average size of firm and a growth of small-scale informal activities. The fragmentation of production which prevents firms from producing long runs and taking advantage of economies of scale has been noted as a major problem in this industry (Arana, 1991, p.22). Moreover, levels of capacity utilisation have remained low.

There is little evidence of new investment or changes in technology or organisation which would lead to increased productivity in the industry. Not surprisingly in view of the decline in production, there has been very little investment in the industry (World Bank, 1991, Table 5.4). Nor has there been any introduction of Just-in-Time and Total Quality Control methods in the industry (Triana and España, 1990, p.7).

In so far as there has been an increase in productivity in the industry, this is a result of the closure of some of the most inefficient firms and the scrapping of obsolete equipment, as part of the downsizing of the industry. However, the industry remains technologically backward by international standards, or even those of other Andean countries, particularly in natural fibres (cotton and wool). Moreover, increases in productivity of this kind, which reflect the elimination of marginal capacity, do not represent any technological progress, and cannot sustain long-run productivity growth.

Knitting (3213)

Production of knitted textiles was hit very badly by the crisis of the first half of the 1980s and in 1985 was less than a quarter of its 1978 level. Since most producers were integrated with clothing production, they were affected by the decline in household demand for clothing and increased levels of smuggling which hit clothing more than yarn and fabrics (see below). Production recovered from the trough of 1985 making the industry one of the fastest growing in the late 1980s and early 1990s. Nevertheless, in the early 1990s output still remained below the level of the late seventies (Table V.8).

The industry has not been as badly affected by competition from imports as the flat goods industry (source: personal interviews). Because of the high level of contraband before 1985, the effect of liberalisation may have been less severe

than in the case of woven fabrics. Also the fact that equipment in the industry was generally of a more recent vintage than in spinning and weaving meant that it was better placed to withstand foreign competition.

Table V.8: Indicators for the Knitting Industry

	INVOFIM (1978=100)	Permanent Workers (1980=100)
1980	95.7	100.0
1985	24.5	n.a
1986	36.2	90.8
1987	33.4	81.0
1988	49.1	62.2
1989	59.5	63.2
1990	78.4	66.5
1991	83.9	68.7
1992	n.a	74.2

Source: As Table V.7.

There was a recovery in domestic consumer demand as the economy stabilised and began to grow again. The steady growth of exports, which had been negligible in the mid-1980s, also contributed to recovery, increasing by over US$5 million between 1986 and 1991.

The knitting industry benefited somewhat from the liberalisation of tariffs on imported inputs. Because major inputs such as yarn competed with local production, duty exemptions were less common and import duties were higher than for the inputs used in spinning and weaving. As a result of liberalisation duties are now much lower and some manufacturers even obtain inputs duty free from neighbouring countries.

There is some evidence that rationalisation has taken place in the industry. The number of very small firms (1-4 employees) fell substantially between 1987-8 and 1990-91 (CNI, SIIP). This has been accompanied by a reduction in the level of employment in the industry.

Growing production since the mid-1980s has been accompanied by increased labour productivity. A number of factors appear to have contributed to productivity growth. First increased output, as a result of economies of scale and increased capacity utilisation, reinforced by rationalisation has contributed directly to improvements in productivity. Easier access to imported inputs has also contributed to productivity, because the low quality of local yarn led to frequent breakages and poor quality of output. This is now being avoided by using imported yarn, which of course has intensified the problems of the spinning industry (Triana and Espana, 1990, pp.13-14).

Some firms in this sector have also introduced new technology and new forms of organisation of production. The technology used in the industry is of a much more recent vintage than is found in the flat textile sector and there has been some new investment in recent years. However, performance is patchy and only a few key firms have responded positively in terms of technological and organisational change.

Clothing (3220)

The clothing industry was badly affected by the economic crisis of the early 1980s. Household demand for garments fell by more than 50% between 1980 and 1985 (INE, 1989). The industry also suffered severely from competition from contraband, which accounted for the bulk of imports of clothing in the first half of the 1980s. However, unlike the knitwear industry, production has remained stagnant since the mid-eighties (see Table V.9).

Table V.9: Indicators for the Clothing Industry

	INVOFIM (1978=100)	Permanent Workers (1980=100)
1980	94.2	100.0
1985	30.8	n.a
1986	34.9	43.8
1987	29.5	43.9
1988	30.2	42.2
1989	35.3	36.9
1990	38.0	35.1
1991	30.0	37.7
1992	n.a	44.4

Source: As Table V.7.

Why has there been no significant increase in clothing production since the mid-eighties? The industry continues to face massive competition from imports, which account for more than half the domestic market. This includes competition from used clothing imported in bulk, with which local manufacturers are unable to compete. There has been some increase in exports (US $2.7 million in 1986-91) but not on the scale of knitted goods. Thus with increased import penetration and limited export growth, domestic production has not expanded significantly.

It is unclear how far producers have benefited from increased access to imported inputs. Small-scale producers rely mainly on national inputs, but this probably reflects purchases from local wholesalers or retailers and the origin of these inputs may well be foreign. However, since these small producers probably took advantage of smuggled imports of fabric before liberalisation,

changes in trade policy may not have benefited them significantly. Larger producers which import directly may now have better access to imported inputs.

Contrary to what has taken place in the knitting industry, the evidence for the clothing industry is that there has been an increasing 'informalisation' of production. The estimated share of production accounted for by firms employing 1-4 employees increased from 63% in 1987-8 to 77% in 1990-1991 (CNI, SIIP).

There is little new investment in this sector with the exception of a very small number of firms that have become major exporters of clothing. Similarly with the exception of these latter firms, there has been little technological or organisational change in the industry.

This, together with stagnant production and increased proliferation of micro-enterprises, has meant that there has been little increase in productivity in the industry. Indeed, labour productivity is lower in the early 1990s than it was in 1980.

Footwear (3240)

As in the case of clothing, there was a major drop in consumer demand for footwear during the first half of the 1980s, falling by almost a half between 1980 and 1985 (INE, 1989). The industry also faced competition from contraband, although not to the same extent as clothing. These factors led to a substantial reduction in production which fell in 1985 to about a third of its 1978 level (see Table V.10).

The decline of production continued after 1985. The liberalisation of trade and the unification of the exchange rate had a negative effect on shoe manufacturers. Before 1985, the fact that legal exports of leather were made at the official exchange rate, kept the price of the industry's key raw material artificially low in local currency, which helped it compete with imported shoes. The introduction of the single exchange rate led to a substantial increase in the price of leather causing costs to rise (PREALC, 1989). Thus the industry was particularly badly hit and had the largest fall in production of any industry in the post-1985 period.

The Bolivian shoe industry is dominated by one major producer, which accounts for three-quarters of industrial production. There are a handful of medium-size producers and over 200 micro-enterprises (1-4 employees) which account for the remaining quarter of output. As a result, developments in the shoe industry depend very largely on the behaviour of the major manufacturer. This firm has increasingly resorted to sub-contracting and also imported shoes to distribute through its own chain of shops (PREALC, 1989). This has enabled

it to reduce substantially its work force and employment in the industry as a whole fell by over a third between 1986 and 1991.

Table V.10: Indicators for the Footwear Industry

	INVOFIM (1978=100)	Permanent Workers (1980=100)
1980	62.6	100.0
1985	31.0	n.a
1986	34.2	73.7
1987	21.2	59.3
1988	22.9	51.5
1989	23.2	46.1
1990	20.9	43.0
1991	24.8	47.4
1992	n.a	51.0

Source: As Table V.7.

Levels of capacity utilisation in the shoe industry have remained low and there has been little new investment (World Bank, 1991, Table 5.4). The main organisational change has been the increased use of sub-contracting. The significant increase in labour productivity in the late 1980s and early 1990s is probably due to this factor, rather than to any major technological or organisational changes in the production process. It has also been suggested that the major producer has shifted its product mix towards low-cost shoes where it is better able to compete with imports, and this too would have led to an increase in physical productivity.

Beer (3133)

Household consumption of alcoholic beverages, of which beer was a major component, kept up much better than that of clothing and footwear during the crisis of the early 1980s (INE, 1989). As a result, beer production did not fall dramatically until the height of the hyperinflation in 1984 and 1985 (see Table V.11).

After 1985, consumer demand picked up rapidly and this was reflected in a recovery in production. Import liberalisation had very little impact on the industry because transport costs are high (almost 10% of the gross value of production) so that competition from imports is minimal. The major Bolivian breweries felt that the changes in trade policy in the mid-eighties had little impact on their activities. Not only did they experience little competition from imports, but they were also unaffected on the input side because the major imported inputs which they use, such as malt, hops etc., had been largely exempt from duties under the previous trade regimes (source: personal interviews).

Table V.11: Indicators for the Beer Industry

	INVOFIM (1978=100)	Permanent Workers (1980=100)
1980	109.0	100.0
1985	52.2	n.a
1986	87.1	n.a
1987	102.1	66.7
1988	99.7	70.7
1989	95.4	72.3
1990	99.7	73.1
1991	127.0	69.7
1992	n.a	79.3

Source: As Table V.7.

By the early 1990s the breweries had become exporters to the tune of over $2 million, mainly to neighbouring countries but also taking advantage of the growing consumer market for exotic beers in the USA (see next section). However exports are also limited by high transport costs and only account for a relatively small share of total beer production (less than 5% for the two breweries which do export). Thus, the main factor in growth of production since the mid-eighties has been the expansion of domestic demand.

The beer industry is dominated by one firm, the Cervecería Boliviana Nacional (CBN) which accounts for over half the market, with two other large producers in Santa Cruz and Cochabamba respectively, and some smaller regional breweries. Since the mid-eighties, competition within the industry has intensified as regional markets have tended to break down and recently CBN opened a new brewery in Santa Cruz. A brewery owned by Taquiña was also opened in Santa Cruz in 1987 to produce Heineken under licence, but this was not successful.

There has been substantial investment in the industry since the mid-eighties, both to expand capacity and to modernise existing plant. The major investment has been the new CBN plant in Santa Cruz, which was built primarily to save on transport costs. However, the other breweries have also increased their capacity and modernised plant. These have led to some technological improvements, although apart from the new Santa Cruz plant these have been incremental rather than radical. There is little evidence of major organisational change in the industry, although the nature of beer production limits possibilities in this respect. There is considerable excess capacity in the industry following the opening of the new CBN plant. Taquiña also has its second plant in Santa Cruz which is shut down at present.

The recovery of production since the mid-eighties has been accompanied by an increase in labour productivity. Employment is down almost a third compared to its level in 1980, while output is higher than before the crisis. All

three of the major breweries reported increased productivity as a result of new equipment and reduced manning levels.

Increased productivity in this industry has not been a result of trade liberalisation since changes in trade policy have had little impact on the industry. Productivity growth may have been indirectly promoted by increased domestic competition in the industry as the regional division of the Bolivian market between the major producers breaks down. It is directly related to the significant investments which have taken place in the industry in recent years, distinguishing it from other Bolivian manufacturing industries.[22]

Soft Drinks (3134)

Household consumption of non-alcoholic beverages fell by 60% in the first half of the 1980s (INE, 1989), and this was reflected in a drastic fall in domestic production (see Table V.12). However, as in the case of beer, production recovered rapidly after 1985 and by the late 1980s and early 1990s was well above the level of a decade earlier.

Table V.12: Indicators for the Soft Drinks Industry

	INVOFIM (1978=100)	Permanent Workers (1980=100)
1980	95.3	100.0
1985	32.2	n.a
1986	50.4	n.a
1987	86.6	66.2
1988	114.9	72.8
1989	122.7	74.4
1990	110.7	73.9
1991	107.7	74.0
1992	n.a	75.1

Source: As Table V.7.

Transport costs are an even more significant component of total costs for soft drinks than they are for beer, so that competition from imports is minimal. This is reinforced for those international brands which are produced under licence by the fact that the licensors grant rights for restricted geographical regions, which prevents firms in neighbouring countries from exporting.

Some firms have taken advantage of the creation of commercial free trade zones to import concentrates. This enables them to delay payment of import duties until the concentrate is required, but otherwise the impact of the trade reforms on imported inputs has been limited. Thus, as in the case of the breweries, trade liberalisation has not had a major impact on the industry.

The same reasons limiting competition from imports have also meant that the soft drinks industry has not exported from Bolivia. Growth since the mid-eighties has therefore been entirely dependent on the recovery and growth of domestic demand.

The industry is much more fragmented than the beer industry, with over 30 bottlers in the whole country. Because of high transport costs, the market is highly regionalised, but there is still considerable competition in the major centre of La Paz (15 producers) and Santa Cruz (9). Competition within the industry has intensified in recent years on two fronts. Some of the large producers, particularly the two Coca Cola franchises in La Paz and Santa Cruz, have pursued aggressive expansion policies. At the same time, there has been an increase in the number of firms in the industry with the entry of several small firms producing their own brands, often using used bottles from the beer industry. As a result some of the medium-size producers have found their profits squeezed.

This has been reflected in differences in the investment behaviour of different firms. The more dynamic companies have expanded, building new regional plants and increasing the capacity of their existing plants. On the other hand a number of producers, whose market share has declined, have invested very little in recent years. Amongst investing firms there has been some technological change, mainly associated with the introduction of large size, or plastic, bottles. Organisational changes have been limited although there have been improvements in quality control in some firms. In several firms there has been a shift away from family control towards more professional management as a result of intensified competition in the industry.

As in the case of the beer industry, the recovery of output since the mid-eighties has been accompanied by increased labour productivity. Employment is down by a quarter compared to the level of 1980, while output has increased. The main cause of increased productivity mentioned by several firms has been the changes in labour legislation, introduced as part of the New Economic Policy, which made it easier to fire workers. Again, as in the case of beer, productivity increases have had little to do with trade liberalisation.

The brief surveys of the six industries discussed in this section serve to throw some light on the earlier finding that there was little evidence of any link between trade liberalisation and productivity growth in Bolivian industry.

The only industry where there is some evidence that the supposed mechanisms through which liberalisation affects productivity were indeed operative was the knitting industry. Here there is evidence both to support the view that trade liberalisation has led to rationalisation and that increased availability of

imported inputs has contributed to productivity improvements. Moreover a limited number of firms have responded to the new trade regime by increasing investment, modernising plant and reorganising production and even entering export markets.

The other industries analysed provide little support for the operation of the neo-classical mechanisms. The other industry which was characterised by high growth of labour productivity in recent years was footwear. However, it would seem that a significant part of this productivity gain was illusory and that the overall impact of liberalisation has been negative since it has led to further contraction of production and very low levels of investment.

Productivity growth was less marked in the other four industries considered. In the case of spinning and weaving, where import competition has led to further contraction of domestic production, there has been very little new investment or technological change and increased productivity is mainly a result of the closure of the most inefficient producers and scrapping of obsolete equipment. In clothing, stagnant production has been accompanied by increasing informality, limiting the scope for productivity increases.

The two beverage industries have been relatively unaffected by the move to trade liberalisation. Although not facing increased competition from imports, in both industries, particularly soft drinks, there has been increased domestic competition in recent years. In the case of beer this has led to substantial investment and increased productivity, although this has been limited by increased excess capacity. In non-alcoholic beverages, although some firms have invested, financial constraints have limited the possibilities of others. As a result technological change has not been widespread and this has restricted productivity growth.

Conclusion

Labour productivity in Bolivian manufacturing industry has increased significantly since the economic crisis of the mid-1980s, which raises the question of how far this was a result of the liberalisation of trade which took place after 1985. The evidence of this section casts some doubt on the link between trade liberalisation and productivity growth.

First of all, the statistical analysis above failed to find any relationship between productivity growth by industry and any of the variables which theory suggests link trade liberalisation and productivity. Specifically there was no relationship between the extent to which an industry faced competition from imports and its productivity performance, nor was there any link between reliance on imported inputs and performance. What is more, productivity

growth was positively associated with production for the domestic market rather than for export.

Increases in productivity may be brought about in a number of different ways (and should not be regarded as 'manna from heaven'). At the level of the firm, productivity may rise as a result of increased levels of production which enable the firm to take advantage of economies of scale or to increase capacity utilisation. Productivity may also increase as a result of investment in new machinery and equipment which embody more advanced technology. Changes in management and organisation can also result in increased productivity levels through, for example, the introduction of Just-in-Time and Total Quality Control methods. Finally, productivity may be increased as a result of reduced manning levels and increased work intensity or longer hours, when workers are laid off.

At the industry level, the productivity of the industry as a whole may be increased through greater concentration of production in a smaller number of larger firms. Productivity may also rise where an industry contracts leading to the elimination of the least efficient producers and the scrapping of obsolete plant.

In the late 1980s and early 1990s there is little doubt that increased levels of output, as industry recovers from the crisis, have been a major factor in increased productivity. Capacity utilisation, for instance, has increased from just over a third in 1985 to more than 50% in the early 1990s (CNI, 1992, Table 16) and there is a clear relationship between growth of output and productivity.

However the impact of trade liberalisation on output has been negative for many sectors. Industries such as spinning and weaving, clothing and footwear, which faced substantial import competition, have contracted since the mid-eighties. Only in a few exceptional cases such as the knitting industry, which has managed to increase exports substantially, has there been significant growth in production among industries facing substantial import competition.

A major constraint on productivity improvements in the Bolivian manufacturing sector in recent years has been the low level of investment. As Table V.13 shows, this has not even been sufficient to balance depreciation, so that net investment in manufacturing has been negative.

The overall depressed level of investment in manufacturing in this period partly reflects the lack of a buoyant market for domestic producers faced with the loss of market to imports. A survey of 59 manufacturing firms undertaken in 1991 found that over 53% considered competition from imports a 'most serious' problem constraining investment (World Bank, 1991, Table 5.7).

Table V.13:
Gross Fixed Capital Investment and Depreciation (Bs. million at current prices)

	Fixed Investment	Depreciation
1987-88	89.6	89.7
1988-89	120.4	173.6
1989-90	139.8	179.0
1990-91	196.3	193.0

Source: CNI, Sistema de Información Industrial Privado.

Low investment also reflects the very high real rates of interest in Bolivia since 1985. The same survey found that 60% of manufacturing firms considered the cost and/or restricted availability of credit as a 'most serious' problem. With an average rate of gross profitability of 22% in manufacturing, interest rates of 20% in dollar terms are a substantial disincentive to investment. 'Insider' firms which belong to groups which are linked to the banking sector are able to concentrate long-term development credits, while (usually smaller) 'outsider' firms are forced to rely on their own limited resources for investment (World Bank, 1991, p.59).

There is little evidence of significant organisational changes taking place in Bolivian manufacturing. Not only are there very few examples of the new Japanese-style forms of organisation being introduced in Bolivian industry, but there seems to be very little awareness or knowledge of these practices among managers. Increased productivity as a result of such changes are in practice insignificant.

A factor which has led to increased productivity in a number of firms has been increased intensity of work as a result of reductions in personnel. The new labour legislation introduced as part of the NEP in 1985 removed the traditional protection provided to workers, and this was an important factor in the reductions in manufacturing employment which occurred in 1986. The fact that reductions in employment have occurred both in firms/industries facing competition from imports and those which did not, such as the breweries and some of the soft drinks producers, indicate that increases in intensity of work were not primarily the result of trade liberalisation.

At the industry level, there are some cases where rationalisation has occurred and this has contributed to productivity increases as in the case of the knitting industry. However in other industries, such as clothing, the trend has been in the opposite direction towards increased proliferation of small scale producers and the growing 'informalisation' of the industry. The growth of small scale 'informal' producers has also occurred in other industries which have not been subject to import competition such as soft drinks. Thus there is no clear evidence

that trade liberalisation has contributed to increased productivity through rationalisation at the industry level.

The most clear way in which liberalisation has contributed to increased productivity at the industry level is through the elimination of high-cost producers and the scrapping of obsolete capacity. This has been an important mechanism in the spinning and weaving industry which had a considerable amount of old machinery in the mid-eighties and where a number of inefficient firms have closed down. However, such increases in productivity are more apparent than real since they represent no technological or organisational improvement in production.

There is very little evidence from the Bolivian case to support the view that trade liberalisation leads to significant productivity improvements in manufacturing. The theoretical arguments on which this expectation is based are in any case fragile. The Bolivian evidence both from the cross-section data analysed in Section 4 and the individual industry case studies discussed in Section 5 suggest that trade liberalisation is neither a necessary nor a sufficient condition for rapid productivity growth.

VI: TRADE LIBERALISATION AND EXPORT PERFORMANCE

Introduction

An important plank in the case for trade liberalisation is the belief that a more liberal regime will lead to increased exports which in turn will have a favourable effect on economic growth and employment generation. A major element in the critique of import substituting industrialisation (ISI) was that such policies created a bias against exports, so that 'export pessimism' became a self-fulfilling prophecy.

As was indicated in Section I, trade liberalisation is defined in terms of reduced trade controls and a move towards neutrality in the sense of equal effective rates of protection for different activities, including production for the domestic and the export market. Thus an important element of trade reform should be a reduction in the anti-export bias of the trade regime. A second way in which it has been argued that liberalisation can contribute to improved export performance is through the increased availability of imported inputs (Dornbusch, 1992). Finally, trade liberalisation may be accompanied by a more competitive real effective exchange rate which will also boost exports.

In this section, the performance of Bolivia's non-traditional exports of manufactures is analysed to see whether there is a *prima facie* case for believing that trade liberalisation has led to improved export performance. The mechanisms through which the New Economic Policy could have affected exports are examined and there is a statistical analysis of the determinants of manufactured export performance in Bolivia and the impact which trade liberalisation has had on exports. These issues are then explained further, based on a number of firm-level surveys and industry case studies.

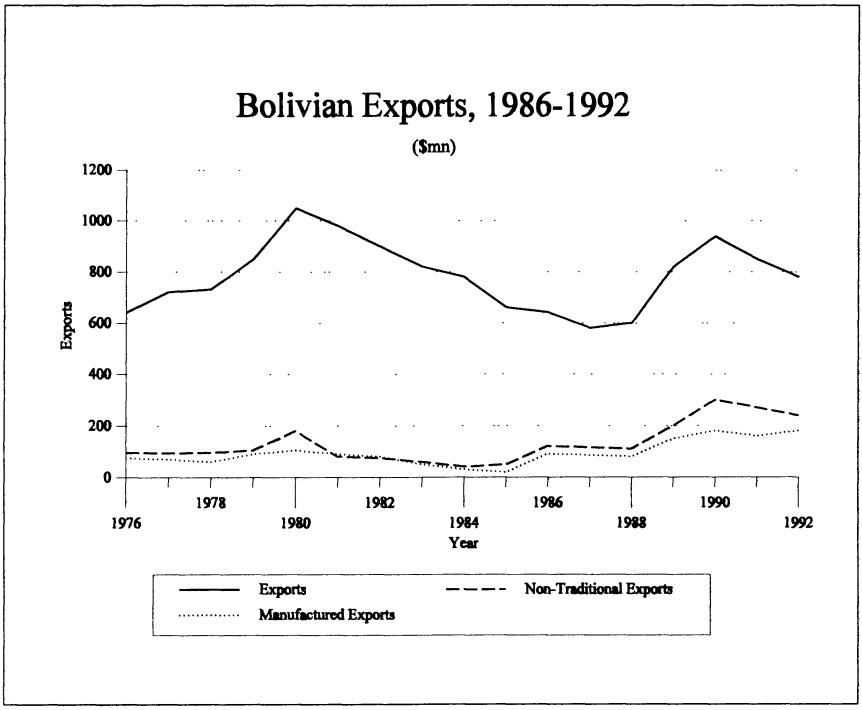
Has Export Performance Improved since 1985?

Level of Exports and Export Growth

We first turn to the question of whether trade reform has been reflected in better export performance in Bolivia in the period since 1985 when the New Economic Policy was introduced. Figure VI.1 shows the evolution of Bolivia's total exports, non-traditional exports (i.e. all exports except minerals and petroleum and natural gas) and manufacturing non-traditional exports between 1978 and 1992. In all three cases, exports declined sharply during the first half of the 1980s. Non-traditional exports, including non-traditional manufactures recovered strongly after 1985 and by the end of the decade surpassed their previous peak level. Low prices for tin and natural gas, and the general decline

of Bolivian tin mining however, affected traditional exports, and as a result the level of total exports remains below that of 1980.

Figure VI.1



In analysing the impact of trade reform on export performance, the most relevant indicator is exports of non-traditional manufactures. Many of the studies of the impact of trade orientation have used such an indicator. In the Bolivian case,traditional exports have been affected by external factors which have little to do with the changes in trade policy, while by their nature agricultural exports are subject to the vagaries of climate and again may not accurately indicate the effects of policy changes. In what follows, therefore, the focus will be on non-traditional manufactured exports, which excludes some processed minerals classified as manufactures in the International Standard Industrial Classification.

Manufactured exports grew rapidly in the late 1970s, but then fell precipitously with the economic crisis of the first half of the 1980s. The recovery since 1985 has occurred in two sharp steps: first an increase of almost fourfold in 1986 and then a further doubling of exports in 1989. In other years the level of exports has tended to stagnate, or even decline slightly.

What this suggests is that there has been a significant upward shift in the level of non-traditional manufactured exports in the post-1985 period. However it is less clear whether this has been a once-and-for-all shift in the level of exports, or a move to a higher growth trajectory.

To test for this, two multiple regressions were run, using a dummy variable for the years from 1986 onwards to assess the effects of liberalisation. Since the economic crisis of the early 1980s obviously had a negative effect on exports, GDP is included in the regression to capture the effect of the overall level of economic activity on exports. First, the level of manufacturing exports (MFGX) was regressed on GDP and the liberalisation dummy (LIB):

$$MFGX = \underset{(-4.6)}{-521} + \underset{(5.1)}{5.6\,GDP^{*}} + \underset{(4.1)}{53\,LIB^{*}} \qquad \begin{matrix} Adj\ R^2 = 0.79 \\ DW = 1.61 \end{matrix}$$

(t-statistics in brackets)

The results support the view that the level of exports in the post-1985 period was significantly higher than in the earlier period.

Second, the annual growth rate of manufactured exports was regressed on GDP growth (GDPgr) and the liberalisation dummy:

$$MFGXgr = \underset{(-0.9)}{-25} + \underset{(2.65)}{135\,LIB^{*}} - \underset{(-2.1)}{19\,GDPgr^{*}} \qquad \begin{matrix} Adj\ R^2 = 0.27 \\ DW = 1.64 \end{matrix}$$

Although the explanatory power of this equation is not as strong as the earlier one, the liberalisation coefficient is still significant at the 5% level, indicating that the rate of growth of exports as well as its level has increased since 1985.

Sources of Growth

Another indicator of the improved export performance of the manufacturing sector in the post-liberalisation period is the significant contribution made by exports to the growth of manufacturing output between 1986 and 1991. In aggregate, exports accounted for over half the increase in manufacturing production in this period, while import substitution was, not surprisingly, negative (see Table VI.1).

This result needs to be qualified by the observation that the significant contribution of exports is the result of the performance of two sectors: (i) textiles, clothing and footwear and (ii) base metals. The only other sectors in which exports contributed to growth in a major way were wood and wood

products, and chemicals. In all other manufacturing sectors, domestic demand was the major contributor to industrial expansion.

Table VI.1:
Contribution of Exports, Import Substitution and Domestic Demand to Growth of Production, 1986-1991

	Exports (%)	Import Substitutes (%)	Domestic Demand (%)
Meat Products	0	-1	101
Dairy Products	0	33	67
Flour Milling & Bakeries	-9	-2	111
Sugar & Confectionery	1	1	98
Other Food Products	0	-2	102
Drink	1	2	97
Tobacco	0	3	97
Textiles, Clothing & Leather Products	435	-512	-24
Wood & Wood Products	55	-32	-123
Paper & Paper Products	0	94	6
Chemicals	526	-1,159	733
Petroleum Products	3	9	89
Non-metallic Minerals	0	32	67
Base Metals	133	-30	-3
Metal Products, Machinery & Equipment	-36	108	28
Other Manufacturing	18	32	50
Total Manufacturing	51	-11	60

Note: Each column shows the increase in the variable indicated as a percentage of the total increase in local production. Production declined in two industries, Textiles, Clothing and Leather and Wood and Wood Products. In these industries the total of the three columns therefore sums to -100%.
Source: author's elaboration from INE data.

The Structure of Exports

While there appears to have been a quantitative shift in the level of exports with liberalisation, a further question is whether or not this has been accompanied by a qualitative change in exports. Two questions are of particular interest in this context. First, has there been an upgrading of exports from relatively unprocessed products to more complex goods which incorporate more value added? Second, has there been a diversification of exports in terms of both products and markets? Data are not readily available to answer these questions for manufactured exports, so that they will be examined using information on non-traditional exports as a whole where necessary.

Table VI.2 compares the structure of non-traditional exports in the five years from 1976-80 with that for the last five years. It can be seen that while total exports have more than doubled between the two periods, exports of processed goods have increased only slightly. Manufactured exports can be roughly identified with semi-processed and processed products which account for

approximately two-thirds of non-traditional exports. Within manufactures, there has been a complete reversal in the relative importance of less and more processed goods, with semi-processed exports almost doubling their share while that of processed products fell by almost a half. In other words the composition of manufactured exports has shifted significantly towards less highly processed goods.

Table VI.2:
Non-Traditional Exports by Degree of Processing, 1976-80 and 1988-92

	1976-1980		1988-1992	
	$mn	*%*	*$mn*	*%*
Primary	177.1	33.5	352.6	32.2
Semi-processed	131.3	24.9	507.3	46.3
Processed	217.2	41.1	233.7	21.3
Other	2.6	0.5	1.8	0.2
Total	528.2	100	1095.4	100

Source: DICOMEX and Ministerio de Exportaciones y Competitividad Económica.

Despite the growth of exports since 1985, there has been little diversification in terms of products exported. Four products accounted for two-thirds of non-traditional exports in 1970 and this concentration remained unchanged in the late 1980s (UDAPE, 1990b, p.11). In the case of manufactured exports, two four-digit industries, saw mills (3311) and oils and fats (3115), have consistently accounted for half of the total in each year since 1986 (MECE data).

Similarly, data on the destination of non-traditional exports show that they have remained concentrated mainly within Latin America with the Andean Pact countries and other Latin American countries accounting for around three-fifths of the total (Table VI.3). Indeed, if anything, the trend seems to be towards greater concentration on regional markets.

In conclusion then, the growth of non-traditional and manufactured exports after 1985 has not been accompanied by diversification either in the structure of those exports or of the markets in which they have been sold. In so far as there has been a change in the structure of manufactured exports, this has been away from more highly manufactured goods towards products which involve limited processing of local raw materials.

Although there has been some improvement in export performance in Bolivia following the introduction of the New Economic Policy in 1985, the ways in which trade reform affected export performance have still to be analysed. As indicated above, there are a number of ways in which protection can have a

negative effect on exports and hence trade liberalisation may lead to improved export performance. The remaining sections of this section will consider the evidence of each of these effects in the Bolivian case.

Table VI.3:
Share of Non-traditional Exports going to Andean Pact and ALADI Countries, 1981, 1986, 1992

	1981 (%)	1986 (%)	1992 (%)
Andean Pact (AP)	28.5	41.2	26.1
ALADI	30.8	21.2	38.2
AP + ALADI	59.3	62.4	64.3

Source: DICOMEX and MECE.

Mechanisms linking Trade Liberalisation and Export Growth

Removal of Bias Against Exports

As was discussed in Section II, protection can lead to both an absolute and a relative bias against exports. The first question that needs to be considered is whether these biases against exports have been removed or reduced in Bolivia as a result of trade liberalisation. This requires an estimation of the ERP on exports.

(i) ERP on Exports

The ERP on exports can be calculated by substituting the level of export incentive for the level of protection of output in the equation for calculating the ERP on production for the domestic market. For this purpose, the incentive actually paid as a percentage of total non-traditional exports was used for 1988 and 1990. In the absence of such data for 1982, it was assumed that the average export incentive for manufactured goods under the CERTEX system was 10%. Table VI.4 estimates the effective protection for exports in each of these years.

(ii) Relative Anti-Export Bias

The relative bias against exports is defined as $[1 + ERP(D)]/[1 + ERP(X)]$ where $ERP(D)$ and $ERP(X)$ are the effective rates of protection on production for the domestic market and exports respectively (Balassa, 1982).

Table VI.4 shows a substantial reduction in the anti-export bias between 1982 and 1988, as a result primarily of the large reduction in the ERP on production for the domestic market discussed above. Nevertheless despite trade liberalisation, there continued to be a significant bias in favour of production for the

domestic market. Although the CRA was established in 1987, only a limited amount of credits were issued in 1988 so that the incentive was very low. By 1990, however, the CRA was fully operational and import duties had been further reduced so that there was only a slight bias against exports.

Table VI.4: Estimates of the Bias Against Exports

	NRP (%)	x (%)	ERP (D) (%)	ERP (X) (%)	Rel Bias (%)
1982	47.7	10.0[a]	94.1	-22.8	2.51
1988	14.0	0.87	17.1	-14.4	1.37
1990	9.7	7.5	8.9	3.5	1.05

NRP - tariff on output
x - export incentive
ERP(D) - ERP on sales on domestic market
ERP(X) - ERP on export sales
Rel Bias - [1 + ERP(D)]/[1 + ERP(X)]

Note: [a] The tax rebate for exporters varied from 5% to 25% depending on the product. The figure of 10% is an estimate of the average incentive for manufactured exports.
Source: Econometría (1987); author's elaboration.

Information on the actual level of protection of the domestic market after 1990 is not available; therefore, it was not possible to calculate ERPs for more recent years. However, the incentive received on exports was reduced from 7.5% in 1990 to 3.4% in 1991 as a result of the reduction in the level of the CRA and its subsequent replacement by the Drawback system. Therefore, it is likely that the relative bias against exports increased after 1990, although remaining well below the levels prior to 1985.

iii) Absolute Bias

The crucial determinant of international competitiveness, as indicated above, is the absolute bias against exports. The extent to which there is an absolute bias against exports depends on the impact of tariff duties on inputs and the level of export incentives. If the ERP on exports is negative, this indicates the existence of an anti-export bias.

Table VI.4 indicates that, although there was a reduction in the absolute bias against exports between 1982 and 1988, this was nowhere near as marked as the reduction in the relative anti-export bias. This can be attributed to two factors. First the level of import duties on industrial inputs did not fall significantly as a result of trade liberalisation and for many industries the cost of imported inputs actually increased (Espejo et al, 1988, pp.40-41). Secondly, in 1988 the CRA offered little real incentive to exporters since it was only beginning to be

implemented. Thus, as far as the absolute level of international competitiveness of exports was concerned, trade liberalisation made very little difference.

The situation changed in 1989 and 1990 when the CRA was fully in operation. As a result the absolute bias against exports of manufactured goods was removed in 1990 and the export incentive slightly more than compensated exporters for the additional cost of inputs. However, this situation appears to have been short-lived. As indicated above, the incentive to exporters was reduced substantially in 1991 and this probably resulted in the reappearance of an absolute anti-export bias.[23]

(iv) Conclusion
Trade liberalisation in Bolivia therefore had a substantial effect on the relative bias against exports by reducing protection for the domestic market. However, the significance of this is unclear since high levels of excess capacity and unemployment in Bolivia mean that it cannot be argued that any increase in production for the domestic market must be at the expense of exports.

Trade liberalisation does not appear to have had such a major impact on the absolute level of export competitiveness. Moreover the reduction in export incentives which resulted from IMF and World Bank pressures to abolish the CRA in 1991 have reduced the international competitiveness of exports.

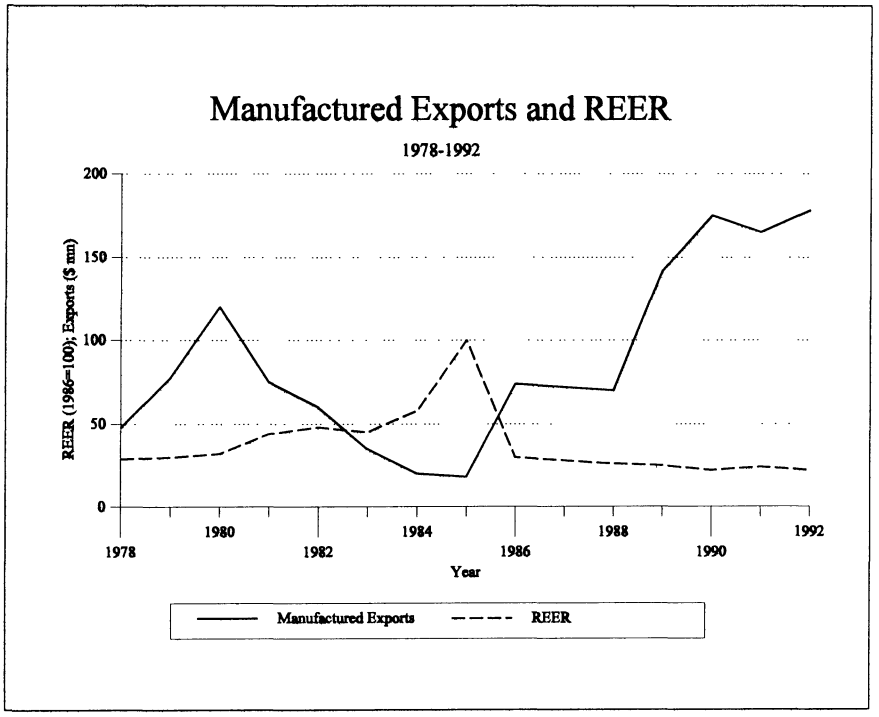
Access to Imported Inputs
A second way in which trade liberalisation may lead to better export performance is through greater access to imported inputs and capital goods. Restrictive trade regimes may make it difficult for potential exporters to obtain the inputs or equipment which they require. Liberalisation increases the availability of such imported inputs.

There is little doubt that in the period immediately before the trade reforms of the mid-1980s, access to imports did represent a problem for Bolivian manufacturers, as was indicated in section V. While there is evidence that foreign exchange for imported inputs was more readily available under the New Economic Policy, the question still remains whether this contributed to the growth of exports.

A More Competitive Real Effective Exchange Rate
A major factor determining a country's export performance is the level of its Real Effective Exchange Rate (REER). It is therefore relevant to look at how this evolved in Bolivia during the period under consideration. Figure VI.2 shows the evolution of the REER as calculated by the IMF from 1978 to 1992. It shows a steady appreciation of the boliviano in the late 1970s and early 1980s which

accelerated as hyperinflation took a grip in 1984 and 1985. There was a sharp real depreciation in 1986, followed by a very slight further depreciation to 1990.

Figure VI.2



Although the REER is clearly less overvalued now than it was in the mid-1980s, it is not possible to establish on the basis of the above data whether it is now over- or under-valued, or indeed whether it is more or less overvalued/undervalued than in the late 1970s. The reason for this is that, although there has been a real depreciation compared to the late 1970s, the equilibrium real exchange rate has almost certainly changed over the period because of the way in which its underlying determinants have altered.

The main factor here has been the difficulties faced by Bolivia's traditional export industries, tin and natural gas, leading to a substantial deterioration in the terms of trade, which fell from 100 in 1980 to 70 in 1985 and 32 in 1991 (UDAPE, 1992a, Table 3.2.9). Another factor which has tended to reduce the equilibrium real exchange rate has been the process of trade liberalisation itself. It has also been suggested that reductions in capital inflows have been a further factor tending to depreciate the equilibrium rate. Thus, some writers continue to regard the exchange rate as overvalued in the late 1980s and early 1990s

(Edwards, 1992; Ferrufino Goitia, 1992). It has also been argued that Bolivian coca exports may have had a 'Dutch disease' type effect on the exchange rate (Jenkins, 1990).

A More Stable Real Effective Exchange Rate

A further factor which may affect export performance is the stability of the real exchange rate. A highly volatile real exchange rate makes it difficult for firms to predict the returns which they will obtain from exporting, and this increased uncertainty acts as a disincentive to exports.

In order to test the hypothesis that the real exchange rate became more stable after the introduction of the NEP, monthly data for the exchange rate between the boliviano and the US dollar, and the monthly consumer price index for Bolivia were used to calculate the real exchange rate from 1978 to 1992 (this does not take into account the effect of US inflation on the real effective exchange rate, but since US inflation in this period was fairly low it would not have a great impact on the variability of the real exchange rate which is our prime concern here).

The variability of the exchange rate was measured using the coefficient of variation of the monthly real exchange rate in each year. This shows a significantly higher level of fluctuation in the period 1982-85 than either before or after. From 1987 onwards the policy of gradually devaluing the boliviano has kept the real exchange rate very stable even compared to the situation in the early 1980s. There is little doubt, even given the crudity of the measure used, that the returns to exporting have been much more stable since the implementation of the New Economic Policy.

The reduction in the anti-export bias compared to the pre-1985 period, the increased availability of imported inputs and the more realistic and less volatile real exchange rate are all expected to have a positive effect on Bolivian exports of manufactures. The determinants of export performance are analysed below, in order to identify the contribution of each of these factors to the growth of exports.

Determinants of Bolivian Manufactured Export Performance

The Growth of Total Manufactured Exports

There are a number of factors which may influence the level of exports of manufactures from a country on a year by year basis. Those most frequently found in empirical studies of export performance include the real effective exchange rate, domestic market conditions, the level of export incentives, and world market demand.

A model of this kind was fitted to annual data for Bolivia for the years from 1978 to 1992, which has roughly equal time periods before and after the introduction of the NEP. Because the volume of Bolivian exports is so small in relation to world trade in manufactures, it was not considered necessary to include a term for world market demand.

The model was estimated with the annual change in manufactured exports as the dependent variable. In order to establish the basic model, exports were expressed as a function of manufacturing GDP, capacity utilisation and a real exchange rate variable. The size of manufacturing GDP is taken as a proxy for economies of scale and is expected to be positively correlated with export growth. The level of capacity utilisation is used as an indicator of domestic demand conditions. It is expected to be negatively related to the growth of exports because when capacity utilisation levels rise, production may be diverted to the domestic market. A high level of the real effective exchange rate, indicating an overvaluation of the local currency, makes exports uncompetitive and it is therefore expected that there will be a negative relationship with the growth of exports. Similarly, a highly unstable real exchange rate increases the risk of exporting and should therefore be negatively related to export growth. Because of the high degree of co-linearity between the level of the real exchange rate and its instability, it was not possible to include both as independent variables in the same equation. Equations 1a to 1e therefore use the level of the real effective exchange rate while equations 1f to 1j are estimated using the instability variable.

Equations 1a, 1b, 1f and 1g give the results of these regressions. All the coefficients have the expected signs with capacity utilisation and the two exchange rate variables all negative and the manufacturing GDP being positive. The relationship between export growth and the size of the manufacturing sector is not, however, statistically significant and it is therefore dropped from subsequent equations.

The exchange rate is clearly a key determinant of the growth of manufactured exports in this period. The existence of a significant inverse relationship between the REER and exports is given further support by a recent study of non-traditional exports using quarterly data over the period from 1988 to 1992 (Pinell Siles, 1993). Thus, whether one looks at the longer term, when there have been very large changes in the real effective exchange rate, or the more recent short term period in which variations have been much less pronounced, the real effective exchange rate has been an important determinant of export performance.

There is also evidence of an inverse relationship between the growth of exports and the level of capacity utilisation, suggesting that exports may be a way of utilising excess capacity when domestic demand is depressed.

Annual Rate of Growth of Manufactured Exports, 1978-1992

Equation	1a	1b	1c	1d	1e
Const	1067 (3.30)	1159 (3.67)	1065 (3.16)	1085 (3.21)	1104 (3.74)
REER	-4.35* (3.27)	-4.85* (3.56)	-4.28* (3.00)	-4.54* (3.13)	-5.44* (4.04)
CAPUT	-18.3* (3.12)	-25.7* (3.09)	-18.3* (2.99)	-19.5* (2.89)	-19.3* (3.59)
GDP		0.02 (1.24)			
CRA			1.46 (0.20)		
MIMP				0.22 (0.42)	
MDUTY					4.86** (1.85)
Adj R^2	0.40	0.43	0.35	0.36	0.50
DW	1.73	1.78	1.72	1.79	2.03
Observations	15	15	15	15	15
Equation	1f	1g	1h	1i	1j
Const	962 (3.19)	978 (3.15)	963 (3.07)	988 (3.15)	937 (2.88)
REER	-4.94* (3.21)	-5.09* (3.18)	-4.84* (2.96)	-4.94* (3.11)	-4.98* (3.10)
CAPUT	-18.1* (3.06)	-21.4* (2.64)	-18.2* (2.96)	-17.4* (2.78)	-17.8* (2.83)
GDP		0.01 (0.61)			
CRA			2.24 (0.31)		
MIMP				-0.29 (0.57)	
MDUTY					0.77 (0.28)
Adj R^2	0.39	0.36	0.34	0.36	0.34
DW	2.52	2.58	2.50	2.37	2.60
Observations	15	15	15	15	15

Notes
REER - index of real effective exchange rate;
RERVAR - monthly variance of effective exchange rate
CAPUT - capacity utilisation[a]; GDP - value of manufacturing GDP in constant prices;
CRA - value of CRA issued as a % of non-traditional exports;
MIMP - value of imports of raw materials and intermediate inputs for industry;
MDUTY - average import duty paid on imports of raw materials and intermediate inputs for industry[b]

[a] Data pre-1982 estimated from deviation of index of manufacturing production (INVOFIM) from trend.
[b] Data pre-1981 estimated from data on the value of import duty paid on all imports.

Figures in brackets are t-statistics
* - significant at 5% level; ** - significant at 1% level.

The question then arises of whether the specific trade policy measures introduced as part of the NEP have also contributed to export performance. If changes in the relative incentive to export was a significant determinant of performance, it would show up in terms of a significant positive coefficient on an export incentive variable. Similarly if increased access to imports was important, there would be a positive relationship between the growth of exports and the level of imported inputs for the industrial sector. If there was an absolute bias against exports as a result of high tariffs on imported inputs, this would be reflected in an inverse relation between the level of import duties and the growth of exports.

To test the first hypothesis, the ratio of the value of the CRA issued in each year to the value of non-traditional exports was included as an additional independent variable in equations 1c and 1h. Although the CRA variable had the correct sign in both cases, in neither was it statistically significant.

In order to test the second hypothesis, the value of imported industrial inputs was included as an independent variable in Equations 1d and 1i. The variable enters the two equations with opposite signs, but in neither case is it significantly different from zero.

Finally, in order to see whether the level of import duties on imported inputs for industry acted as a disincentive for exports, an import duty variable was introduced in equations 1e and 1j. In the case of equation 1e, where the level of the real effective exchange rate is taken as the exchange rate variable, the level of tariffs paid on imports is significant at the 10% level. However the sign on the coefficient is positive, not negative as expected. In equation 1j the import duty term is not significantly different from zero.

The time series evidence supports the view that the real exchange rate is an important factor affecting export performance. It seems, therefore, that it is the exchange rate policy aspects of the NEP which has made the main contribution to export growth. On the other hand, there is no evidence that either greater availability of imported inputs, or changes in trade policy variables have contributed significantly to export performance.

Intra-Industry Export Performance

In order to explore further the impact of trade liberalisation on exports, the pattern of intra-industry export performance will be considered. Since the introduction of the NEP some sectors have experienced rapid export growth while in others exports have fallen.

As in the case of the time series data analysed above, a number of factors may account for differences in intra-industry export performance. These include

domestic market conditions, world demand, differences in the comparative advantage of different industries, and the level of incentives.

At the level of 14 national accounts manufacturing sectors, the growth of exports between 1986 and 1991 was regressed on various factors which were considered determinants of export performance. Domestic market conditions were proxied by the rate of growth of non-export production. In the expectation that, as a low income country, Bolivia would have a comparative advantage in labour-intensive industries, the capital-labour ratio was included as an explanatory variable. Once more world demand was not considered because of the small share of Bolivia in all trade in manufactured goods.

Exports were found to be negatively related to the growth in production for the domestic market during the same period, again supporting the finding in the previous section that depressed demand conditions were a factor contributing to export growth (see Equation 2a). The effect of the proxy for comparative advantage was more surprising. Equation 2b shows a significant positive relationship between capital intensity and the growth of exports, indicating that exports have grown most rapidly in the more capital-intensive sectors of industry[24]. The most plausible explanation for this finding is that Bolivia's comparative advantage is based more on local natural resources, rather than on labour intensity.

Determinants of Export Growth, 1986-1991, for 14 Manufacturing Sectors

Equation	2a	2b	2c	2d	2e
Const	51.1 (4.44)	22.6 (1.44)	25.4 (0.86)	24.5 (1.35)	-14.0 (0.69)
GrNXP	-0.83* (3.90)	-0.84* (4.63)	-0.86* (3.47)	-0.84* (4.39)	-0.92* (5.92)
K/L		2.19* (2.32)	2.15** (2.03)	2.24** (2.22)	2.95* (3.46)
DERP			-0.03 (0.12)		
ERP88				-0.16 (0.25)	
MIMP					0.79* (2.39)
Adj R^2	0.52	0.65	0.62	0.62	0.75
DW	2.14	2.72	2.72	2.78	3.26
Observations	14	14	14	14	14

Notes: GrNXP - growth of non-export production, 1986-91
K/L - fixed assets per person employed, 1987/8
DERP - change in ERP, 1982-1988
ERP88 - ERP, 1988
MINP - imported inputs as % of total inputs, 1988

Figures in brackets are t-statistics
* - significant at 5% level; ** - significant at 1% level.

As regards the effect of trade liberalisation, two hypotheses were tested. The first is that export performance is influenced by the extent of the anti-export bias in each sector. It is assumed that the level of the Effective Rate of Protection in an industry is a good proxy for the degree of anti-export bias. Two formulations of this hypothesis were tested. The first assumes that export growth will be most rapid where the change in anti-export bias between the pre- and post-liberalisation period is greatest. The second assumes that export growth will be fastest in those industries with the lowest anti-export bias after liberalisation. To test the first of these formulations, the change in ERP between 1982 and 1988 was added to the equation. However, this was not statistically significant and the sign was negative not positive as predicted (Equation 2c). When the level of ERP in 1988 was used as a proxy for the anti-export bias post-liberalisation, although the sign was negative as predicted, the coefficient was not significantly different from zero (Equation 2d).[25]

The second hypothesis tested is that the increased availability of imported inputs as a result of trade liberalisation will contribute to an improvement in export performance. If indeed increased availability of imported inputs has led to increased exports, then it is to be expected that the increase in exports would be most marked in those industries which rely most heavily on imported inputs, and that those which are based on local inputs would not be as affected. To test this hypothesis, the share of imports in total inputs after liberalisation (1988) was included as an independent variable in Equation 2e. As expected the variable was positively related to the growth of exports and significant at the 5% level. A word of caution is in order, however, since the very high Durbin-Watson statistic suggests that there may be a problem with the specification of the model.

The national accounts sectors used for the above analysis are at quite a high level of aggregation which may give rise to some relationships not emerging clearly. Moreover the small number of observations is clearly a problem from the statistical point of view. In order to overcome this problem, regressions were also run at the 4-digit level of the industrial classification. For this exercise 31 4-digit industries for which data were available were used.

Once more the basic model linked exports to domestic market conditions and to industry variables to proxy for differences in comparative advantage across industries. As in the case of the time series analysis, market conditions were proxied by the level of capacity utilisation in each industry.[26] The variable used to measure comparative advantage by industry was value added per person employed, which is often used as a proxy for the combined physical and human capital intensity of production. Again, given the relatively low levels of physical and human capital in Bolivia, it is expected that this variable will be negatively correlated with export performance.

Equation 3a shows that both capacity utilisation and capital intensity are significantly related to the growth of exports. As expected, the coefficient on capacity utilisation is negative, confirming the relationship found using time series data. There is, however, a positive relationship between export growth and capital intensity, confirming the finding from the analysis based on national accounts sectors, indicating that this was not a spurious result of excessive aggregation.

Determinants of Export Growth, 1986-91, at 4-digit Level

Equation	3a	3b	3c	3d
Constant	50,152	41,443 (1.29)	58,880 (1.85)	6248 (2.03)
CAPUT	-1444* (-2.74)	-1412* (-2.39)	-1680* (-2.71)	-1703 (-2.80)
VA/L	+994* (3.76)	+1084 (3.67)	+1040* (3.76)	+1066* (3.94)
CHPROT		-242 (-0.70)		
MSHARE			-886 (-0.04)	
MCONT				-20562 (-0.58)
Adj R^2	0.39	0.37	0.40	0.41
DW	2.24	2.33	2.23	2.29
Observations	31	31	30	30

Notes: CAPUT - capacity utilisation, 1987-88
VA/L - value added per person employed, 1988
CHPROT - change in nominal protection 1982-1988
MSHARE - imported inputs as a share of total inputs, 1988
MCONT - ratio of imported inputs to gross production, 1988

Figures in brackets are t-statistics
* - significant at 5% level; ** - significant at 1% level.

To test for the impact of trade liberalisation, other variables were added to the basic model. Unfortunately, there are no estimates of effective protection in Bolivia at the four-digit level, so that the nominal rate of protection had to be used as a proxy for the degree of anti-export bias. Equation 3b shows that there is no statistically significant relationship between the reduction in protection in an industry after liberalisation and the rate of growth of exports.

Is there then a link between the availability of imported inputs and export performance, as appeared to be the case at the more aggregative level? To test this hypothesis, two measures of reliance on imported inputs were used, the share of imports in total inputs and the ratio of imported inputs to gross production. Once more it was expected that the industries which rely most heavily on imported inputs would have the fastest rate of growth of exports. In fact, however, the coefficient on both these variables was negative, although in neither case was it significantly different from zero (see Equations 3c and 3d).

The evidence from cross-section data is consistent with the finding from time series data that domestic demand conditions and exchange rate variables have been the main determinants of export performance. It also broadly confirms the scepticism expressed earlier concerning the impact of trade liberalisation *per se* on Bolivian exports since 1985. As was seen above, there was no significant relationship between reductions in protection and increases in exports after 1985. Indeed, it has even been pointed out that some of the most successful sectors in terms of exports, edible oils, flour milling and sugar refining, are also industries which continue to receive significant protection (Montaño and Villegas, 1993, p.72). Similarly, although access to imported inputs became significantly easier after 1986, the evidence that this made a major contribution to export growth in the late 1980s and early 1990s is rather weak.

Case Studies

In order to explore further the relationship between trade liberalisation and export performance, data from firm surveys will be drawn upon. Such surveys can provide an indication of the factors which firms themselves considered to have had a favourable impact on exports and what they consider to be the major obstacles to increased exports. These in turn can help evaluate the impact which trade liberalisation has had on export performance.[27]

The Overall Position

A survey of the non-traditional export sector carried out in 1992 by the Bolivian government think-tank, Unidad de Análisis de Políticas Económicas (UDAPE, 1992a), indicates that the most important factors identified by the sample of 70 firms in explaining the growth of exports were favourable international prices and a comparative advantage based on natural resources (e.g. in the case of agro-industrial exports). The third ranked factor in encouraging exports was limited local market demand (see Table VI.5).

On the other hand, specific government efforts at export promotion such as export incentives, institutional support, or promotion in overseas markets, were not major factors in the growth of exports for the vast majority of firms. The impact of the new economic model introduced in 1985 was in an intermediate

position, with about a sixth of firms citing this as a major factor in the growth of exports. The major contribution which the model made to exports was basically through establishing macroeconomic stability (UDAPE, 1992a, p.19).

Table VI.5: Factors Encouraging the Growth of Exports

Factor	% Response
International Prices	44.9
Comparative Advantage	42.9
Limited Domestic Market	20.4
New Economic Model	16.3
Skilled Labour	6.1
Cheap Labour	4.1
Fiscal Incentives	4.1
Institutional Support	2.0
Promotion in Foreign Markets	2.0
Other	12.2

Source: UDAPE (1992a), Table 3.

Further light can be thrown on this issue by considering the factors which firms consider to be the major obstacles to increased exports. The most serious problem identified by the firms surveyed by UDAPE was financing, particularly the high cost of capital not only for fixed investment, but also for pre- and post-shipment costs (UDAPE, 1992a,, Table A.4). A second major factor was considered to be the inadequate transport infrastructure (UDAPE, 1992a, Table 7). These findings coincide with those of a 1991 World Bank survey which also identified the restricted availability and high cost of credit and the inadequate transport infrastructure as the major constraints on investment by exporting firms (World Bank, 1991, Tables 5.7 and 5.9).

Two other factors which, although not as serious as those mentioned above, were identified by a number of firms as important obstacles, were low levels of labour productivity and a lack of price competitiveness. Low productivity was identified as a moderate or severe problem in the leather, wood and textile industries (UDAPE, 1992a, p.22). The lack of price competitiveness was also seen as a problem by a number of firms (UDAPE, 1992a, Table 12).

Indirect evidence of the way in which the New Economic Policy has created a favourable environment for export is provided by the perception of the firms surveyed that the exchange rate is not a significant obstacle to exporting, nor is access to imported machinery and equipment or imported inputs (UDAPE, 1992a, p.24). This suggests that while the NEP has removed certain disincentives to exports e.g. by providing a more competitive exchange rate and reducing bureaucratic procedures, there remain crucial obstacles to increased exports on the supply side.

How effective then have been the various specific measures introduced by the Bolivian government in order to promote exports? The most important of these have been the Certificado de Reintegro Arancelario (CRA), the Régimen de Importación Temporal para la Exportación (RITEX), the Free Zones, and the creation of the Instituto Nacional de Promoción de Exportaciones (INPEX) (see Section III).

As indicated in Table VI.5, fiscal incentives were not considered an important factor in the growth of exports by most firms. The UDAPE report concluded that the CRA was only significant for a few products (UDAPE, 1992a, p.19). My survey shows a somewhat more positive view of the CRA, but only six of the 25 firms interviewed considered its effect to have been highly positive.

The Régimen de Importación Temporal para la Exportación is another policy directly aimed at increasing exports. Table VI.6 indicates the relatively small number of firms that have actually exported under the programme since it was introduced and the total volume of exports generated and machinery and raw materials imported. Exports under the programme accounted for only about 12.5% of total non-traditional exports between 1990 and 1992. It is also worth noting that one firm, producing jewellery, accounted for two-thirds of total exports during this period.

Another mechanism intended to promote exports, the Industrial Free Zones, had still not come into operation in mid-1993, three and a half years after the relevant decree was issued. Interviews with major manufacturers in Bolivia indicated very little interest in the free zone concept, apart from some soft drink manufacturers who had taken advantage of the commercial free zones in order to import concentrates to use in their production for the domestic market.

Table VI.6: RITEX Programmes Carried Out, 1990-1993

	No. of Firms	Imports ($mn)	Exports ($mn)
1990	7	20.8	20.7
1991	13	63.0	61.2
1992	14	10.3	14.1
1993 [a]	1	0.04	0.2
Total	30	94.1	95.2

Note: [a] up to 1/6/93
Source: MECE.

INPEX was set up as a joint public-private organisation, began to operate in 1988, and was intended to be the major vehicle for implementation of the government's export promotion plans. However the experience so far has been

disappointing. Only 49% of exporters surveyed by UDAPE made use of INPEX and only a third of the large firms did so (UDAPE, 1992a, Table 9). The services offered by INPEX are regarded as inadequate both in quantity and quality by exporters (UDAPE, 1992a, p.30). This picture was confirmed by my survey which found only two firms (out of 25 total and nine which exported) which regarded the creation of INPEX as having had a positive impact.

Industry Case Studies

Of the six industries examined in depth in the previous section, five have realised some exports during the period since 1985 (see Table VI.7). Of these only two, knitting and clothing, show a sustained upward trend, while the other three have had fluctuating levels of exports with a decline in the early 1990s.

Table VI.7: Export Performance of Five Industries, 1985-1992 ($mn.)

	Spinning/ Weaving	Knitting	Clothing	Footwear	Beer
1985	0.6	neg	neg	0	0.2
1986	4.8	0.2	0.4	0	0
1987	6.6	0.1	0.8	neg	neg
1988	2.1	0.7	2.1	neg	0.5
1989	9.0	2.5	2.4	0.4	0.5
1990	3.3	3.9	3.0	1.4	1.6
1991	4.5	5.5	3.2	0.6	2.2
1992	4.0	6.9	4.0	0.7	0.8

Notes: neg. - < $50,000
Source: 1985-91 - Instituto Nacional de Estadística
1992 - Ministerio de Exportaciones y Competitividad Económica.

(i) Spinning and Weaving

Almost all the exports from this sector are of cotton yarn, and there are virtually no exports of woven goods. One firm, which was set up in the early 1980s to spin locally produced cotton, accounts for the bulk of these exports. The firm has been little affected by the trade liberalisation measures, although the change in the exchange rate has helped promote exports. The firm has substantial excess capacity and therefore has not needed to undertake new investment in order to increase exports. The main obstacle to exports is the cost of transport. Quality is also a problem in some areas.

The other firms interviewed in this sector did not have significant exports. The main problem which they identified was that their production was not internationally competitive either in terms of quality or in terms of price. Lack of international competitiveness reflected the technological backwardness of much of the industry and the small scale of production. Low volumes were also

identified as a problem by some firms because of insufficient capacity to fill the kind of demands that are standard in the industry internationally.

(ii) Knitting
Exports of knitwear are comprised of two types of products, knitted alpaca and llama clothing, and cotton knitwear. The former are often produced by artisans and exported by marketing firms, while the latter are more likely to be produced industrially. There are some manufacturers of alpaca and llama clothing which produce on an industrial scale and also export, and one of these was interviewed. The other firms surveyed in this industry were producers of cotton and synthetic knits.

Exports of alpaca and llama articles have grown steadily since 1986. The major exporter began production before the introduction of the NEP and has grown steadily. Some aspects of trade liberalisation have contributed to exports. The CRA made it possible to expand production and the trade agreement with Peru has reduced the cost of imported alpaca yarn . However, this is clearly an example of successful niche marketing and the effect of trade liberalisation in expanding exports has been helpful rather than fundamental.

Exports of cotton and synthetic knitwear have been more unstable. Again one firm accounts for the bulk of the exports of these products, although others had plans to begin exporting at the time of the interviews in 1993. Unlike the situation in woven textiles, deficient quality was not considered a major obstacle to exports in this sector. The most frequently mentioned restriction affecting exports was finance, particularly the high rate of interest. As in the case of alpaca and llama articles, the reduced tariff on imported inputs and the introduction of the CRA were regarded as positive in this sector.

(iii) Clothing
Exports of clothing have also shown steady growth. The bulk of exports are accounted for by one firm which is also the main exporter of cotton knitwear. As in the knitwear industry, the most commonly identified obstacle to exports is the high cost of capital. Transport costs are also seen as a problem for exporters of clothing as is the low level of labour productivity.

The second most important exporter of clothing exports is a sub-contractor for an international clothing company and has made extensive use of RITEX in order to import the inputs which it requires, suggesting that in this sector the measures to liberalise imported inputs may have had a positive effect, at least for some firms.

(iv) Footwear
Exports of footwear have evolved in an erratic manner, growing from negligible levels to a peak in 1990. This coincided with the trough in terms of local

production, suggesting that exports may have been made to offset the depressed state of local demand. At present the bulk of Bolivian shoe exports are accounted for by one firm which is not the leading manufacturer.

The major obstacles identified for exports of footwear are high interest rates and the low level of labour productivity. There is also evidence of problems with the quality and the availability of raw materials for the shoe industry (PREALC, 1989, p.33) and more then two-thirds of the inputs used for exports of leather shoes are imported (UDAPE, 1992a, Table 6).

(v) Beer
Exports of beer grew from negligible levels to over US$2 million in 1991, but fell back to under $1 million in 1992. The bulk of exports go to neighbouring countries, but there has also been an effort to take advantage of the growing market for exotic beer in the United States. As in most of the other sectors considered, one firm accounts for the lion's share of exports, although exports account for less than 5% of its total production.

Transport costs are a major factor limiting exports of beer. Bolivian beer has to compete with Mexican beer in the USA at a considerable disadvantage. Furthermore, some firms were unable to export because they did not produce their product in appropriate containers (cans or non-returnable bottles).

The reduction in import duties on imported inputs has not been an important factor in this industry since the main firms were able to import duty free before trade was liberalised. The CRA was, however, regarded as having a significant positive effect on exports and its replacement by the Drawback was seen as a negative factor. Also the breweries were the only firms amongst those interviewed that thought that INPEX had a favourable effect on exports.

(vi)Soft Drinks
Because of high transport costs relative to the value of the product, non-alcoholic beverages constitute virtually a non-tradable good, and there have been no significant exports from Bolivia. An added factor in the case of manufacturers producing well-known international brands was that under the terms of their franchise they were only permitted to sell in the domestic market.

A number of additional features, which were not evident from the statistical analysis, emerge from the detailed consideration of these industries. First, exports are highly concentrated in a few firms, indeed often the bulk of exports from a particular industry are accounted for by a single firm, making exports at the industry level highly dependent on the decisions of one producer.

Secondly, in some industries exports have not grown in a sustained way, but can rather fluctuate on a year-to-year basis. This is consistent with a study of 317 exporting firms which found that only 29% of them exported in all five years during the period 1988 to 1992 (INE, 1993). Furthermore, of the firms which did export continuously during the period, only five firms showed continuous year-on-year growth.

Thirdly, the various government policies designed to promote exports have not in general been a major factor in export performance, although some firms did regard the CRA as a significant incentive.

The general picture which emerges is one where very few firms have re-oriented their activities towards competing internationally and have made a serious long-term commitment to exports. Although for some firms, trade liberalisation may have eased the path to exporting, the effect has been relatively minor. Major obstacles to increasing exports of manufactures still exist on the supply side, particularly low productivity, inadequate quality, and high transport costs. What is more, one aspect of the New Economic Policy, high interest rates, also constitutes an obstacle to successful exporting.

Conclusion

There is no doubt that the level of Bolivian exports of manufactures has increased significantly since the introduction of the New Economic Policy in 1985. There is some evidence that the rate of growth of such exports has also increased, although there have been substantial variations in growth from year to year. However, on the evidence presented above, trade liberalisation has not had a major direct impact on manufactured exports. Neither the arguments concerning the elimination of an anti-export bias nor those based on greater access to imported inputs receive empirical support in the Bolivian case.

On the other hand, there is strong evidence that better export performance has been associated with a more competitive REER and with a more stable real exchange rate. This is hardly surprising since the overvalued and – perhaps even more importantly – highly unpredictable exchange rate up to 1985 was a major disincentive to exporters. However, this is a reflection primarily of the reform of the exchange rate system, through the introduction of the Bolsín and the operation of a kind of crawling peg, rather than a consequence of the changes in commercial policy.

As was argued above, there appears to be little direct relation between the trade liberalising aspects of the NEP and export performance. Further evidence that trade liberalisation is not a major factor in the growth of exports is the

limited use made by firms of the various free trade regimes which have been legislated for by the Bolivian government.

The success of the Bolivian government in increasing exports also needs to be qualified in a number of respects. First, growth has been concentrated on primary and semi-processed products, while exports of products which involve a high degree of local processing have stagnated. Secondly, exports have been mainly concentrated on Latin American markets, particularly neighbouring countries, and do not necessarily indicate that Bolivian goods have acquired wider international competitiveness. Thirdly, there has not been any significant diversification of exports, which continue to come mainly from a very limited number of industries. Fourthly, the number of firms which have displayed a serious commitment to exports is extremely small.

While the growth of exports cannot be attributed to trade liberalisation, these weaknesses in Bolivia's export structure may well be linked in part to the trade reforms. These have led to the concentration of manufactured exports on a few commodities with relatively low levels of processing, in which Bolivia enjoys a resource-based comparative advantage. As a result, exports have failed to dynamise the economy through the incorporation of increased value added and backward and forward linkages.

The Bolivian experience contrasts markedly with that of other countries which have successfully expanded exports by a more 'dirigiste' strategy, such as South Korea, Taiwan or even Chile. These countries have sought to anticipate comparative advantage, by intervening both to promote exports and to protect infant industries with a view to becoming internationally competitive. Particularly in the East Asian countries, liberalisation followed the creation of internationally competitive firms and industries. In contrast, the Bolivian strategy has sought to remove certain obstacles to exports, hoping that this will encourage the emergence of internationally competitive production, while remaining neutral as far as the type of export is concerned. The result is that although exports have grown, they have failed to become a dynamising factor for the economy as a whole.

VII: THE LIMITATIONS OF BOLIVIAN TRADE LIBERALISATION

Introduction

So far a number of key aspects of trade liberalisation in Bolivia have been examined. In this concluding section the discussion is broadened to an overall evaluation of the success of trade liberalisation and its relation to other parts of the reform package introduced in Bolivia in 1985. I first discuss the initial conditions facing Bolivia when the NEP was introduced and the key features of the design and implementation of the trade policy reforms. These are related to the discussion of some of the lessons which have been drawn from other studies of trade liberalisation. The conclusions of this study concerning the impact of trade liberalisation on the performance of the Bolivian manufacturing sector which emerge from the earlier chapters are then summarised. This is followed by an attempt to explain why, in the light of Bolivia's apparent 'success' in introducing and sustaining trade reform, it has not been more successful in terms of economic performance. Finally, it is suggested that an alternative policy package to the wholesale liberalisation actually applied might have had more beneficial effects.

The Conditions for 'Successful' Trade Liberalisation

There is now a growing literature concerning the conditions under which trade liberalisation is likely to be successful (Thomas, Nash and Associates, 1991; Michaely et al, 1991). In this context the 'success' of trade policy reform is defined primarily in terms of its sustainability. Trade reforms which are reversed within a relatively short period of time are by definition unsuccessful.

A number of factors are seen to determine the likely success of trade liberalisation. The initial conditions under which liberalisation occurs are particularly important. It might be expected that favourable initial conditions in terms of inflation and the balance of payments would be more conducive to successful trade reform than a situation of economic crisis. However, Michaely et al (1991, Ch.4) conclude that liberalisation introduced under conditions of 'distress' are likely to be more intense and therefore are more likely to survive than those introduced under somewhat less unfavourable conditions.

It has also been pointed out that long periods of stability make reform difficult. A radical policy change often occurs where there is a sharp change of political regime or a very severe external crisis. Such a crisis not only discredits existing policies, but also facilitates reform because falling incomes prevent a flood of imports when restrictions are removed (Thomas, Nash and Associates, 1991, Ch.4).

This suggests that the very severe economic crisis in Bolivia which preceded the introduction of the New Economic Policy was paradoxically a factor favouring trade liberalisation. Moreover, the fact that it was introduced by a new government within a few weeks of coming to office, and represented a sharp break with the previous thirty years of Bolivian economic policy also contributed to the sustainability of the reforms. It is certainly striking that those groups which would normally oppose liberalisation, particularly industrialists and organised labour, were forced to acquiesce to the government's policy. It is hard to imagine that this could have occurred, had it not been for the economic and social dislocation caused by hyperinflation in 1985.

In addition to the initial conditions, the design and implementation of trade reform is also likely to influence its success. Although there is still some debate concerning aspects of trade reform such as the relative merits of a 'shock' *vis-à-vis* 'gradualism' and the appropriate sequencing of reforms, advocates of liberalisation have suggested a number of broad rules which should be followed in the design of trade policy reform (Michaely et al, 1991, Ch.16).

First, it is advisable to start with a strong initial move, such as dismantling quantitative restrictions on imports. This will give a clear signal that the government is serious about liberalisation. It should then be followed by reductions in tariffs which should be pre-announced with the largest reductions on the highest tariffs. The initial move to remove quotas should be accompanied by a devaluation of the nominal exchange rate, after which a relatively stable Real Effective Exchange Rate should be maintained.

Specific measures to promote exports are not regarded as necessary when import restrictions are removed and devaluation takes place, nor is a separate stage of export promotion, preceding import liberalisation, required (Michaely et al, 1991, Ch.16). Some advocates elaborate on this, emphasising the need for an efficient system to provide exporters with rapid and reliable access to inputs at prices no higher than world market prices (Thomas, Nash and Associates, 1991, Ch. 6).

There is general agreement that where inflation is high, stabilisation must either precede or accompany trade liberalisation. Macroeconomic stability during the period of liberalisation is seen as a key necessary (but not sufficient) condition for successful trade policy reform.

How did Bolivia's trade reform match up against these recommendations? The introduction of the NEP in August 1985 certainly represented a strong opening step in liberalisation. As was seen in Section III, quantitative restrictions were abolished and the first steps to reduce tariffs were included in DS 21060. A year later all tariffs were unified at 20% and a policy of further reductions to a level of 10% was announced.

The adoption of the NEP was accompanied by a massive devaluation of the boliviano and the establishment of a crawling peg system which, as was seen in section VI, kept the REER roughly stable. There was also a strong stabilisation policy which brought the rate of inflation down to less than 20% a year. Macroeconomic stability has been maintained throughout the period and the inflation rate was brought down to single figures by 1993.

In 1987 the Bolivian government did introduce an export incentive, the CRA, although this was regarded as unnecessary by some advocates of liberalisation. As was seen in the last Chapter this in fact helped to reduce the continuing bias against exports of manufactured goods. However this was seen by the World Bank and the IMF as an export subsidy, and they brought pressure to bear on the Bolivian government to replace the CRA by a Drawback system at a significantly lower rate. Thus, apart from a brief period at the end of the 1980s, there was little additional incentive to exporters. The government did, however, attempt to provide access to imported inputs at world prices for exporters through the RITEX and to establish industrial free zones, although as was seen above these were relatively little used.

Thus in terms of the initial circumstances in which trade liberalisation was introduced, the conditions in Bolivia were propitious. Even more significantly, the design and implementation of the trade reforms were very much in line with what is recommended by leading advocates of liberalisation. The Bolivian trade reforms have been sustained now for almost a decade, and the process of liberalisation has been extended during this period. In these terms, therefore, Bolivia can be regarded as an example of successful trade liberalisation.

Trade Liberalisation and Economic Performance in Bolivia

The present study has been concerned not with the success of trade policy reform in the narrow sense of the sustainability of liberalisation, but rather in terms of economic performance. In particular, it has focused on the extent to which the expected benefits from trade liberalisation have been achieved in Bolivia. This has been addressed in the context of the manufacturing sector, in the belief that a dynamic industrial sector is an important element in successful economic performance.

Section IV examined the extent to which trade liberalisation has been associated with changes in resource allocation in Bolivia. Although the manufacturing sector recovered from the depth of the crisis after 1985, and increased its share of GDP, it was concluded that in the longer term there has been a slight shift in resources away from manufacturing. However, broad sectoral aggregates disguise many of the changes in resource allocation which

have taken place, so that it was necessary to look at changes taking place within the manufacturing sector.

As expected, resources were reallocated out of import-competing industries and into exportables and non-tradable good industries. This reflected a decline in production in import-competing industries rather than significant expansion in either of the other two categories over the longer term. Indeed, with only isolated exceptions, there was very little evidence of substantial new investments in the manufacturing sector.

What was more surprising was the fact that, because import-competing industries were relatively labour-intensive, relative to export industries and particularly non-traded goods, there was a shift in the composition of output away from labour-intensive industries towards capital-intensive ones. In other words the expected benefits in terms of additional employment as a result of changes in the composition of output following trade liberalisation were not forthcoming.

In any case the advocates of trade liberalisation place more emphasis on the dynamic gains than on questions of static resource allocation. Here a central issue is the impact of trade reform on productivity performance. As was seen in Section V, while there is some evidence of a significant once and for all increase in labour productivity after 1985, this is probably due to the shake-out of workers made possible by the changes in labour legislation at that time rather than being a result of trade reform.

Of the mechanisms which it is claimed link trade liberalisation to productivity, there is no evidence to support the view that either increased competition or increased availability of imported inputs played an important role. The only mechanism which did potentially contribute to productivity growth was through increased output which would enable firms to take advantage of economies of scale. However, the overall impact of trade liberalisation on production is ambiguous since it leads to increased production in some industries and reductions in others. Moreover there is no clear link between trade liberalisation and rationalisation which would lead to an increase in firm size. Indeed there is some evidence that the average size of firms in Bolivian manufacturing since 1985 has contracted.

Another link which is often made between trade liberalisation and economic performance involves the growth of exports. Section V analysed Bolivian manufactured exports and concluded that the main factor which has led to improved export performance has been a more competitive and more stable Real Effective Exchange Rate. Import liberalisation has not had a significant effect on exports and few firms have taken advantage of the special temporary import regime for exporters (RITEX). Export incentives may have had some effect on

the growth of exports in the late 1980s, but the reduction and subsequent withdrawal of the CRA has undermined this effort.

It was also noted that there has been a significant shift in the composition of Bolivian non-traditional exports away from more highly processed products towards unprocessed and semi-processed exports. Very few exporters are internationally competitive and the bulk of exports of manufactured goods are to regional markets. Moreover, many exporters tend to do so only on a one-off basis and have not made the necessary investment to become long-term exporters.

This suggests that although Bolivia has been successful in the narrow sense of having designed and implemented a sustainable trade liberalisation package, in the more fundamental sense of the impact of the package on economic performance, trade liberalisation has been a failure. This is part of a more general paradox. Why, after pursuing neo-liberal policies for almost a decade, is the Bolivian economy struggling, with GDP *per capita* barely growing and still well below pre-crisis levels?

The Limitations of Trade Policy Reform in Bolivia

There are a number of possible explanations which could be advanced to explain this failure. All of these focus to a greater or lesser extent on the lack of an adequate supply response to the changes in incentives brought about by trade liberalisation.

First, it might be argued that the liberalisation of trade has not been implemented vigorously enough or that other policy reforms which are needed to support trade liberalisation have not been carried out and that in order to elicit the necessary supply response, further reforms are required. However, in view of the very thorough-going reforms introduced under the NEP and subsequently, this is not very convincing.

A second line of argument is to suggest that the trade reforms have lacked credibility. There is evidence from Argentina that firms may delay responding to reforms for up to 20 months where they are sceptical over the viability and duration of the reforms (Petrei and de Melo, 1985). This can lead to perverse effects – for example, where goods are imported in anticipation of a subsequent return to trade controls.

While this may have been a problem during the early stages of the Bolivian NEP, it is difficult to argue that a policy which has been sustained for almost ten years is lacking in credibility. In these circumstances, causation is more likely to go from the failure of trade reform to deliver the goods in terms of increased

growth, productivity and exports to the eventual undermining of credibility, than the other way round.

Structuralists have always argued that the Latin American economies have been characterised by supply rigidities and bottlenecks. The neoclassical view of efficient free markets with high elasticities of supply and of substitution is a long way from the reality of Bolivian markets. Thus, a third argument is that numerous bottlenecks have acted to constrain the supply response to policy reform. In this context one widely cited bottleneck is in transport which is often referred to as an obstacle to exports (see Section VI) and as a constraint on increased investment (Mireau-Klein et al, 1992, Table 10).

Since resources are not fungible between different economic activities, the low level of investment is clearly central to the inadequate supply response of Bolivian manufacturing (see Section V). Although in the short-run there is some scope for increased production and productivity from higher levels of capacity utilisation, in the long term this depends on investment to expand and modernise plants. Similarly, export expansion requires investment to produce products of international quality and to develop foreign markets, and cannot be based simply on switching production from the domestic to overseas markets.

What then are the major constraints to increased investment in Bolivian manufacturing? A survey of 59 manufacturing firms in 1991 found that the high cost and restricted availability of credit was the major constraint on investment (Mireau-Klein et al, 1992, Table 8). This is not surprising since interest rates on dollar bank loans in Bolivia have been over 20% for most of the period since 1985. Moreover, bank credits have tended to go disproportionately to firms which are linked to the banks through cross-directorships (Mireau-Klein et al, 1992, Table 9).

The next two factors, in terms of the proportion of manufacturing firms identifying them as a most serious constraint on investment, were insufficient domestic purchasing power and pressure from imports and/or smuggling (Mireau-Klein et al, 1992, Table 8). These constraints derive at least in part from the trade liberalisation itself, which has led to a contraction in demand for domestic producers in many areas.

A further factor which ranked highly for exporting firms, but was less significant for domestic market-oriented manufacturing firms was inadequate infrastructure. As indicated above, the most frequently mentioned aspect of infrastructure was transport, particularly to foreign markets and to a lesser extent to domestic markets (Mireau-Klein et al, 1992, Table 10).

These constraints on investment derive to a large extent from the structural adjustment policies which have been pursued by the Bolivian government since

1985. Low levels of investment in the aftermath of trade liberalisation is not unique to Bolivia. It seems to have been a particular problem in the low-income countries and in Sub-Saharan Africa (Thomas et al, 1991, Table 3.6), and has also occurred in some other Latin American countries which have liberalised such as Uruguay (Fanelli et al, 1992).

This suggests that there are inherent contradictions in the policies pursued. The most obvious of these relates to the high real interest rates which are brought about by financial liberalisation. Although these are sometimes regarded as transitory following a period of high inflation, this transitory period has been extremely long drawn out in the Bolivian case. As a result, the World Bank is now emphasising the need for further reform of the financial sector in order that interest rates can be brought down. However, it is possible that interest rates will remain high and that investment will be concentrated on activities such as trade and real estate which give a much quicker return than manufacturing.[28]

The inadequate infrastructure identified by many firms as a constraint is partly a long-term consequence of Bolivia's underdevelopment. However, structural adjustment policies may well have intensified the problem. Although initially public investment increased from the very low levels of the crisis, it fell in the late 1980s and remains well below the levels of the early 1980s (UDAPE, 1992b, Table 3.9.1). Thus, the need to reduce public expenditure generally has constrained investment in infrastructure.

In the Bolivian case the problem is not one of 'crowding out' of private investment but, because of the complementarity between public investment in infrastructure and private investment, low levels of public investment tend to have a knock-on effect on the private sector. This is a second way in which structural adjustment policies which accompanied trade liberalisation have impeded the supply response which is required if trade reform is to be successful.

A final factor which has contributed to the inadequate supply response from manufacturing has been a tendency for the 'rules of the game' to change. The stability and predictability of incentives is important in the face of the irreversibility of investment decisions (Rodrik, 1992). One of the complaints of firms in the Bolivian survey previously quoted was that changes in taxes and export incentives have had a negative effect on the climate for investment. This is particularly true in the case of investment for exports. While a major source of uncertainty has been removed as a result of the new exchange rate policy, frequent changes in incentives have partly offset this.

Conclusion

This review of the Bolivian experience gives rise to some scepticism concerning the advantages of a wholesale policy of liberalisation in a low income country such as Bolivia. While some positive steps have been taken, particularly the introduction of a more realistic and stable Real Effective Exchange Rate, and the dismantling of some highly protected and extremely inefficient sectors, the overall results have been disappointing.

This is not a result of the Bolivian government's failure to implement fully or to maintain its trade reforms. As the previous section shows there are a number of inherent contradictions in the package of policies which have been applied in Bolivia.

The very rapid, 'full menu' approach to liberalisation, which may indeed have contributed to the success in terms of sustainability, has been partly responsible for its failure in terms of performance. A more gradual approach, involving a number of stages might well have proved more successful. In particular the development of some competitive industries before widespread liberalisation could have had a more beneficial outcome.

The experience of other countries which have become successful exporters indicates that they developed their exports while still maintaining a protected domestic market and that they succeeded in creating internationally competitive industries (cf. Sachs quoted in Helleiner, 1990). Similarly, far from liberalising financial markets, they kept the financial sector under tight state control and used low interest credit to promote export and other activities.

The type of liberalisation pursued in Bolivia is likely to lead to a return to an allocation of resources along the lines of static comparative advantage. Indeed, as noted above, there is evidence of this in terms of the changes in the composition of non-traditional manufactured exports towards less processed goods. Few, if any, of the dynamic gains from trade liberalisation are likely to be generated since these depend on creating a dynamic comparative advantage in new activities. This in turn can only be achieved through a significant degree of state intervention.

The history of state intervention in Bolivia before 1985 can hardly make one optimistic concerning the ability of the Bolivian state to pursue the kind of strategic economic interventions that are required. However, the depth of the economic crisis of the mid-1980s did, paradoxically, give the Bolivian state more room to manoeuvre domestically. It is perhaps regrettable that it chose to make use of it in the way that it did. In any case the international room to manoeuvre was, and remains, extremely constrained.

Notes

1. From the mid-1970s illegal coca exports became an increasingly important source of foreign exchange earnings.

2. There is a substantial literature on the New Economic Policy. See for example Morales (1987, 1988a), Antezana (1988), Nogales (1989), Aguirre et al (1992).

3. The ratio of exports plus imports to GDP averaged 53.5% in the period 1975 to 1979.

4. This is the equivalent of a reduced form equation since the intermediate variables which affect productivity are not included in the analysis.

5. An exception is the study by Clarke and Kirkpatrick (1991) which found no statistically significant relationship between trade liberalisation and the growth of imports.

6. See UDAPE (1990a) for a summary of the findings of a number of these studies.

7. This involves breaking down non-tradable inputs into their tradable and non-tradable components and including the non-tradable component in the value added on which protection is calculated.

8. It is particularly difficult to draw conclusions from changes in the share of agriculture in GDP since this depends on the level of agricultural output and this is affected by weather conditions in the year concerned.

9. Industries were defined as producing exportables when exports accounted for over 10% of gross production in 1988, importables when imports represented more than 10% of imports plus production. All other industries were treated as non-tradables. In one case, sugar refining (3118), although the export ratio was slightly below 10% in 1988, the industry was considered as producing exportables because over the period as a whole, it was a leading export sector.

10. Imported inputs accounted for 29% of the value of production for industries producing import competing goods, 8% for non-tradables and 1% for exportables in 1989 (author's calculation from INE data).

11. If Base Metals (3720), the industry which bore the brunt of the deterioration in the terms of trade in 1985-6, is excluded, output of exportables rose very slightly between 1978 and 1991, but still by considerably less than production of non-tradables.

12. Under certain assumptions there is a direct relationship between these two indicators such that DRC = 1 + ERP. This requires ERP to include the effects of non-tariff as well as tariff barriers, and for there to be no non-trade price distortions. Neither of these assumptions holds in the Bolivian case, so that at best the ERP measure is a crude proxy for DRC. Despite these qualifications ERP may provide a useful indicator at least of the ranking of industries according to their DRCs. For a discussion of the DRC concept and its relation to ERP, see Greenaway and Milner, 1993, Ch.6.

13. Spearman's Rank Correlation Coefficient was -0.464 for 1978-91 and -0.143 for 1985-91.

14. Spearman's Rank Correlation Coefficient was 0.503 for 1978-91 and 0.539 for 1985-91.

15. Figures in brackets are t-statistics.

16. One industry, oil refining (3530), was excluded because its extremely high capital-intensity relative to the rest of Bolivian manufacturing industry would have severely distorted the results.

17. The estimated regression equations for the 1978-91 period were:

$$GROWTH = \underset{(-2.87)}{-7.02} + \underset{(2.61)}{0.12}\,KINT_{*} + \underset{(0.31)}{0.02}\,PROT \qquad Adj\ R^2 = 0.14$$

while for the 1985-91 period, it was:

$$GROWTH = \underset{(-0.55)}{-2.55} + \underset{(2.07)}{0.18}\,KINT_{*} + \underset{(0.61)}{0.06}\,PROT \qquad Adj\ R^2 = 0.07$$

18. For the 33 industries covered in Table IV.2, the value-added measure of capital intensity was 22.0 for importables, 30.7 for exportables and 45.8 for non-tradables. The electricity measure gave a similar ranking with 1.14 for importables, 1.29 for exportables and 2.01 for non-tradables.

19. For a full discussion of these relationships, see Weiss (1984).

20. Since data on capacity utilisation in manufacturing is only available from 1982 onwards, the level of capacity utilisation in earlier years was estimated from the deviation of the index of manufacturing output (INVOFIM) above or below its trend rate of growth.

21. The Cámara Nacional de Industrias (CNI) data base is known as the Sistema de Información Industrial Privado and is referred to henceforth as CNI, SIIP.

22. An interesting question is how the beer industry has been able to finance such large investments in recent years when other industries have suffered severe financial constraints. The buoyant domestic market has helped in keeping profit margins relatively high in the industry. It is also widely rumoured that drug money is involved in the industry.

23. The deterioration in the international competitiveness of non-traditional exports as a result of changes in incentives in 1991 have also been commented upon in two other studies which have used different methodologies (see UDAPE, 1990b; Pinell Siles, 1993).

24. This parallels the finding in Section IV that trade liberalisation has been accompanied by a shift in resource allocation towards relatively capital intensive industries, and that contrary to the prediction of the Hecksher-Ohlin theorem, Bolivian exportables were more capital intensive than import competing sectors.

25. In both cases the significance of the capital intensity variable was slightly reduced when the protection variable was included in the equation.

26. Capacity utilisation in the fiscal year 1987-8 was used as this was the first year for which data at the 4-digit level could be obtained. The data was taken from the Cámara Nacional de Industrias, Sistema de Información Industrial Privado.

27. The remainder of this section draws on three main sources. The first is a general survey of 70 exporters and potential exporters carried out by UDAPE in 1992. The second is my own interviews with 25 firms in the textile and beverages industries undertaken in 1993. Finally it also draws on data from an INPEX survey of the obstacles to exports faced by sixteen textile firms carried out in 1989.

28. A third of the manufacturing firms surveyed in 1991 indicated that the length of the pay-back period from investment was a 'most serious' problem constraining investment.

APPENDIX:
SURVEY OF MANUFACTURING FIRMS

Introduction

Some of the expected responses to trade liberalisation which take place at the firm level are difficult to identify from aggregate or industry level data. These firm- and plant-level responses involve such things as the introduction of new technology, changes in the organisation of production, the introduction of new or improved products, or efforts to develop new markets.

In order to discover the extent of such changes within Bolivian manufacturing, interviews were carried out with managers in 25 Bolivian firms in May and June 1993. In most cases, one of the firm's plants was also visited so that any changes in production could be observed visually.

Rather than select a random sample of manufacturing firms, it was decided to concentrate on two three-digit industries: beverages (313) and textiles (321). These industries were chosen because they represented two very different situations. Beverages have grown rapidly and increased their share of manufacturing value added, while textiles have been one of the sectors worst hit, first by the economic crisis and then by competition from imports.

Four four-digit industries which accounted for the bulk of production within the two three-digit industries were then selected. These were beer (3133), soft drinks (3134), spinning, weaving and finishing (3211) and knitting (3213). As was seen in Section V, production in these four industries has shown very different patterns over the past decade.

No attempt was made to select a random sample of firms within each of these four industries. In some industries, particularly soft drinks and knitting, there are a large number of small producers and such a procedure would have been extremely time consuming. Since the main objective of the survey was to understand the effects of trade policy reform on production and trade, it was legitimate to concentrate on the firms which accounted for the bulk of output. This inevitably meant that it was not possible to address some interesting questions such as the differential effects of trade liberalisation on different kinds of firms, but this was not the main aim of the research. The firms interviewed therefore include most of the major producers in the four industries. As Table A.1 indicates, three firms were interviewed in the beer industry, five in soft drinks, twelve in spinning, weaving and finishing and five in knitting.

Table A.1: Firms Interviewed

Firm	Location	Industry	Start Date	Employment	Control
1	SCZ	3133/4	1952	300	Ind
2	LPZ	3133	1886	600	Group
3	CBB	3133	1895	500	Group
4	LPZ	3134	1920	630	Ind
5	LPZ	3134	1888	600	Group
6	SCZ	3134	1976	192	Group
7	LPZ	1334	1953	160	Group
8	SCZ	3134	1978	70	Group
9	CBB	3211	1969	420	Ind
10	LPZ	3211	1953	350	Group
11	LPZ	3211	n.a	200	Group
12	LPZ	3211	1923	190	n.a
13	SCZ	3211	1968	186	Group
14	SCZ	3211	1981	170	State
15	LPZ	3211	1959	120	Group
16	SCZ	3211	1969	100	Group
17	LPZ	3211	1948	100	Group
18	LPZ	3211	1982	87	Group
19	LPZ	3211	1991	72	Group
20	CBB	3211	1965	40	Group
21	LPZ	3213	1984	170	Ind
22	LPZ	3213	1978	160	Group
23	LPZ	3213	1967	150	Group
24	LPZ	3213	1973	102	Ind
25	LPZ	3213	n.a	65	Group

Notes: Control : Group - part of a multi-firm group
Ind - independent firm
Location: LPZ - La Paz
SCZ - Santa Cruz
CBB - Cochabamba

Source: Personal interviews.

Firms' Perceptions of the Impact of Trade Policy Reform

In order to assess the impact of different aspects of the trade policy changes introduced in Bolivia after 1985, firms were questioned regarding the impact of a number of key policies on their activities. On the import side, the policies considered were the changes in tariffs on imported inputs, on imports of machinery and equipment, and on imports of finished goods competing with the firm's own production, and changes in non-tariff barriers. On the export side, interviewees were asked their opinion of the Certificado de Reintegro Arancelario (CRA) which gave exporters a 10% tax rebate; its replacement by the Drawback which reduced the rebate to between 2% and 4% for manufactured goods; the system of temporary imports for exporters (RITEX); the free trade zones (FTZs); and the assistance given to exporters by the Instituto Nacional de Promoción de Exportaciones (INPEX). Finally, firms were questioned about the impact of simplification of the bureaucratic procedures involved in importing and exporting (*trámites*) and the change in the foreign exchange system as a result of the introduction of the Bolsín and the adoption of a crawling peg.

The responses of the firms were scored for each policy instrument on a scale from -2 for very negative to +2 for very positive. Table A.2 indicates the average score for each policy for all firms and for each of the four industry groups. Perhaps the most striking feature of the table is that, overall, trade reform is not perceived by the firms interviewed to have had very much impact on their activities. The only aspect of government policy to emerge with an unambiguously significant positive effect (a score of over +1) is exchange rate policy, involving a steady gradual devaluation to maintain a roughly stable real exchange rate. Another area which was regarded fairly positively was the simplification of the bureaucratic procedures involved in importing and exporting.

The export incentives provided by the CRA were mentioned positively by some firms, while a number of firms also felt that the reduced tariff duty on imported capital goods was beneficial, although two firms felt that they were better off with the exemptions that used to be granted under investment laws prior to 1985.

Only two aspects of the policy reforms were regarded as negative on balance. First, a number of firms had been hit by the reduction in protection for the goods which they produced, although overall the assessment of the negative impact was not overwhelming. The second negative effect was felt to be the replacement of the CRA by a drawback system which considerably reduced the incentives for exporters.

These generalisations need to be qualified somewhat for each of the four-digit industries identified. The beer companies had the most positive overall evaluation of the programme, and regarded the impact of the reduced tariff on

capital goods, the CRA, simplification of the bureaucracy and the role played by INPEX particularly favourably. Interestingly, this was the only industry in which it was felt that the government export promotion agency INPEX was a positive factor. Perhaps surprisingly, the foreign exchange system was not regarded as a major positive factor.

Table A.2: Firms' Perceptions of Impact of Trade Policy Reforms on their Activities

	3133	3134	3211	3213	Total
Tariff 1	0.00	0.40	0.00	1.00	0.28
Tariff 2	1.00	0.60	0.25	0.60	0.48
Tariff 3	0.00	0.00	-0.83	-0.60	-0.52
NTBs	0.00	-0.20	0.08	0.40	0.08
CRA	1.33	0.00	0.25	1.40	0.56
Drawback	-1.00	0.00	-0.25	-0.60	-0.36
RITEX	0.33	0.00	0.17	0.40	0.20
FTZs	0.0	1.00	0.00	0.00	0.20
INPEX	1.00	0.00	0.00	0.00	0.12
Bureaucracy	1.33	1.20	0.58	0.60	0.80
Foreign Exchange System	0.67	1.40	1.00	1.20	1.08
Average	0.42	0.40	0.11	0.40	0.27

Notes: Firm responses have been qualified as very positive (+2), positive (+1), no impact (0), negative (-1), very negative (-2).
Tariff 1 - changes in tariffs on imported inputs.
Tariff 2 - changes in tariffs on machinery and equipment.
Tariff 3 - changes in tariffs on finished products.
Source: Personal interviews.

The soft drinks industry is in some ways the least affected by the policy changes, since it has neither benefited from measures to promote exports, since the industry does not export, nor suffered from the liberalisation of imports which are negligible. However, it has benefited somewhat from measures which have reduced the costs of imports of its inputs and machinery, including the simplification of paper work and the greater predictability of the exchange rate. This industry has also benefited somewhat from the creation of the free trade zones which has enabled them to keep imported concentrates in the zones and only pay duty on them as they are withdrawn from the warehouse for use in the plant.

Not surprisingly the spinning, weaving and finishing industry has the least positive overall evaluation of the trade reforms. Although some measures such as the foreign exchange regime and the reduction in bureaucracy are viewed favourably, the reduction in protection on finished products has had a negative effect. Interestingly the knitting industry has a rather more positive assessment of the impact of the reforms, although it also shares the negative view of the

impact of liberalisation of imports of competing products. It has, however, the most positive evaluation of the reductions in tariffs on imported inputs which have to some extent offset the negative impact on effective protection. Since there are a number of exporters in this industry, it shares the positive view of the CRA and the negative view of its replacement by the drawback system which was found in the beer industry.

Changes in Production, Technology, Investment and Organisation

In order to try to evaluate the responses of firms to trade liberalisation, they were also asked about major changes which had taken place within the firm since the mid-1980s. In terms of investment, firms were asked to indicate whether there had been no, little, average or substantial investment to expand and to modernise capacity since 1985. Responses were ranked on a scale from 0 (none) to 3 (substantial).

As Table A.3 indicates, there were major differences between industries. The beer industry made substantial investments both to expand and modernise their capacity. The soft drinks industry showed less substantial investment than beer. This was a result of a mixed picture, with substantial investment in capacity expansion and modernisation by two Coca Cola franchisees, but little investment among the other firms interviewed. The predominant picture in the spinning, weaving and finishing industry was of very little investment, with a couple of exceptions, while in knitting there was considerable investment in capacity expansion but very little evidence of modernisation.

Table A.3: Changes in Production since 1985

	Expansion	Modernise	Technology	Organisation
3133	2.33	2.33	1.33	0.33
3134	1.60	1.40	0.80	0.60
3211	0.83	0.83	0.33	0.33
3213	2.60	1.40	0.80	0.80
Total	1.52	1.24	0.64	0.48

Notes: Investment to expand or modernise plant ranked on a scale from 0 (none) to 3 (substantial).
Change in technology and organisation ranked on a scale from 0 (none) to 2 (major).
Source: Personal interviews.

In the case of technological and organisational changes, firms were asked whether there had been no change, some change or major change and the responses were scaled from 0 to 2. The responses to questions on technology not

surprisingly corresponded quite closely to those on investment in modernisation, with significant changes being reported only by 3 firms in the beverages industry. Similarly, there was little evidence of organisational changes taking place at the plant level, such as the introduction of just-in-time systems or group working, although managers at one or two firms were aware of these practices.

Changes in Trade and Product Strategy

Response to Import Liberalisation

Micro-level studies of the response of firms to the economic reforms in the southern cone countries of Latin America during the late 1970s and early 1980s indicate a number of possible reactions to import liberalisation (Corbo and de Melo, 1985). In Argentina and Uruguay it was found that firms introduced new products in order to compete with imports. In Chile a somewhat different strategy was pursued, with firms becoming more specialised in order to concentrate on those product lines in which they could compete with imports, and to become more competitive by increasing production runs and reducing down-time. This response was not significant in Argentina and Uruguay because, it was suggested, redundant protection remained late into the reform period. In Argentina and Chile, firms claimed to have improved the quality of their products in order to compete with imports.

In the Bolivian cases there was little evidence of any of these strategic responses to the trade reforms. None of the firms interviewed, for example, had decided to specialise in a small range of products in order to be better placed *vis-à-vis* international competition. Although a number of firms across all four industries reported that they had introduced new products since 1985, in none of these cases was it seen as a response to competition from imports.

Similarly, although most firms claimed to have improved the quality of their products since 1985, this was not directly attributable to increased competition from imports. Indeed it was rather a routine response that the firm was always seeking to improve quality and it was difficult to obtain independent verification that such improvements had taken place in many cases.

Another response noted in the southern cone countries was that a number of firms had started to import products themselves and to shift out of production. This reflected the lack of distribution channels for imports when they have been restricted for a long time. Such a response was rare in the Bolivian case. Only two firms reported having imported products to complement their locally produced product range, and one of these had found that this was not profitable and no longer did so. This may reflect the relatively open nature of the Bolivian economy compared to those of the southern cone prior to liberalisation, and the

fact that a widespread, and often informal, distribution network already existed for imported products.

Perhaps surprisingly, despite reduced import duties and easier access to foreign exchange, only one firm reported that it had increased its reliance on imported inputs since 1985. This is consistent with the finding in Table A.2 that changes in tariffs on imported inputs were not perceived as having a significant positive effect by the firms interviewed. This probably reflects the fact that many of these firms enjoyed exemptions or faced low import duties on their inputs even before 1985.

Export Performance

Among the southern cone countries, a strong export response by firms was only noted in the case of Uruguay in the mid-1970s, but these firms turned back to the domestic market in the period 1979-82 (Mezzera and de Melo, 1985). In Chile only one import-competing firm attempted to export, but the effort was abandoned after four years due to increasing costs (Corbo and Sánchez, 1985).

In the Bolivian case, although nine out of the 25 firms interviewed reported some exports, only two of them exported a significant proportion of their output, and both were already exporting before trade was liberalised. With the exception of these two firms, which also exported to Europe and North America, the bulk of exports went to neighbouring countries in Latin America. Thus there is little evidence that firms have so far re-oriented their strategies to international markets, although a few firms did report plans significantly to increase their exports over the next few years.

Why has the export performance of the firms interviewed not been more impressive in the aftermath of the post-1985 reform of trade policy? A number of obstacles to expanding exports were identified, some of which are internal to the firm and some external. The most commonly identified external factor limiting exports were transport costs which were mentioned by nine of the 25 firms and by six of the nine firms which had any experience of exporting. It was seen as a problem by at least some firms in each of the four industries surveyed.

As far as internal problems were concerned, a more differentiated pattern across industries emerged. A number of firms in the beverages industry (both in beer and soft drinks) were unable to export because they did not produce their product in appropriate containers (cans or non-returnable bottles). An added complication in the case of some soft drinks manufacturers who produced well known international brands was that under the terms of their franchise they were only permitted to sell in the domestic market.

A major problem facing a number of firms in the spinning, weaving and finishing industry was that their production was not internationally competitive

either in terms of quality or in terms of price. Lack of international competitiveness reflected the technological backwardness of much of the industry and the small scale of production. Low volume was also identified as a problem by some firms because of insufficient capacity to fill the kind of demand requests that are standard in the industry internationally.

Conclusion

The overall picture that emerges is that trade liberalisation appears to have had few of the dynamic effects anticipated at the firm level. The most obvious illustration of this is the soft drinks industry, which is largely a non-traded good industry. Despite liberalisation, imports have remained negligible as have exports. The main dynamic in the industry has been the growth of the domestic market and the struggle for market share. Liberalisation has had a minor effect in so far as it has cheapened imported inputs, but this has not led to any major change within the industry.

The beer industry too has been relatively unaffected, with very limited imports. The rapid growth of the domestic market has again been the main factor leading to considerable investment and technological change. Although two of the three companies do export and look favourably on the government's measures to promote exports, in aggregate overseas sales are marginal.

The textile industry has been affected to a much greater extent by trade liberalisation. In the area of flat goods, the major effect has been through increased competition, both directly from imported fabrics and indirectly as the result of the loss of market share by the domestic clothing industry. The result has been substantial excess capacity and very little new investment. As a result technological and organisational change has been insignificant in most firms. It is also important to bear in mind that the firms interviewed were those that had survived the trade reforms, and that in the textile industry particularly, a number of major firms had in fact closed down. Thus the negative effects of trade liberalisation are inevitably underestimated since the impact on such firms is not evident from the interviews.[1]

The only area in which it is possible to perceive some elements of a positive supply response to liberalisation is in the knitting industry. Even here, however, the positive developments are at best patchy and have not led to substantial technological or organisational change except for one or two cases.

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[1] In fact interviews were carried out with the owner and a former manager from the largest textile firm in Bolivia, which closed down in 1989. These highlighted the problems created by increased competition from imports for a firm which had failed to update its plant and equipment (while it had been highly protected) .

Generally it can be concluded that there was no relation between the extent to which firms were subject to international competition and the extent to which they adjusted. Growing firms in beverages tended to invest and change more. Textile firms often found it difficult to invest and therefore changed very little.

STATISTICAL APPENDIX

Table A.1: Data used in Time-series Regressions

Year	GDP	MIMP	CAPUT	REER	RERVAR (%)	MfgX	MDUTY	CRA
1976	101.8	168.7	n.a	n.a	n.a	58.0	n.a	0
1977	107.2	164.9	n.a	n.a	n.a	47.9	n.a	0
1978	109.2	192.5	51	29.0	n.a	46.3	9.3	0
1979	109.5	256.9	50	30.4	n.a	78.6	9.9	0
1980	106.1	205.6	50	33.7	6.7	119.6	12.3	0
1981	106.5	264.0	50	45.1	4.4	75.4	11.5	0
1982	103.1	196.6	47	47.7	39.7	60.9	6.3	0
1983	98.8	223.7	45	45.0	27.4	34.6	5.9	0
1984	98.2	152.4	42	58.4	33.3	20.0	0	0
1985	97.5	231.7	38	100.0	58.1	19.4	32.3	0
1986	96.0	183.2	42	29.5	8.5	73.6	10.7	0
1987	98.3	256.1	48	28.4	1.7	73.5	13.0	0
1988	102.2	185.7	50	27.0	3.9	71.1	15.8	0.87
1989	105.4	208.3	49	25.9	1.7	142.4	11.6	7.59
1990	108.2	214.0	50	21.8	2.1	175.2	10.3	7.49
1992	113.4	286.2	54	22.6	0.3	166.3	7.1	3.4
1992	117.7	200.4	55	22.0	0.9	176.9	7.1	1.89

Notes:
GDP - Gross Domestic Product in Bs. mn. at 1980 prices
MIMP - Imports of intermediate inputs and raw materials for industry ($ mn.)
CAPUT - average annual level of capacity utilisation in manufacturing (%)
REER - Real Effective Exchange Rate Index (1985 = 100)
RERVAR - coefficient of variation of monthly Real Exchange Rate
MfgX - exports of non-traditional manufactures ($mn.)
MDUTY - import duties paid as % of imports of manufactures
CRA - value of CRAs issued as % of value of non-traditional exports

Source: INE; UDAPE; IMF.

Table A.2: Industry Variables at 4-Digit Level

CIIU	LP87-91 (%)	Prod87-91 (%)	VA/L	CAPUT	4CR (%)
3111	-12.9	-1.2	15.6	59	79.4
3112	29.3	22.2	33.0	49	91.2
3113	-1.6	-15.8	9.7	43	100.0
3115	0.0	7.3	50.5	62	100.0
3116	11.7	4.4	35.7	41	63.2
3117	-0.1	6.6	26.5	53	82.5
3118	20.9	17.5	46.4	33	100.0
3119	2.6	2.8	9.9	72	90.2
3121	0.1	2.5	42.5	54	91.6
3122	-28.8	-9.3	21.0	53	100.0
3131	n.a	2.7	23.7	38	94.8
3132	7.5	-3.8	15.2	45	100.0
3133	4.5	5.6	98.4	27	94.9
3134	2.7	5.6	25.7	46	47.5
3140	-7.9	3.9	96.5	70	100.0
3211	6.2	-5.7	13.6	42	62.2
3213	31.1	25.9	13.3	52	68.8
3220	4.4	0.5	13.2	47	81.5
3240	10.0	4.0	22.3	45	96.9
3311	n.a	-3.1	15.7	49	43.3
3420	1.1	3.6	22.7	43	64.5
3511	-7.8	6.4	25.9	42	80.2
3512	n.a	-37.6	10.1	n.a	n.a
3523	23.2	22.0	30.3	42	93.3
3530	n.a	5.2	1267.7	n.a	100.0
3559	n.a	-4.9	13.8	63	n.a
3560	-2.5	-7.6	17.2	44	37.9
3620	-4.2	-3.6	20.7	40	100.0
3691	n.a	19.0	12.2	55	77.3
3692	9.7	9.6	55.5	46	96.8
3699	2.6	5.9	19.5	47	79.8
3720	12.1	51.1	26.6	43	100.0
3811	n.a	-19.2	4.2	35	100.0
3819	1.6	5.0	29.3	44	72.4

Notes: LP87-91 - average annual growth in labour productivity, 1987-91
Prod87-91 - average annual growth in production, 1987-91
VA/L - value added per person employed, 1989 ('000 Bs.)
CAPUT - capacity utilisation, 1987/8 (%)
4CR - share of largest four plants in industry output, 1989.

Source: Own elaboration from INE and CNI, SIIP data.

Table A.3: Trade Variables at 4-Digit Level

CIIU	MCOMP (%)	DPROT	XRATIO (%)	EXPGR	IMPCONT (%)	IMPSHARE (%)
3111	0.5	0.0	3.0	-27	5.4	9.0
3112	22.9	2.9	0.0	0	4.5	8.4
3113	31.8	-19.1	1.6	1448	32.8	63.1
3115	13.5	-9.4	12.8	161	18.7	25.2
3116	14.4	-6.1	8.2	394	45.1	62.1
3117	0.2	-30.9	0.0	0	8.9	15.2
3118	1.6	-26.5	9.4	534	0.3	0.8
3119	47.5	-37.1	5.9	-79	0.3	0.8
3121	31.8	-4.1	0.0	1028	15.5	39.9
3122	17.7	9.0	0.0	n.a	30.8	69.0
3131	8.1	-53.2	0.9	36	0.9	2.8
3132	37.3	-53.9	0.0	-100	0.0	0.0
3133	6.3	-13.0	0.7	221816	21.3	62.1
3134	1.5	-29.5	0.0	13	19.3	45.6
3140	23.1	1.2	0.1	-100	41.6	81.4
3211	31.3	-24.2	5.0	-6	32.6	59.8
3213	37.5	-53.4	2.5	3119	16.7	30.5
3220	37.5	-77.4	5.6	646	16.5	35.7
3240	24.0	-40.5	0.1	59681	16.8	53.3
3311	0.4	-19.3	36.7	115	0.9	2.1
3420	20.9	1.2	0.0	7373	52.9	99.3
3511	86.1	-0.2	10.5	650	4.1	25.6
3512	95.3	4.2	0.0	99	n.a	n.a
3523	45.9	-20.9	0.2	-100	34.7	65.3
3530	4.5	3.5	1.3	311	0.7	3.0
3559	81.5	-22.0	1.7	12411	n.a	n.a
3560	58.3	-37.8	0.6	0	49.3	95.3
3620	23.3	-15.0	0.0	-49	13.0	49.6
3691	26.7	8.2	0.0	0	0.0	0.1
3692	9.9	-10.5	0.0	17	3.5	18.4
3699	25.2	-16.5	0.0	790	9.5	26.4
3720	4.2	7.2	104.4	81	0.1	0.1
3811	32.7	-21.0	0.0	-96	9.1	22.3
3819	32.7	-23.0	7.0	-100	50.3	85.6

Notes: MCOMP - imports as a share of gross production plus imports, 1988
DPROT - change in nominal rate of protection, 1982-88
XRATIO - exports as a share of gross production, 1988
EXPGR - percentage increase in $ value of exports, 1986-1991
IMPCONT - ratio of imported inputs to gross production, 1989
IMPSHARE - share of imported inputs in total inputs, 1989

Source: Own elaboration from INE data.

Table A.4: Data for Manufacturing Industries by National Accounts Sectors

	GRNXPRD	GREXPOR	K/L	MSHARE	ERP88	DERP
6	7.20	0.0	10.1	1.6	-4.4	84.8
7	100.50	0.0	8.0	70.0	7.8	-5.7
8	23.60	-10.0	9.1	27.2	21.2	43.8
9	51.10	7.0	6.7	16.1	54.6	59.9
10	21.00	0.0	21.0	8.5	49.6	-9.6
11	39.70	77.3	37.6	12.5	19.5	68.9
12	20.60	0.0	0.0	74.5	13.0	182.7
13	-124.60	210.0	15.6	32.9	19.9	149.2
14	-35.00	25.4	6.1	2.5	1.6	144.2
15	44.40	0.0	10.0	36.5	12.8	63.2
16	-17.40	79.9	16.5	71.4	13.6	51.2
18	58.40	50.0	28.2	24.9	18.7	37.4
20	46.60	11.4	11.8	62.7	11.6	45.8
21	21.60	50.0	2.8	55.7	6.3	43.6

Notes: GRNXPRD - % increase in Non-export Production, 1986-91
GREXPORT - % increase in Exports, 1986-91
K/L - fixed assets per person employed, 1987-8 ('000 Bs.)
MSHARE - imports as a share of total inputs, 1988 (%)
ERP88 - Effective Rate of Protection, 1988 (%)
DERP - change in Effective Rate of Protection, 1982-88

Sources: Own elaboration from INE and CNI, SIIP data.

BIBLIOGRAPHY

Afcha, G., G. Huarachi, R. Pereira and F. Valverde (1992), 'La política antiinflacionaria de choque y el mercado de trabajo: El caso boliviano', *Análisis Económico*, Vol. 3, April.

Agarwala, R. (1983), *Price Distortions and Growth in Developing Countries*, World Bank Staff Working Papers, No. 575, Washington.

Agosín, M. (1991), *Trade Policy Reform and Economic Performance: A Review of the Issues and some Preliminary Evidence*, Geneva, UNCTAD Discussion Papers, No. 41.

Agosín, M. and R. Ffrench-Davis (1993), 'Trade Liberalization in Latin America', *CEPAL Review*, No. 50, August.

Aguirre, A., C. Arze, H. Larrazábal, G. Montaño and R. Moscoso (1992), *La Intencionalidad del Ajuste en Bolivia*, La Paz, CEDLA, Programa de Ajuste Estructural, Estudios e Investigaciones, No. 3.

Aguirre, C., D. Rozo and L. Terso (1992), *Diagnóstico Tecnológico Actualizado del Sector Industrial Boliviano*, La Paz, Informe Final Presentado a la Asesoría de Ciencia y Tecnología de la Vicepresidencia de la República, Ministerio de Planeamiento y Coordinación y Corporación Andina de Fomento.

Ahluwalia, I. (1994), 'The Role of Trade Policy in Indian Industrialization' in G. K. Helleiner (ed.), *Trade Policy and Industrialization in Turbulent Times*, London, Routledge.

Amsden, A. (1989), *Asia's Next Giant*, Oxford, Oxford University Press.

Antezana, O. (1988), *Análisis de la Nueva Política Económica*, La Paz, Editorial Los Amigos del Libro.

Arana, E. (1991), *Sector Textil*, La Paz, report prepared for the Junta del Acuerdo de Cartagena, Programa Andino de Promoción de Exportaciones.

Arauco, I. (1988), 'Una Aproximación al Análisis de la Relocalización', in Centro de Estudios del Trabajo, *La Relocalización*, La Paz, Edobol.

Balassa, B. (1982), *Development Strategies in Semi-industrial Economies*, Baltimore, Johns Hopkins University Press for the World Bank.

Berry, A. (1991), 'Firm (or Plant) Size in the Analysis of Trade and Development', in G. K. Helleiner, *Trade Policy, Industrialization and Development: A Reconsideration*, Oxford, Clarendon Press.

Berry, A. and F. Stewart (1994), *Market Liberalization and Income Distribution: The Experience of the 1980s*, paper presented to the Annual Conference of the Development Studies Association, Lancaster University, September 1994.

Bhagwati, J (1988), 'Export-promoting Trade Strategy: Issues and Evidence', *World Bank Research Observer*, Vol. 3, No. 1.

Bourguignon, F. and C. Morrisson (1989), *External Trade and Income Distribution*, Paris, OECD.

Bradford, C. (1990), 'Policy Interventions and Markets: Development Strategy Typologies and Policy Options', in G. Gereffi and D. Wyman (eds.), *Manufacturing Miracles: Paths of Industrialization in Latin America and East Asia*, Princeton, Princeton University Press.

CEDLA (1993), Draft Study of Structural Adjustment and the Bolivian Industrial Sector, La Paz, Centro de Estudios para el Desarrollo Laboral y Agrario, mimeo.

Celasun, M. (1994), 'Trade and Industrialization in Turkey', in G. K. Helleiner (ed.), *Trade Policy and Industrialization in Turbulent Times*, London, Routledge.

Clarke, R. and C. Kirkpatrick (1991), 'Trade policy reform and economic performance in developing countries: assessing the empirical evidence', in R. Adhikiri, C. Kirkpatrick and J. Weiss (eds.) (1991), *Industrial and Trade Policy Reform in Developing Countries*, Manchester, Manchester University Press.

Cobas, E. and P. de Aurrecoechea (1988), *Posibilidades y Perspectivas de Industrialización de Bolivia*, La Paz, Informe Final 'Apoyo al Desarrollo Industrial', Proyecto BOL/87/006.

Condon, T. and J. de Melo (1991), 'Industrial Organization Implications of QR Trade Regimes: Evidence and Welfare Costs', *Empirical Economics*.

Corbo, V. and J. de Melo (1985) (eds.), *Scrambling for Survival: How Firms Adjusted to the Recent Reforms in Argentina, Chile and Uruguay*, World Bank Staff Working Paper, No. 764.

Corbo, V. and J. M. Sánchez (1985), 'Adjustments by Industrial Firms in Chile During 1974-82', in V. Corbo and J. de Melo (eds.), *Scrambling for Survival:*

How Firms Adjusted to the Recent Reforms in Argentina, Chile and Uruguay, World Bank Staff Working Paper, No. 764.

Devarajan, S. and D. Rodrik (1989), 'Trade Liberalization in Developing Countries: Do Imperfect Competition and Scale Economies Matter?', *American Economic Association Papers and Proceedings*, May.

Devlin, R. (1994), 'Privatization and Social Welfare in Latin America', in G. Bird and A. Helwege (eds.), *Latin America's Economic Future*, London, Academic Press.

Dollar, D. and K. Sokoloff, 'Patterns of Productivity Growth in South Korean Manufacturing Industries, 1963-1979', *Journal of Development Economics*, Vol. 30.

Dornbusch, R. (1992), 'The Case for Trade Liberalization in Developing Countries', *Journal of Economic Perspectives*, Vol. 6, No. 1.

Dunkerley, J. (1990), *Political Transition and Economic Stabilisation: Bolivia, 1982-1989*, University of London, Institute of Latin American Studies, Research Paper No. 22.

Econometría (1987), *Estudio Integral del Arancel de Importaciones: Implicaciones para la Estructura de Protección de la Industria Manufacturera Privada*, Informe para la Cámara Nacional de Industrias, La Paz.

Edwards, S. (1992), 'Política cambiaria en Bolivia: Avances recientes y Perspectivas', *Análisis Económico*, Vol. 5, June.

Edwards, S. (1993), 'Openness, Trade Liberalization, and Growth in Developing Countries', *Journal of Economic Literature*, Vol. XXXI.

Edwards, S. and S. Van Wijnbergen (1989), 'Disequilibrium and Structural Adjustment', in H. Chenery and T. N. Srinivasan (eds.), *Handbook of Development Economics, Volume II*, Oxford, Elsevier Science Publishers.

Escobar, J. (1990), *Márgenes de Beneficio y Estructura de Costos de la Industria Manufacturera*, La Paz, UDAPE, mimeo.

Espejo, J., R. Gómez and C. Machicado (1988), *Elementos para Una Estrategia Industrial en Bolivia*, La Paz, Ministerio de Industria, Comercio y Turismo/ GTZ.

Evans, D. (1990), 'Outward orientation: An assessment', in C. Milner (ed.), *Export Promotion Strategies: Theory and Evidence from Developing Countries*, London, Harvester/Wheatsheaf.

Evans, D. (1991), 'Visible and Invisible Hands in Trade Policy Reform', in C. Colclough and J. Manor (eds.), *States or Markets? Neo-liberalism and the Development Policy Debate*, Oxford, Clarendon Press.

Fanelli, S., R. Frenkel and G. Rozenwurzel (1992), 'Trade reform and growth resumption in Latin America', in J-M. Fontaine (ed.), *Foreign Trade Reforms and Development Strategy*, London, Routledge.

Ferrufino Goitia, R. (1992), 'El tipo de cambio real en el período post-estabilización en Bolivia', *Análisis Económico*, Vol. 5, June.

Fontaine, J.-M. (1992a), 'Introduction', in J-M. Fontaine (ed.), *Foreign Trade Reforms and Development Strategy*, London, Routledge.

Fontaine, J.-M. (1992b), 'Import Liberalization in Kenya', in J-M. Fontaine (ed.) *Foreign Trade Reforms and Development Strategy*, London, Routledge.

Fritsch, W. and G. Franco (1994), 'Import Compression, Productivity Slowdown and Manufactured Export Dynamism: Brazil 1975-90', in G. K. Helleiner (ed.), *Trade Policy and Industrialization in Turbulent Times*, London, Routledge.

Gray, P. and H. Singer (1988), 'Trade Policy and Growth of Developing Countries: Some New Data', *World Development*, Vol. 16, No. 3.

Greenaway, D. (1993), 'Liberalizing Foreign Trade Through Rose-tinted Glasses', *Economic Journal*, Vol. 103.

Greenaway, D. and C. Milner (1993), *Trade and Industrial Policy in Developing Countries*, London, Macmillan.

Griffith-Jones, S., A. Marr and A. Rodriguez (1994), 'Private Capital Returns to Latin America', in G. Bird and A. Helwege (eds.), *Latin America's Economic Future*, London, Academic Press.

Havrylyshyn, O. (1990), 'Trade Policy and Productivity Gains in Developing Countries: A Survey of the Literature', *World Bank Research Observer*, Vol. 5, No. 1.

Helleiner, G. K. (1990), 'Trade Strategy in Medium-term Adjustment', *World Development*, Vol.16, No. 6.

Helleiner, G. K. (1994), 'Introduction', in G. K. Helleiner (ed.), *Trade Policy and Industrialization in Turbulent Times*, London, Routledge.

Huarachi, G. (1992), 'Estimación del acervo de capital físico en la economía boliviana', *Análisis Económico*, Vol. 3, Abril.

IMF, (1992), *Issues and Developments in International Trade Policy*, Washington, IMF World Economic and Financial Surveys.

INE (1989), *Cuentas Nacionales Definitivas, 1978-1986*, La Paz, Instituto Nacional de Estadística, Area de Cuentas Nacionales.

INE (1992a), *Boletín de Cuentas Nacionales Número 8; Producto Interno Bruto Trimestral*, La Paz, Instituto Nacional de Estadística.

INE (1992b), *Nueva Base de las Cuentas Nacionales de Bolivia*, La Paz, Ministerio de Planeamiento y Coordinación/Instituto Nacional de Estadística.

Jenkins, R. (1990), *Export Incentives*, Report prepared for the Ministerio de Asuntos Campesinos y Agropecuarios/World Bank Agricultural Development Project, La Paz, mimeo.

Kirkpatrick, C. and J. Maharaj (1992), 'The effect of trade liberalization on industrial sector productivity performance in developing countries', in J-M. Fontaine (ed.), *Foreign Trade Reforms and Development Strategy*, London, Routledge.

Krueger, A. (1978), *Liberalization Attempts and Consequences*, New York, National Bureau of Economic Research.

Lee, N. (1991), 'Market Structure and Trade in Developing Countries', in G. K. Helleiner, *Trade Policy, Industrialization and Development: A Reconsideration*, Oxford, Clarendon Press.

Liang, N., 1992, 'Beyond Import Substitution and Export Promotion: A New Typology of Trade Strategies', *Journal of Development Studies*, Vol. 28, No.3.

Meller, P. (1992), *Latin American Adjustment and Economic Reforms: Issues and Recent Experience*, UNCTAD Discussion Paper No. 53.

Melo, J. de and S. Urata (1986), 'The Influence of Increased Foreign Competition on Industrial Concentration and Profitability', *International Journal of Industrial Organization*, Vol. 4.

Mezzera, J. and J. de Melo (1985), 'Adjustment by Industrial Firms in Uruguay During 1974-82', in V. Corbo and J. de Melo (eds.), *Scrambling for Survival: How Firms Adjusted to the Recent Reforms in Argentina, Chile and Uruguay*, World Bank Staff Working Paper, No. 764.

Michaely, M., D. Papageorgiou and A. Choksi (eds.) (1991), *Liberalizing Foreign Trade: Volume 7 Lessons of Experience in the Developing World*, Oxford, Blackwell.

Michalopolous, C. (1987), 'World Bank Programmes for Adjustment and Growth', in V. Corbo et al (eds.), *Growth Oriented Adjustment Programmes*, Washington, IMF and World Bank.

Milner, C. (1990), 'The role of import liberalisation in export promotion', in C. Milner (ed.), Export Promotion Strategies: Theory and Evidence from Developing Countries, London, Harvester/Wheatsheaf.

Mireau-Klein, B., J. Page and M. Dutz (1992), *Bolivia's Supply Response to Adjustment, 1985-90*, mimeo.

Ministerio de Planeamiento y Coordinación (1988), *Estrategia de Desarrollo, 1989-2000*, La Paz.

Montaño, G. and C. Villegas (1993), *Industria Boliviana*, La Paz, CEDLA, Programa de Ajuste Estructural 4.

Morales, J. A. (1987), *Inflation Stabilization in Bolivia*, Instituto de Investigaciones Socioeconómicas, Universidad Católica Boliviana, Documento de Trabajo.

Morales, J. A. (1988a), *The End of the Bolivian Hyperinflation*, Instituto de Investigaciones Socioeconómicas, Universidad Católica Boliviana, Documento de Trabajo No. 03/88.

Morales, J. A. (1988b), *Bolivian Trade and Development, 1952-1987*, Instituto de Investigaciones Socioeconómicas, Universidad Católica Boliviana, Documento de Trabajo No. 02/88.

Morrison, T. (1975), 'Manufactured Exports and Protection in Developing Countries: A Cross-Country Analysis', *Economic Development and Cultural Change*.

Muller & Asociados (1992), *Estadísticas Socio-económicas, 1992*, La Paz, Muller & Asociados.

NACLA (1991), 'Bolivia: The Poverty of Progress', *Report on the Americas*, Vol. XXV, No. 1.

Nishimizu, M. and S. Robinson, 'Trade Policies and Productivity Change in Semi-industrialized Countries', *Journal of Development Economics*, Vol. 16.

Nogales, J. (1989), *Bolivia: La Nueva Política Económica y Las Elecciones de 1989*, La Paz, Editorial Los Amigos del Libro.

Pack, H. (1988), 'Industrialization and Trade', in H. Chenery and T. N. Srinivasan, *Handbook of Development Economics, Vol. I*, Elsvier Science Publishers.

Petri, H. and J. de Melo (1985), 'Adjustment by Industrial Firms in Argentina during 1976-81', in V. Corbo and J. de Melo (eds.), *Scrambling for Survival: How Firms Adjusted to the Recent Reforms in Argentina, Chile and Uruguay*, World Bank Staff Working Paper, No. 764.

Pinell Siles, A. (1993), *Comportamiento y Perspectivas de las Exportaciones No Tradicionales Bolivianas*, La Paz, Cámara Nacional de Exportadores de Bolivia.

PREALC (1989), *La Industria Liviana de Bolivia Frente a la Nueva Política Económica*, Santiago, Programa Regional de Empleo para América Latina y el Caribe.

Rodrik, D. (1988), 'Imperfect Competition, Scale Economies, and Trade Policy in Developing Countries', in R. Baldwin (ed.), *Trade Policy Issues and Empirical Analysis*, Chicago, University of Chicago Press.

Rodrik, D. (1991), 'Closing the Productivity Gap: Does Trade Liberalization Really Help?' in G. K. Helleiner, *Trade Policy, Industrialization and Development: A Reconsideration*, Oxford, Clarendon Press.

Rodrik, D. (1992), 'The Limits of Trade Policy Reform in Developing Countries', *Journal of Economic Perspectives*, Vol. 6, No. 1.

Schmitz, H. (1984), 'Industrialization Strategies in Less Developed Countries: Some Lessons of Historical Experience', *Journal of Development Studies*, Vol. 21.

Shafaeddin, S.M. (1994), *The Impact of Trade Liberalization on Export and GDP Growth in Least Developed Countries*, UNCTAD Discussion Paper, No. 85.

Shaikh, A. (1979), 'The laws of international exchange', in E. Nell (ed.), *Growth, Profits and Property: Essays in the Revival of Political Economy*, Oxford University Press.

Singer, H. (1988), 'On the Blessings of "Outward Orientation": A Necessary Correction', *Journal of Development Studies*, Jan.

Taylor, L. (1991), 'Economic Openness: Problems to the Century's End', in T. Banuri, *Economic Liberalization: No Panacea*, Oxford, Clarendon Press.

Thomas, V., J. Nash and Associates (1991), *Best Practices in Trade Policy Reform*, Oxford, Oxford University Press.

Thomas, V. (1991), 'Trade Policy Reform', in V. Thomas and others (1991), *Restructuring Economies in Distress: Policy Reform and the World Bank*, Oxford, Oxford University Press.

Tokman, V. (1984), 'Global Monetarism and the Destruction of Industry', *CEPAL Review*, No. 23.

Triana, R. and J. España (1990), *Diagnóstico de la Industria Textil Boliviana*, La Paz, Junta del Acuerdo de Cartagena, Programa de Cooperación Andina a Bolivia.

Tybout, J. (1991), 'Industrial Performance: Some Stylized Facts', in V. Thomas and others (1991), *Restructuring Economies in Distress: Policy Reform and the World Bank*, Oxford, Oxford University Press.

Tybout, J. (1992), 'Linking Trade and Productivity: New Research Directions', *World Bank Economic Review*, Vol. 6, No. 2.

UDAPE (1990a), *El Desarrollo Industrial en Bolivia*, La Paz, Unidad de Políticas Económicas.

UDAPE (1990b), *La Política de Exportaciones en Bolivia*, La Paz, Unidad de Políticas Económicas.

UDAPE (1992a), *Sector Exportador No Tradicional: Principales Problemas y Propuestas de Política (Versión Preliminar)*, La Paz, Unidad de Políticas Económicas.

UDAPE (1992b), *Estadísticas Económicas de Bolivia, No.3*, La Paz, Unidad de Analisis de Políticas Económicas.

UNCTAD (1989), *Trade and Development Report, 1989*, Geneva, UNCTAD.

Violand, M. (1990), 'Análisis de la Ley de Inversiones', in R. Eróstegui, *La Industria: Problemas y Perspectivas*, La Paz, Instituto Latinoamericano de Investigaciones Sociales.

Weiss, J. (1984), 'Manufacturing as an Engine of Growth - Revisited', *Industry and Development*, No. 13.

Weiss, J. (1992), 'Trade Policy Reform and Performance in Manufacturing: Mexico 1975-88', *Journal of Development Studies*, Vol. 29, No. 1.

World Bank (1987), *World Development Report, 1987*, Oxford, Oxford University Press.

World Bank (1991), *Bolivia: From Stabilization to Sustained Growth*, Washington, World Bank.

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