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Institutions, Growth and Poverty in Bolivia
Obstacles to Broad-based Growth[A]

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Abstract

Bolivian economic growth, investment and productivity levels have lagged behind Latin American averages for fifty years. Explanations of poor performance have included geographic constraints, institutional barriers, political instability and political economy factors, among others. In a low-growth, low-investment and low-productivity economy, however, a group of non-traditional exports experienced outstanding growth between 1980 and 2005. In recent years, 160 of a total 487 Bolivian export products at the 4-digit SITC category, gained world market share, and 23 were consistent 'champions'. Why do some export products, which share the same obstacles to growth as hundreds of other products – high transportation costs, high institutional barriers, low human capital, and so on – perform well? In this paper we describe 'pockets of growth' in the Bolivian economy, and analyse three cases of outstanding performance in the non-traditional export sector. We find that quality-sensitive, price-sensitive and commodity exports have each a different set of 'binding constraints' that involve idiosyncratic ways of overcoming barriers to growth. The paper concludes with a brief discussion of policy and analytical implications of looking at 'pockets of growth' in a low-growth, low-investment and low-productivity economy.

Contents

1. Introduction

Bolivian economic growth, investment and productivity levels have lagged behind Latin American averages for the last fifty years (see CEPAL, 2004). Explanations of poor performance have included geographic constraints (Sachs, Gallup and Mellinger, 1998), institutional barriers (Prats, 2003; Word Economic Forum, 2006), political instability (World Bank, 2006) and political economy factors (Gray Molina and Chavez, 2005; Lora, 2001), among others. A recent paper by Hausmann, Rodrik and Velasco (2004) suggests that the economic growth question is best answered by asking which 'binding constraints' hinder low-growth, low-investment and low-productivity economies. Among constraints considered by Hausmann et al. are inadequate returns to investment, inadequate private appropriability and high-cost financing. The intuition behind the growth diagnostics approach is that a one-size-fits-all method of analysis tends to obscure the critical variables that affect economic growth beyond a listing of 'usual suspects'.

This paper uses the growth diagnostics framework to analyse the determinants of growth of a particular sector of the Bolivian economy over the past 25 years. In a national context of low-growth, low-investment and low-productivity, selected non-traditional exports showed outstanding growth and overcame many of the structural barriers to growth common to the whole period. The key question is whether the emergence of such successful export products and episodes of growth can be attributed to institutional, policy or political economy factors that are replicable, or whether they can be attributed to idiosyncratic, one-shot or exogenous factors that are unlikely to recur. Why do some export products experience high-growth, even though they share the same structural obstacles to growth – high transportation costs, high institutional barriers, low human capital, and so on – as hundreds or thousands of other export products?

The literature on export diversification has pointed to at least two ways of tackling this question. The first is time-specific. Hausmann, Pritchett and Rodrik (2005) analyse rapid accelerations in growth for 80 episodes since the 1950s and find that external shocks tend to produce accelerations that fizzle out, while economic reform tends to produce accelerations that are sustained over more than 8 years of growth. By focusing on the inter-temporal aspects of export-led growth, Hausmann et al. isolate factors that are specific to temporal commodity booms and favorable international prices from more structural determinants of growth. The second type of explanation is commodity-specific. Hausmann and Rodrik (2003) analyse the emergence of new export products in developing countries and develop an analytical framework of 'self-discovery' that places greater weight on learning and co-ordination market failures involved in product innovation in developing economies. Lederman and Klinger (2004) analyse the determinants of product innovation and find that 'discovery' is not found to be a product of structural transformation based on changing factor endowments across income levels. Rather, they argue that market failures arising from imitation and free-riding may be inhibiting the emergence of new export products in developing countries. By focusing on commodity-specific aspects of export-led growth, these papers isolate those factors that are able to overcome structural barriers to growth faced by other products and commodities.

Following Hausmann and Rodrik (2003), this paper will focus on commodity-specific factors that explain how 'pockets of growth' of non-traditional exports emerge in a low-growth economy. We organise our evidence in four parts. The first part reviews some of the stylised facts of growth, investment and productivity in the Bolivian economy and identifies a subset of export sectors that showed both high episodes of growth and revealed comparative advantages, as proxied by Balassa indices over five-year periods since 1980. The second part of the paper delves deeper into three non-traditional exports that succeeded in overcoming traditional barriers to growth. This part uses qualitative case studies form the soybean, jewellery and timber sectors to illustrate microeconomic constraints to growth. The third part concludes with some of the analytical and policy implications of a targeted 'growth diagnostics' approach.

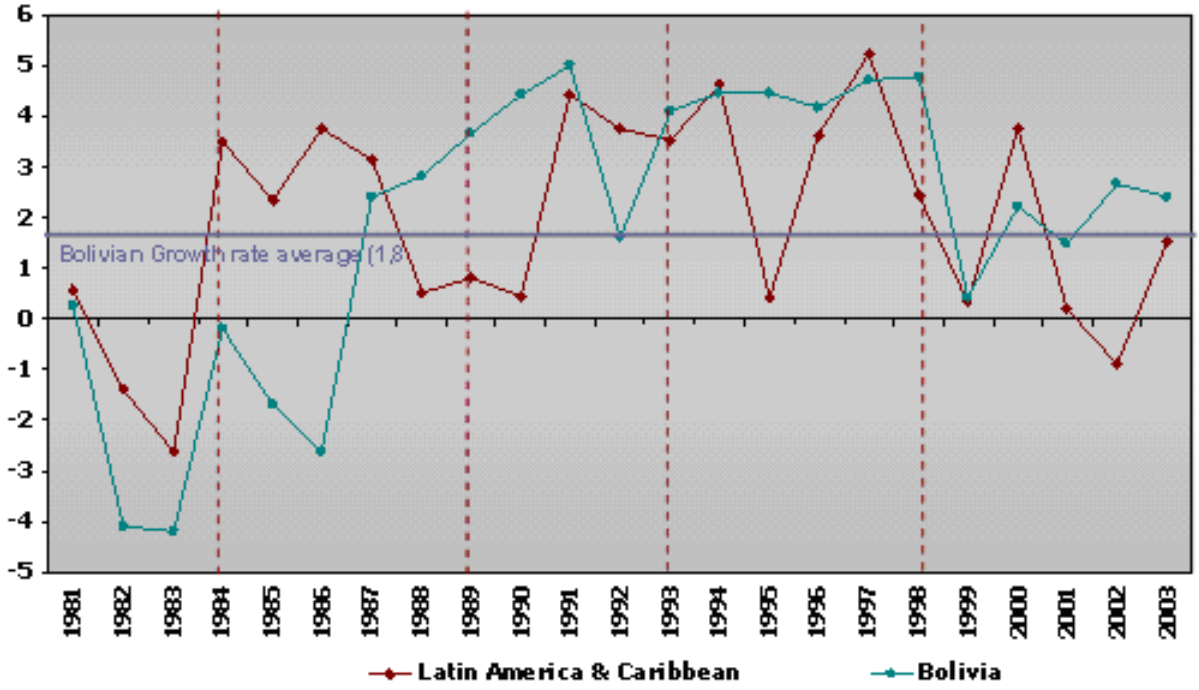
2. Stylised Facts on Growth, Investment and Productivity

2.1 The Overall Picture: Low Growth, Low Investment and Low Productivity

The starting point for our analysis of export diversification is the behavior of economic growth over time. Chart 1 describes Bolivian and Latin American economic growth rates between 1980 and 2005. There are three details of interest in this chart. First, Bolivian growth rates lag behind Latin America throughout the period. With economic growth rates averaging 1.8% (1980–2003), Bolivian growth is a half percentage point behind the region. Second, the per capita economic growth rate during this period is near zero. With population growth at over 2% since the 1950s, this means economic growth is consistently lagging behind population growth. Third, this period can be described by two recessions and two periods of economic growth. This generally follows the Latin American trend, but is sharply affected by the 1985 hyperinflation which ushered in a long lasting period of macroeconomic adjustment and reform. The political economy of this process is described elsewhere, but weighs considerably on the current demographic and labour composition of the Bolivian economy.

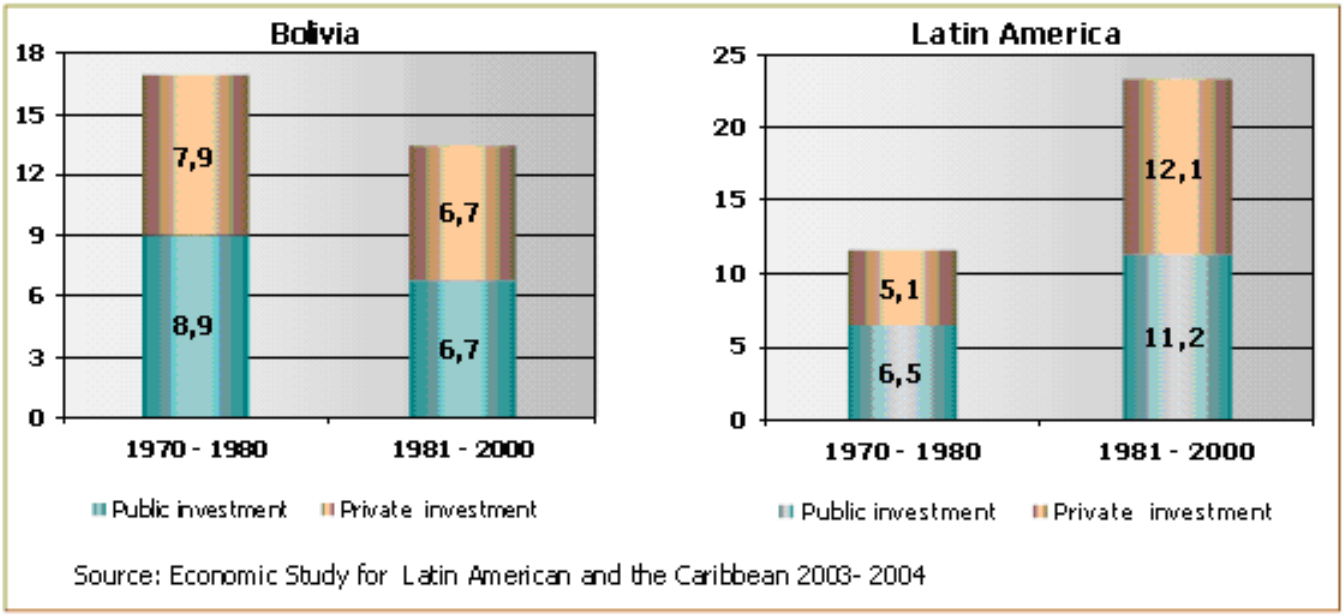
The second stylised fact relates to public and private investment rates. Chart 2 describes investment patterns for Bolivia and Latin countries from 1970 to 2000. Two patterns are of interest. First, Bolivian investment rates again lag with respect to the region. With a thirty year regional average of 20%, Bolivian

Chart 1: Bolivia and Latin America growth rates, 1980 – 2003, (%)



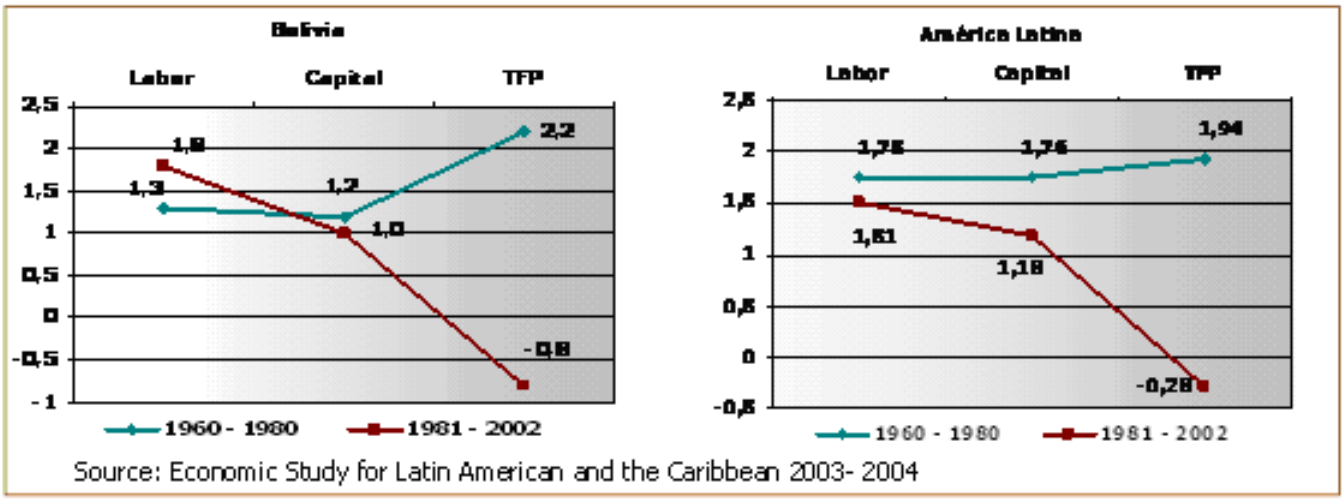
Source: World Banck data base

Chart 2: Investment patterns for Bolivia and Latin America, 1970 – 2000 (%)



Source: Economic Study for Latin American and the Caribbean 2003- 2004

Chart 3: Productivity rates of labor, capital and total factor productivity, 1960-2002



Source: Economic Study for Latin American and the Caribbean 2003- 2004

Charts 1,2 and 3: More Stylized Facts: 'Pockets of Growth'

investment only averages 16%. A recent study by the World Bank (2006) estimates that Bolivia would need a future investment rate of 18-22% and productivity increases of 1.5–2% to sustain a 4.5% growth rate in the following years. Second, Bolivian public investment rates collapsed in the mid 1980s, but recovered in the mid 1990s. Perhaps the most significant peak, however, is observed for private investment in the late 1990s, mostly from foreign direct investment linked to the capitalisation of the hydrocarbons industry. The important question behind low investment rates is whether the Bolivian economy has opportunities for investment, or whether existing opportunities can be privately appropriated. This is a question we will tackle in the cases studies on soybean, timber and jewellery.

The third stylised fact relates to productivity rates. Chart 3 describes productivity rates of labour, capital and total factor productivity between 1960 and 2002. Again, two aspects of this trend are relevant to our analysis. First, labour and capital contributions to economic growth are uneven over inward- and outward-looking periods of Bolivian economic development. For the period 1960 to 1980 (inward-looking, 4.7% average growth), labour and capital contributions are about the same (1.3 and 1.2 average percentage points of growth, respectively. Total factor productivity (TFP) accounts for the largest share of growth in this period (2.2 percentage points). For the period covering 1980 to 2002 (outward looking, 2% average growth), the labour contribution to growth increases to 1.8, while both the capital and total factor productivity (TFP) drop to 1 and 0.8 percentage points respectively. How to explain these differences? As suggested by Klinger and Lederman (2004), total factor productivity accounts for most of economic growth during the inward-looking period, because the Bolivian economy is moving inside its production possibility frontier. An increase in labour productivity in the outward-oriented period might be then explained by the emergence of labour intensive exports in the 1980s and 1990s. The second aspect worth noting is that, again, Bolivia lags behind Latin America in increasing labour and total factor productivity in the outward-oriented period. These are instrumental to sustained improvements in trade competitiveness and sustained innovation and product discovery, as discussed by Hausmann and Rodrik (2003).

The Bolivian economy is a low-growth, low-investment and low-productivity economy located in the heart of a relatively low-growth region. Despite the overall gloomy picture, there are pockets of growth that are the exception to the rule. A few investment opportunities linked to natural resources paid off well in the 1980s and late 1990s and averaged growth rates even higher than the Latin American averages. Some gained market share in a context of expanding markets, thus gaining regional and global competitiveness in market niches. Which commodities are these? How did they fare on a regional and global level? Did they fizzle out, or do they constitute a 'pocket of export success' within a rather dismal national economy? This section focuses on the stylised facts of a subset of the economy, linked to non-traditional exports. We present information on overall exports from 1980 to 2005, and track episodes of non-traditional commodity booms in Bolivia.

To begin a look at the overall export picture between 1980s and 2005, where three characteristics stand out: first, the trend for Bolivian exports in this period resembles a 'U' shaped curve, as exports collapsed in the mid-1980s and took approximately a decade to recover to pre-crisis levels. In recent years, particularly since 2003, exports have increased significantly, reaching over $US 3.5 billion in 2006, more than triple the level of exports reached by the previous historic peak of $US 1 billion in 1980. Two commodity booms can be identified in this period: soybean boom in the second half of the 1990s and a gas and timber/jewellery/leather goods since 2003. Second, the composition of exports has changed significantly over this period. Over 62% of total exports were mineral goods in 1980, compared to 19% in 2005. During this period, natural gas and a host of non-traditional exports increased their share of total Bolivian exports significantly. In 2005, natural gas and other hydrocarbons accounted for close 35% of total exports, and non-traditional exports accounted for close to 30% of the total. Third, the two commodity booms and composition shifts can be traced back to two important episodes of increased market access in export markets: the soybean boom of the 1980s and 1990s can be linked to zero tariff policies since 1986 in the Andean Community (CAN) and the boom in non-traditional exports is linked to zero-tariff access in the Andean Trade and Drug Enforcement Act (ATPDEA) since 2002.

Secondly, the two commodity booms described above can be unpacked for specific commodities over the 1980–2005 period. The story that emerges illustrates boom and bust cycles for a host of non-traditional exports. The 1980–1984 cycle shows the importance of mineral products in Bolivia's export portfolio. Mining activities, particularly linked to tin was Bolivia's dominant export commodity since early in the XXth century. The weight of mineral exports in the 1970s and 1980s followed international commodity price cycles, but collapsed abruptly in late 1985, when tin prices dropped in the London Stock Exchange. The 1985–1989 period is characterised by a 'post-tin' diversification process, with the expansion of soybean, timber and sugar exports. Soybean exports double from $US 18 million in 1986 to $US 40 million in 1990. Timber exports also double from 23 million to $US 49 million in 1990. Sugar exports expand six-fold from $US 5 million in 1986 to $US 30 million in 1990.

The 1990–1994 period is marked by the rapid expansion of soybean exports as the most dynamic non-traditional export in the 'post-tin' era. Soybean exports increase from $US 67 million in 1991 to $US 142 million in 1994. Export growth is undergirded by an aggressive expansion of the production frontier into northern and eastern Santa Cruz plots. Improvements in productivity and the research and development of new technologies are very few in this period. The 1995–1999 period is characterised by high overall

economic growth and a further expansion of soybean exports. New investments made by multinational partners associated with Bolivian investors, allows a second expansion and a greater degree of vertical integration within the industry. The most recent period, from 2000 to 2005, witnesses both a contraction of the economy until 2002, and an export boom of new non-traditional commodities: jewellery, leather goods, wood manufactures and textile goods. This second wave of non-traditional exports will be analysed more closely through qualitative case studies.

2.2 Growth Diagnostics for 'Pockets of Growth'

Hausmann, Rodrik and Velasco (2004) describe a method to identify binding constraints to growth. The starting point in their analysis is to describe whether (i) returns to investment are low or (ii) whether returns to investment are high but are hindered by low private appropriability or high financing costs. Countries with low investment rates, low savings rates and low overnight interest rates are good candidates for being 'low return' countries. This is the case for El Salvador, as described in Hausmann et al, for the 1980s and 1990s. The opposite can be said for Brazil, a 'high return' economy, which despite low investment and low savings rates, uses expensive domestic financial resources to the hilt and is borrowing from international financial markets to expand investments. In the Bolivian case – on the surface similar to El Salvador, a 'low return' economy – we propose to zoom in on the 'pockets of growth' in the economy to understand how a subset of the export economy is able to overcome some of the barriers to growth identified in the literature.

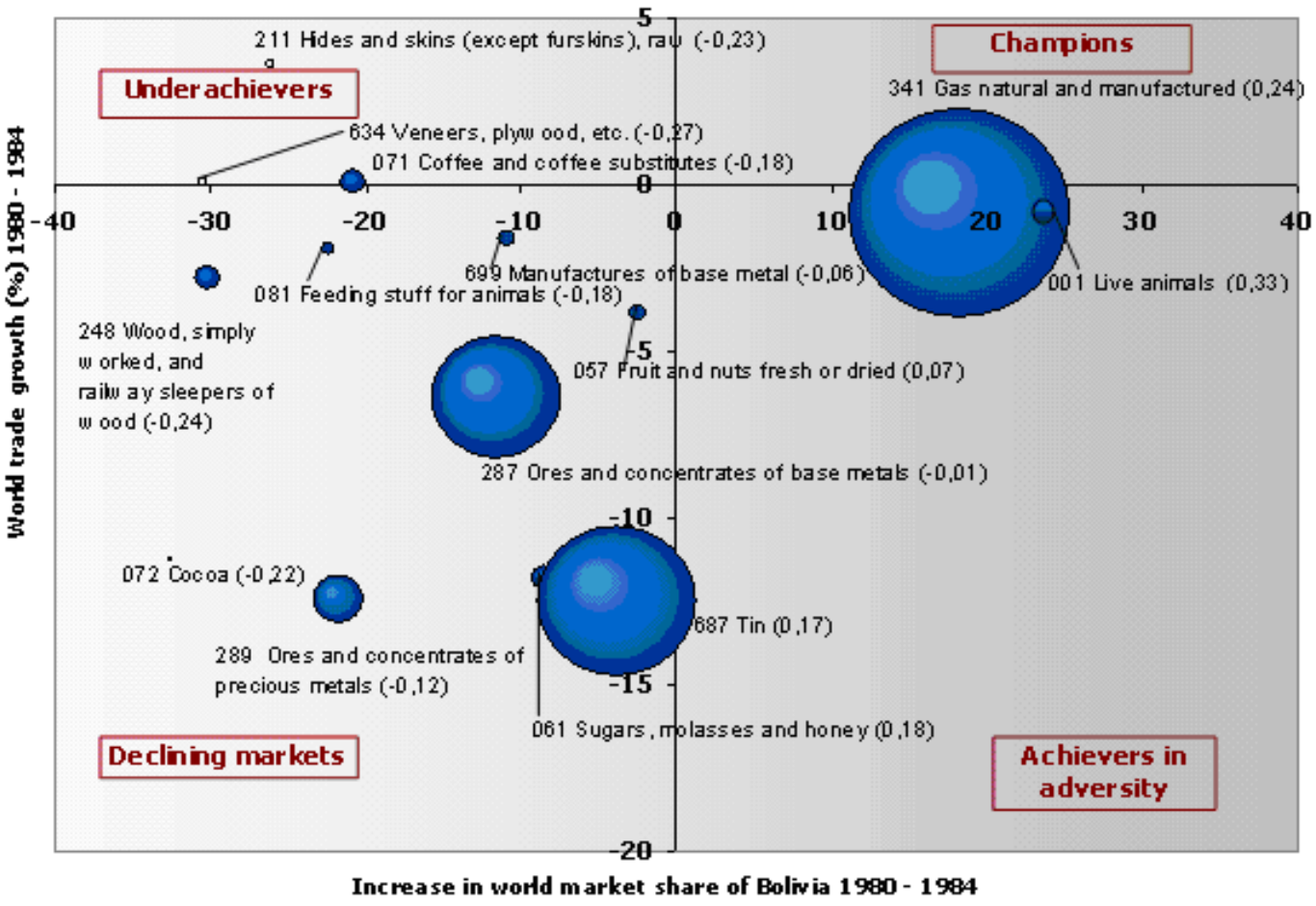
The export sector is a good place to look for 'binding constraints' for a small, open economy dependent on primary natural resources. In the Bolivian case, this means three at least taking three steps. First, identify the small sub-sector of the export economy that is 'high-return'; second, isolate nationwide growth constraints; and third, focus on those product-specific constraints for a commodity or group of commodities included at the 4-digit SITC category level. We do this for four periods between 1980 and 2005, by mapping out changes in top Bolivian export shares with respect to changes in the world market; the results are supplemented with Balassa revealed comparative advantage indices for key commodities: charts 4, 5, 6, 7 and 8 illustrate changes in revealed comparative advantage for the periods 1980–85, 1986–90, 1991–95, 1996–2000 and 2001–2004.

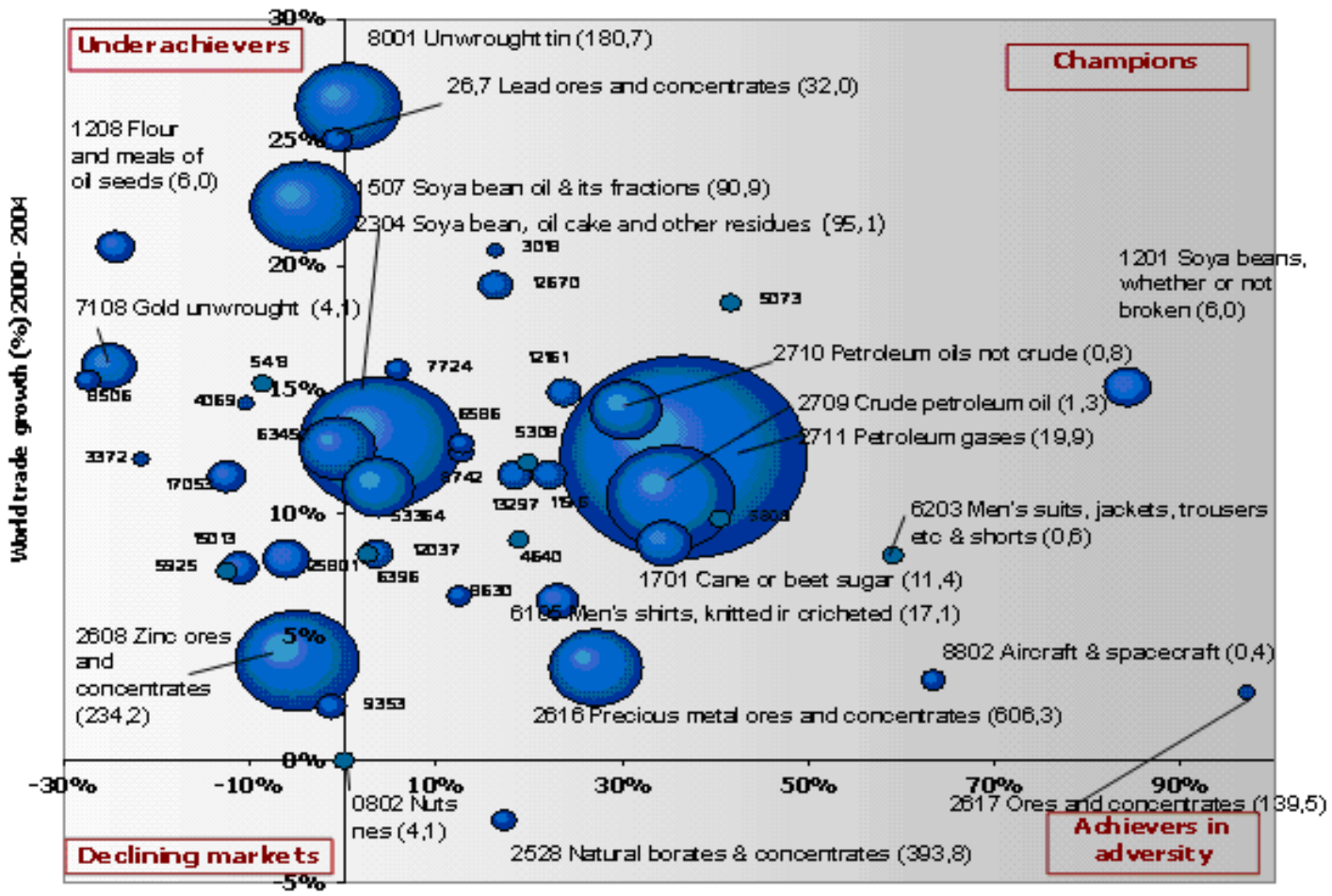
The quadrants of interest are the 'champion' (Bolivian market growth faster that world market growth) and 'underachiever' quadrants (Bolivian market growth lagging behind world market growth). These are products that show some comparative advantage in terms of expanding market share in world exports. The point Balassa index estimate corroborates this (for estimates > than 1). The findings, at a 4-digit level are illuminating: (i) for the period running through 2000–2004, out of a total of 487 products at 4 digits, Bolivia is in the 'champion' quadrant for 160 products. This means approximately 67% of the total, do not exhibit revealed comparative advantage. This portion of the economy, plus the many commodities that are never even traded, is the 'low-growth' side of the Bolivian economy. It is hampered by many of the geographic, transportation cost, institutional and political economy barriers frequently reviewed in the growth literature to explain the performance of 'low growth' economies. However, the 23 products that show revealed comparative advantages comprise the 'growth pockets' that overcome many of the usual barriers to economic growth described above.

Two questions are worth asking about this characterisation. First, which commodities survive short-lived booms and which are able to survive commodity booms to become a 'competitive core' for the Bolivian economy? The answer to the first question can be proxied by a composite chart that shows commodity 'survivors' between 1986 and 2004. The 'core group' is unfortunately not very large, nor highly diversified. Hydrocarbons and mineral products lead the group, with soybeans coming in a distant third throughout the period. Bolivia is, on this account, stuck in a 'narrow-based' economic development pattern, based on primary natural resource exports and highly vulnerable to changes in exogenous commodity prices. Gray Molina (2006) and Gray Molina and Aranibar (2006) have quantified some of the costs of such an economy in terms of growth, employment and poverty reduction. UNDP (2005) elabourates on a number of additional effects of a 'narrow-based economy', including high levels of inequality and low levels of domestic market linkages (Wanderley, 2004 and 2005), which make poverty reduction little responsive to increased economic growth.

Second, how to explain the relative success of the 'core group' of products, in a context of high structural barriers to economic growth? We tackle this question by delving deeper into the cost structure and microeconomic and managerial behavior of firms operating in 'core group' products. Three qualitative case studies – for soybeans, jewellery and manufactured wood products – illustrate some of the institutional and organisational 'solutions' that have allowed successful non-traditional exports to remain 'successful'. Hurtado (2006) identifies a number of non-traditional products that stand out after the most recent period of export expansion since 2003. The following section uses some of Hurtado´s cases to sketch out an analytical narrative on growth, high risk business environments and adaptation strategies to cope with risk. The use of case studies also allows a closer look at firms within successful sectors. We find as much heterogeneity in firm-level responses as between successful and non-successful sectors of the export economy.

Charts 4 and 5: Export profile of Bolivia in 1980–1984, 2000–2004





3. Overcoming Adversity: Explaining Bolivia's 'Pockets of Growth'

3.1 Jewellery Export Industry

Jewellery is one of the most dynamic export industries in the department of La Paz, where in 2004, it represented 33,36% of the total export. The total jewellery export was above 63.2 million American dollars, corresponding 10.2 ton of jewellery exported. The portfolio of jewellery export includes rings, earrings, lockets, bracelets, chains etc.; jewellery with precious and semi-precious gems is the newest product for export.

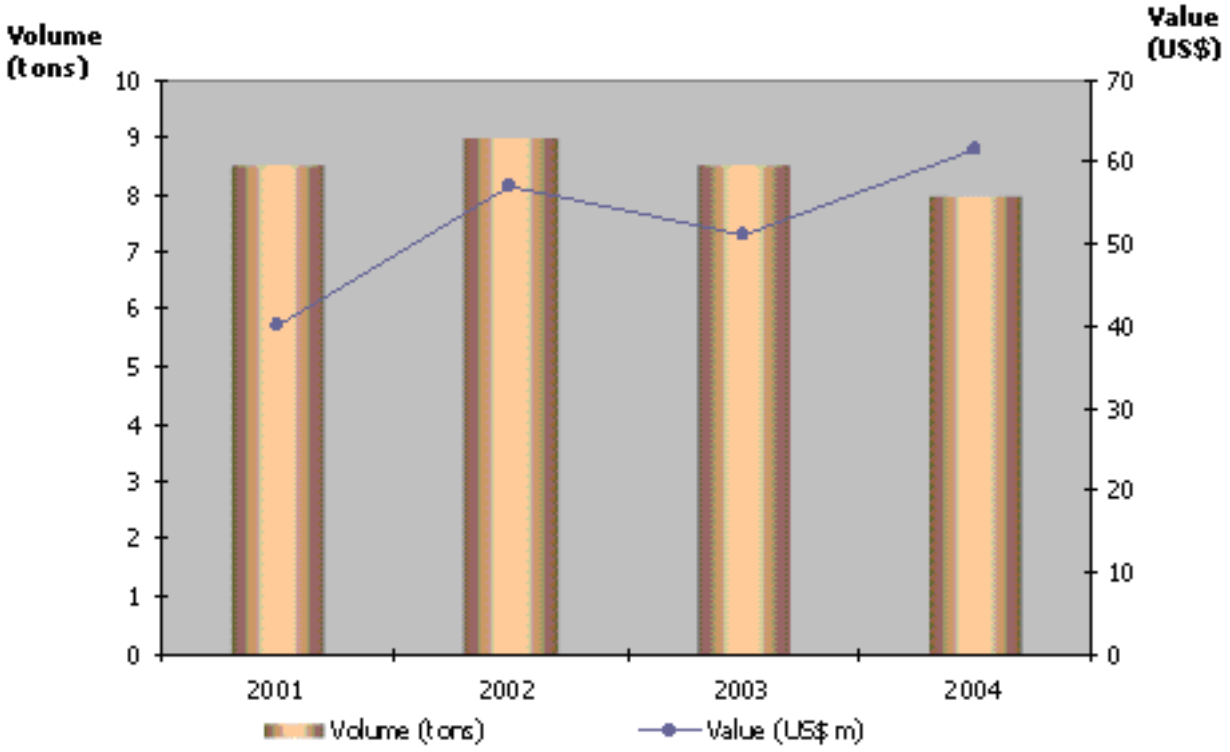


Chart 6: Gold Jewellery export in La Paz, 2001–2004
Source: CAMEX 2005

Between 2003 and 2004, the export of gold jewellery increased 1,711% and the export of silver jewellery increased 11,021%; the United States constitutes the most important market for Bolivian jewellery.

The analysis of the two case studies in the jewellery industry – *Exportadores Bolivianos* and *Rafaella Pitti* – shows different firm-level strategies to cope with risks within the same business environment. Exportadores Bolivianos S.R.L. is the most important export firm in the jewellery industry with sales above 39.5 million American dollars in 2004, while Rafaela Pitti is conquering international market niches in a slower but sustained way.

3.1.1 Exportadores Bolivianos

The history of Exportadores Bolivianos (EB) began when an American entrepreneur in the jewellery industry met Eduardo Bracamonte, a Bolivian professional working at that time to a private foundation oriented to promoting exports of Bolivian products. It was the beginning of the 1990 and Bolivia had already achieved macroeconomic stability and signed the international agreement ATPDEA. These achievements helped fuel interest in Bolivia for new investments; a new partnership was about to begin.

In 1994 Exportadores Bolivianos was born with an investment of about 1 million Bolivianos (about US $200,000). The American partner was responsible for marketing, including setting production volume and defining product design and the Bolivian partner was in charge of management and production. EB is oriented to the industrial production of three main products: string chains, castings (rings, bracelets and earrings) and gems (precious and non-precious). It is the only fabric in South America that mounts precious gem jewellery. In 1995 EB was already exporting to the US with a first half tonne volume shipment worth a US $1 million trade.

In 2001, Exportadores Bolivianos was the first Bolivian firm to issue bonds and in 2005 it had the highest turnover in the country, as recognised by the business magazine *América Economía*. Now EB hires 680 workers and generates 2,000 indirect jobs. It exports US $40 million a year and has assets of approximately US $6 million. EB has not undergone any financial crisis and obtains financing outside Bolivia.

The analysis of the cost structure opens up a promising window to explore different business strategies to cope with risks in a common environment. This is a first step toward a better comprehension of the specific effects of public policies on non-traditional exports.

Exportadores Bolivianos is engaged in the large-scale production of standard jewellery goods, and depends on two main comparative advantages - the continuous supply of raw material and low-wage rates in Bolivia (in comparison to North America). The main component of EB's cost structure is raw materials. Gold and gems represent 70% of the total cost of EB. Gold is entirely bought in local markets while gems are imported from abroad.

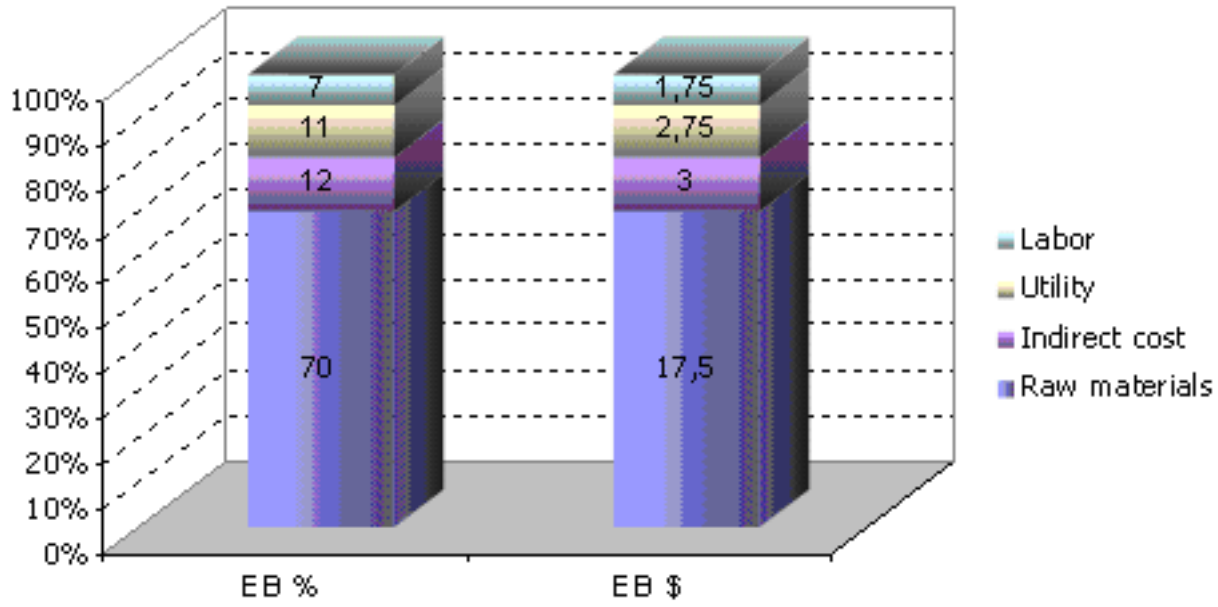


Chart 7: Exportadores Bolivianos (EB) cost structure

In relation to raw materials, EB has developed a direct relationship with suppliers of gold; the large amount of gold demanded by EB requires reliability on the part of the suppliers. This is not easy secured. EB managers must deal with two main difficulties related to the supply of gold: First, they must trade with scattered miners (*barranquilleros y rescatistas*) who are not formally organised and who do not operate under a strict entrepreneurial logic; and second, low quality road services limit the constant supply of gold to city centers. Transportation and other transaction cost associated to these disadvantages diminish the raw material cost advantages.

Managers must also deal with difficulties in importing gems (precious and semi-precious) and other inputs. There are no Bolivian suppliers of specialty products for the jewellery industry such as hooks and threads, so producers in general must import inputs and technology from abroad. An inefficient customs service and a shrinking air transportation industry in Bolivia forces EB managers to find ways to handle these problems, augmenting transaction costs. For example, the firm buys greater amount of inputs such as hooks and threads than it would need in the short run in order to guarantee the flow of foreign inputs. This involves additional financial costs since the firm directs money that could otherwise have higher returns. These are some of the sources of EB's indirect costs (12%).

The cost of infrastructure including basic services such as electricity, natural gas, water is cheap in comparison to the regional costs. However air transportation prices in Bolivia is one of the highest in the region. The transportation cost disadvantage and the low frequency of flights connecting Bolivia to other countries augment the costs. Another source of indirect costs is related to the inefficient legal and regulatory systems.

The other important component of the cost structure is labour. It represents 7% of the total cost. The fabrication of standard jewellery accounts for 600 salaried workers and more than 2000 non-salaried workers directly related to the production process. Low wages are the one of the most important comparative advantage of EB. The high rotation of workers comes with the need of constant training of new employees in the factory. The firm assumes the costs of training new workers in the absence of adequate educational services. However it seems that the continuous training is a better solution than policies oriented to keep workers for longer time. In contrast to workers, the firm counts on high quality management human resources formed in the country.

The company leaves a profit margin of 11% per good exported. Since 95% of the jewellery is exported to the USA, the most important threat for the firm today is the loss of the APTDEA and SGP agreements. It is clear to the owners and managers of EB that their capacity to maintain themselves competitively in the price-sensitive, market niches depends on cheap labour and abundant and low-cost raw material. In the

face of the possible loss of a Free Trade Agreement with the USA, EB is now searching for new markets, mainly in Europe. EB managers are also considering a shift in their business strategy towards increasingly quality-sensitive, new market niches, but such a radical change is not easy to achieve in firms such as EB. Among other organisational and production changes, it will require increased control over the design of products and increased monitoring of international client demands.

3.1.2 Rafaella Pitti

The history of Rafaella Pitti (RP) is very different from Exportadores Bolivianos. This firm started as a family initiative with three partners in 1984; two years later it became a profit-generating enterprise. At the beginning, Rafaela Pitti was orientated to the production and commercialisation of exclusive gold and silver jewellery to national markets. From 1989, RP opened new shops in La Paz and Cochabamba and in 1993 the partners bought a new piece of property and began to build a new factory with a wide area for future expansions.

In 1997, with the support of the Deutch International Co-operation, the partners gained access to information about exportation procedures and how to conquer niches in foreign markets. In 1999, RP exhibited its products in the most important jewellery fair in Germany, where it secured its first international deals. To date, RP exports to Chile, United States, Austria and Germany, among others, with a main export product of exclusive silver and gem jewellery. In 2003, RP underwent organisational changes following the ISO 9000 programme. In 2004, RP opened offices in Santa Cruz, Santiago de Chile and established liaison offices in Washington, Paraguay, Colombia and Qatar. Today, RP competes with jewellery makers from Mexico, China and Taiwan.

Rafaela Pitti began as a limited-liability company with a start-up capital of US $600. It has never undergone a financial crisis, though low cash-flow has been a problem on some occasions. Partners explain that there is no reason to become a full-liability firm since there is no active stock market in Bolivia to capitalise shares. Today the firm’s assets are evaluated at US $500,000 even though the firm adopted the distribution of dividends since the first year.

Rafaela Pitti competes on the basis of differentiated goods produced for niche markets of demanding national and international clients, controlling product-design and production-volume decisions through constant contact with final consumers. Rafaela Pitti does not rely on a wholesale intermediary or commerce partner as Exportadores Bolivianos does; the integration of trading relations with final consumers allows RP to constantly monitor changes in demand and to personalise to customers’ specifications.

Raw materials represent about 40% of total costs, the most important to production being silver which is bought entirely in local markets; gems (precious and semi-precious) are bought from foreign markets. Even though RP does not feel the pressure to maintain a high volume of raw materials, it incurs in high transaction costs associated to the acquisition of silver and gems.

The main problems in the supply of local raw material are the illegalities associated with the suppliers of silver and gold; and low quality road systems. In relation to foreign inputs, the main problems are attributed to an inefficient customs system; the high price of air transportation (in relation to regional prices); and the low frequency of flights.

The second most important component in the cost structure is labour: the importance of design in RP’s business explains the relative high labour cost (22%) in comparison to Exportadores Bolivianos (7%) – today Rafaela Pitti employs 26 permanent and highly qualified designers and workers. It is very important for this firm to ensure the continuity of workers since the cost associated to labour rotation is much higher than in Exportadores Bolivianos. Careful selection process, incentive policy and continuous training are some of the human resources policies oriented to increase production quality standard.

Even though abundant raw material and relatively low cost wage rates in Bolivia constitute important comparative advantages of Rafaela Pitti, its main competitive advantage is product innovation (new and exclusive design). The combination of exclusive design, high quality product and a relatively competitive price is what gives RP advantages in relation to other producers. At the same time that the strategy of diversifying markets has allowed RP to diminish its dependency on a single market, making it less vulnerable to loss of trade preferences with the United States, though market diversification implies complex logistic problems associated to commercialising with different countries; an inefficient customs system and an air transportation industry in crisis have a negative effect on export costs. These factors are included in indirect costs, which constitute 13% of the total cost structure of RP.

Rafaela Pitti makes a 25% profit per unit of jewellery, much higher than the EB profit rate of 11%. These differences suggest specific business strategies to compete in foreign markets and to confront risks. Both firms face similar problems such as infrastructure and communication problems, lack of services and goods that complement the export jewellery industry, informality and non-reliability in the downward chain of production, a customs system not prepared to give efficient and specific treatment to emergent industries.

The two business strategies reflect the two types of international niche-markets, where each competes. A direct consequence of these differences are heterogeneous policy priorities and effects – for example, even though the amount Exportadores Bolivianos exports is much higher than Rafaela Pitti´s exports, EB is much more vulnerable to decisions out of its direct control. EB depends much more on international

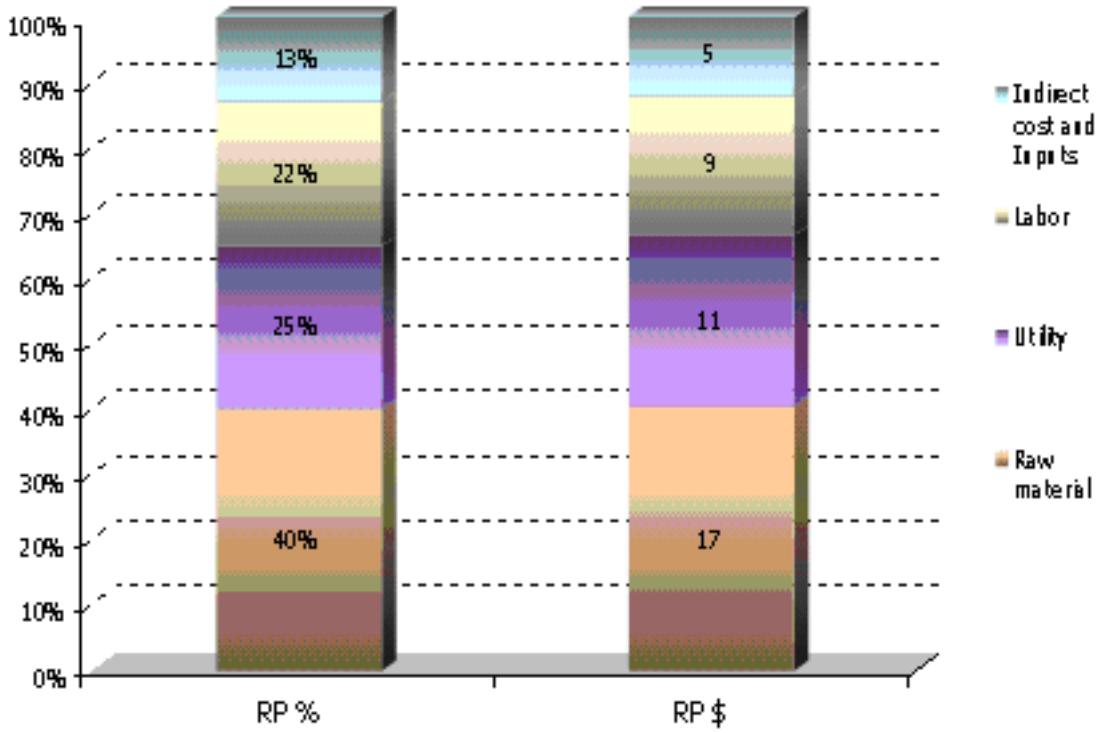


Chart 8: Rafaela Pitti's (RP) cost structure

agreements than Rafaela Pitti. Rafaela Pitti, on the contrary, maintains control over production and commercialisation; the customer-orientated approach has allowed constant exposure to new market trends, bringing attention to new niches. Rafaela Pitti is a small firm with the ability to develop new designs according to new demands and fashion tendencies.

Having consolidated big-factory production of a standard range of products orientated to a price-sensitive segment of the United States jewellery market, the main threat to EB today is the end of the international agreement ATPDEA, with its main expectation being the continuation of Bolivia's trade preferences and the management of the business environment to lower production and transaction costs. Rafaela Pitti´s situation is quite different: having built a proactive organisation, with innovation as the main asset, orientated towards diversified and quality-sensitive market niches around the world, RP faces new challenges apart from the problems in the internal business environment; its focus is to consolidate their trademark through publicity, packaging and communication strategies and through the opening of franchises in other countries.

3.2 Manufactured wood products

The use of forest resources in Bolivia was restricted to the extraction of biomass for firewood and coal until the fifties. In the 1960s a new road started a new phase for forestry which gained steady momentum during the second half of the eighties with the control of the hyperinflation and the new economic policy; the following decade, forestry contracts generated incentives to extract high-value, wood species such as *mara, cedro* and *roble*, which centralised the permits into a few hands. This situation was changed radically with the promulgation of Law n.1700 (Forestry Law) in December 1996, which established norms to regulate the rights to access forest resources in a sustainable way. This legislation created a new institutional environment for the manufactured wood industry in Bolivia, which in turn became the country with the greatest extension of certified forest in the world: 28,190,625 has. and 1.9 millon has. certified by international standards of sustainable management. Bolivia was one of the regional leaders to implement a Forest Law in a sustainable development framework.

In 2004 the manufactured wood products represented approximately 5% of national GDP with around five thousand people participating in activities related to extraction, transportation and processing of wood products (UDAPE, 2005). The main markets for Bolivia's wood-manufactured goods are United States (44.5%), Europe (22.9%), Latin America (8.9%) and the Netherlands (3%).

The analysis of two firms – MABET and SOEX – illustrates examples of the two most important types of enterprises in the Bolivian timber industry for export. Mabet is eleven years old and represents more than 40% of the Bolivian wood manufactured goods export, while SOEX is only four years old and is just beginning to position itself in foreign markets. Besides the size and time differences, these firms exemplify two types of strategies to cope with similar problems in order to compete in foreign markets.

3.2.1 Mabet

Mabet was created in 1985 in the city of El Alto and started as carpentry for the Etienne's Construction Business Group. In 1992, Mabet extended its activities to the production of doors and accessories and in 1993, began to export doors to the United States of America under the trade preferences granted by the ATPDEA. Since then, Mabet´s business strategy has been based on backward vertical integration. In 1995 Mabet bought a sawmill, in 1999 the finger joint fabric in Riberalta and in 2005 Inforcasa and its forest concessions, advancing the integration of important parts of the production process. In terms of forward relations, Mabet has established a portfolio of wholesale companies such as Home Depot through which it commercialises its standard wood doors.

The firm has counted on different financial sources: in 1991, with the support of CAF, the firm started to change its orientation from local market to exportation; in 1993 Mabet concretised the first export of doors and accessories; and in 1997, Fundación Bolivia Export became a partner and Mabet changed from the SRL society to a SA society. This is the year that MABET began to generate utilities, mostly reinvested in machinery and in the fabric structure. In 2002, credit from BID allowed, in the first phase, the consolidation of the line of laminated doors through investing in machines and infrastructure and, in the second phase, through the acquisition of forest certification and the installation of an industrial drying oven. In 2002, dividends began to be distributed among owners and a new policy established the reinvestment of at least 50% of dividends in the firm. However, in 2004 Mabet underwent a financial crisis due to the rhythm of investment.

Mabet's products include pavement, garden furniture, furniture in general, cattail and beams, but its main products are doors, wood frames and solid and laminated accessories made from different types of wood species such as *mara macho, roble, tajibo* and *maní.* The production of doors averages 5,000 units per month in five lines: elegance, home design, classic door, exclusive design and trench door.

The vertical integration strategy tackles the two main components in the cost structure of Mabet: raw materials, mainly wood, represents 35% of the total costs while labour represents 22%. In comparison to the cost structure of Bolivian firms in the timber industry, Mabet's raw material costs are one of the lowest while labour costs are one of the highest.

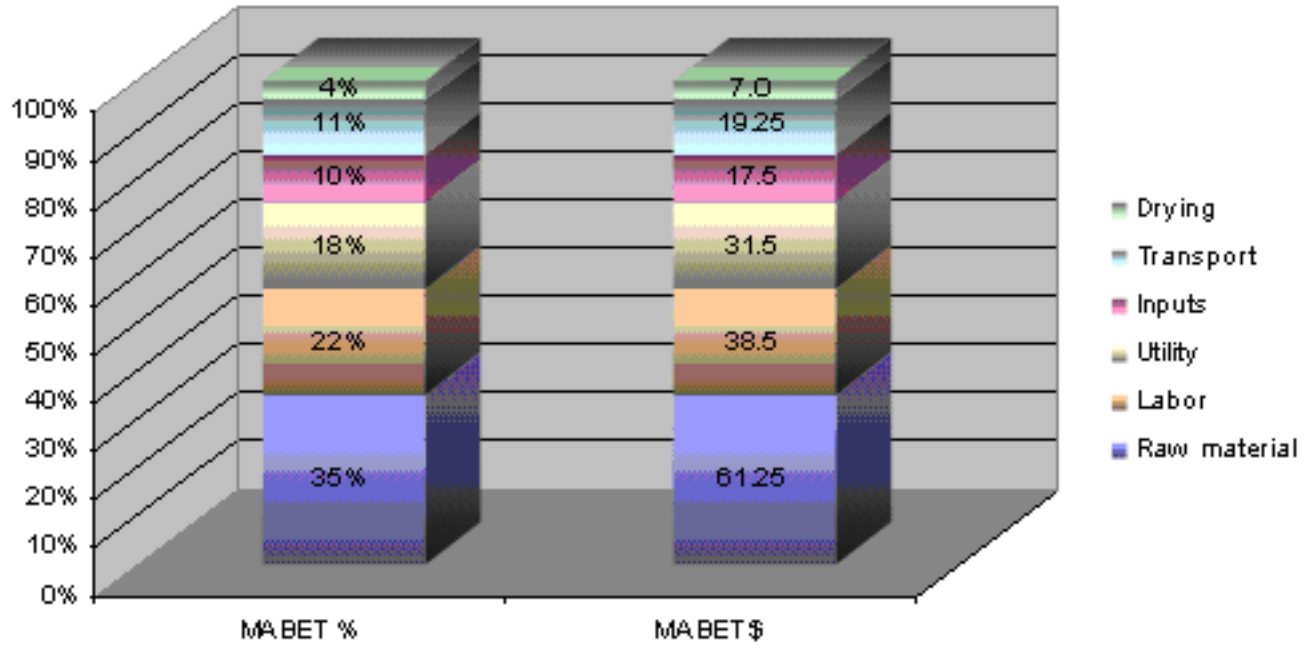


Chart 9: Mabet's cost structure

The control of forestry resources has not only secured sustained access to raw material with international quality certificates, but it has also significantly diminished its cost, which is a most important advantage to Mabet. The cost of drying wood is also one of the lowest due to technology investments. At the same time cheap labour constitutes another important comparative advantage, as the cost of labour is significantly lower in Mabet when compared to other firms. This is the result of two main business strategies – vertical integration and a sustained human resources policy; because Mabet participates in almost the whole process of production, with the exception of commercialisation and raw material transportation, it requires workers with different specialties as well as permanent workers and temporary workers for the timber felling and cutting, generating 1,200 direct and approximately 4,200 indirect jobs. The indirect and direct costs associated with managing a diverse and territorially-dispered labour force explain an important part of labour costs, as does the human-resource strategy employed to encourage reliabilty and stability in the

workers. Mabet has implemented a policy of incentives, of on-time payments, social insurance and timely delivery of work equipment, the objective being to keep labour rotation as low as possible.

The firm's social responsibility towards workers is also extended to their families. In order to guarantee the continuous process of production, it is not sufficient to have the workers signed up to the public health system; Mabet´s location in the city of El Alto also imposes the need to seek for acceptance from the community. Whenever the firm decides to expand infrastructure, it must share this decision with the community. It includes collective celebrations and the firm's contribution to public goods such as the building of sport fields or the contribution to neighborhood festivals. Such activities have allowed Mabet to deal with highly uncertain political moments and to overcome blockades and riots in order to comply with business commitments with foreign clients.

Other important components in Mabet´s cost structure are transportation (11%) and inputs (10%). The same problems diagnosed in the jewellery industry hold in the wood industry: a poor road system that limits the flow of raw material; an inefficient customs system that generates problems to import inputs such as machinery and other raw materials; non-competitive air transportation; and low frequency of international flights.

Mabet's profits are 18%, with Mabet exporting more than 80% of its products to the United States. The other 20% goes to Chile, Denmark, Holland, Spain among other countries. Mabet structured its business strategy on the basis of the ATPDEA and the SGT. If Bolivia does not renew these agreements, Mabet may have to reduce the volume of exports, which may cause a financial crisis – a scenario that Mabet is responding to by working on the opening of new markets in South America and Europe, such as a new partnership with a wholesale company in Chile.

3.2.2 Soex

In contrast to Mabet, Soex started as an export enterprise in 2002. Two professionals with 18 years of experience in the manufactured-wood industry and a capital of US $8,000 decided to manufacture timber products for export. They bought a property of 600 m^2 in the city of El Alto. The property did not have basic services such as water, electricity or telecommunications and the zone was not included in the plan of expansion for electricity service, so the partners decided to use private resources to expand the electricity grid the three kilometers needed. The firm started with national machinery and two workers, on a trip to the US, Soex contacted a Bolivian entrepreneur who had a demand for 25 doors: in the third month of operation, Soex started generating profits. Now Soex has a shopfloor of 7000 m^2, 25 workers and export 180 doors a month and capital has grown to 2,500% in four years as a result of the 100% reinvestment of utilities. Soex has not borrowed credit until now and the total value of export in 2005 was up to US $450,000.

Soex produces of wooden furniture, hand-made doors and accessories: the doors are exported to the United States and constitute 40% of the total export of the firm; the furniture is sent to Sweden and corresponds to 60% of the firm's total export.

Currently, Soex sells services to ELECTROPAZ, the electricity company in La Paz, but. Soex is not the only firm that has invested in basic services in Bolivia. Many other firms, such as Mabet in Cobija and Ametex in La Paz, have invested in electricity services and La Estrella has built a water well for its production process. Most of the time, this type of investment is calculated as a 'sunk cost'.

Soex competes in high quality niche-markets. Even though low-cost labour and abundant raw material are important comparative advantages, Soex does not compete on the basis of price: the cost structure reflects the Soex's business strategy to cope with Bolivian business environment

The most important components in Soex's cost structure are raw materials, representing 48% of total costs. One of the most important advantages of Soex is the access to diversified, certified and high-valued woods; Soex has built a solid network of suppliers of raw material, mainly local organisations owning forest concessions and provides basic equipment for timber felling and continuous training on sustainable management systems; thus Soex's raw material costs are much higher (in absolute and relative terms) than Mabet's costs. Again, the inefficient road system impedes the constant flow of raw material, though in the dry season, Soex stores raw material to help prevent future provision problems.

The second most important component in Soex's cost structure is labour, representing 18% of total costs. Low labour-cost is one of the most important advantages in the timber industry, however, Soex depends on qualified and reliable workers to produce diverse, exclusive and artisan wood products; in contrast to Mabet, Soex is orientated towards quality-sensitive niche-markets. Their human resources policy is central to Soex's competitive advantage, a great amount of time and resources are invested in motivating and training workers, the objective being able to count on workers committed to the firm's success.

Soex is also less dependent on a future free trade agreement than Mabet, as not only is Sweden its principal market, but Soex does not compete on the basis of price in the US market. The hand-made doors with exclusive designs are orientated to elite consumers willing to pay for quality and exclusiveness. Soex is now searching for new markets in Europe; it is also continuously improving firm's capacity to respond to clients' demands.

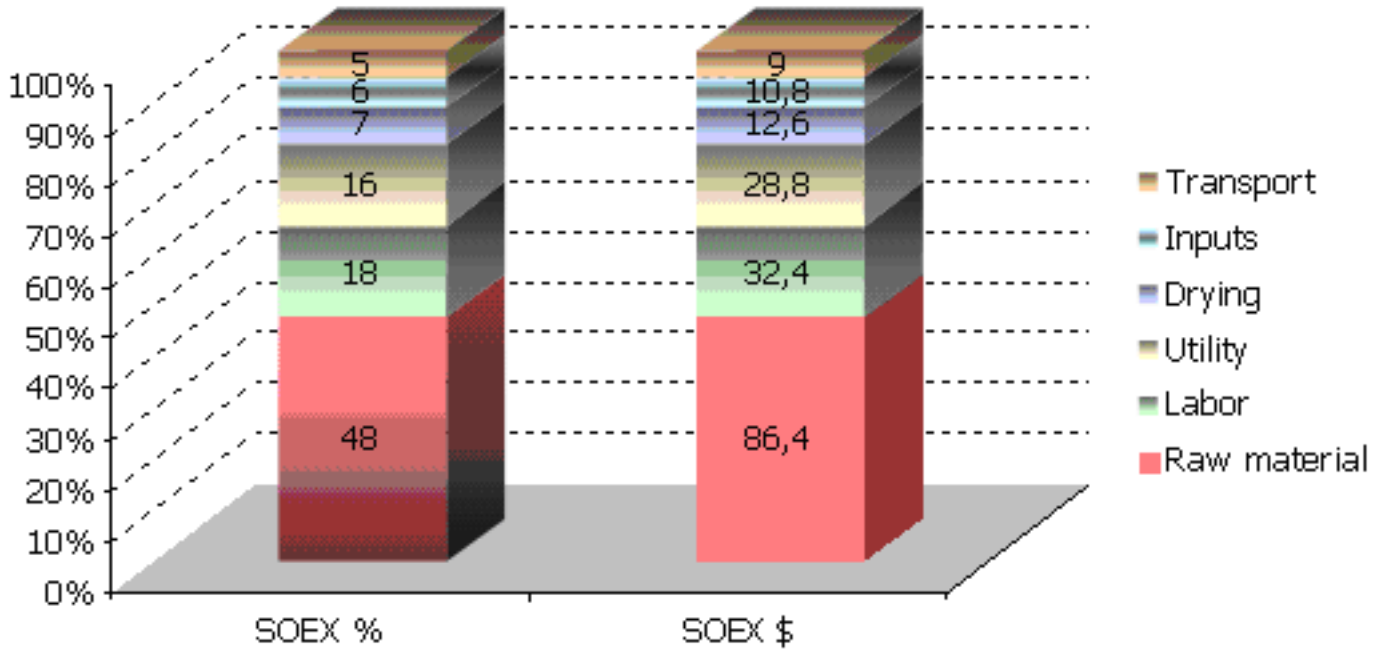


Chart 10: Soex's cost structure

3.3 Soy products[1]

Bolivia began producing soy in the 1970s, substituting the production of cotton. Soy production made use of industrial plants already installed and held the promise of exporting to Andean countries. Between 1977 and 1981 Santa Cruz increased from 10 thousand to 40 thousand hectares of cultivated soy. Three public initiatives were crucial in setting up an adequate institutional environment to fuel the soy-export industry over the next two decades. The first one was the land expansion project in Santa Cruz that consolidated the land structure; the second one was subsidised credit to the agricultural industry in the 1980s; and the third was a trade negotiation that consolidated the Andean Community of Nations, with trade preferences for Bolivian products. These policies generated the necessary conditions to spur the growth of the soy industry during the next two decades.

During the 1990s Santa Cruz lived through a third boom in the agricultural frontier with the incorporation of new areas of production. Between 1987 and 1999, the total cultivated surface increased from 70 thousand to 619 thousand hectares, with Production increasing from 130 thousand to 970 thousand tons. During this period, the soy industry became more complex and diversified in terms of oils, flour and soy cake. From an export total of US $30 million in 1990, soy achieved US $340 million in exports in 2000, increasing its participation from 3% to 26% in total Bolivian exports (UNDP, 2005). After the steady expansion of the Bolivian soy industry between 1998 and 2002, a fourth period of expansion of the agriculture frontier took place under an internationally favorable context. By 2004, the exports of the soy industry in Santa Cruz were above 420 million dollars, representing 20% of the total export of Bolivia.

Exports of soy have become one of Bolivia's leading non-traditional exports and an important source of employment and foreign exchange. Bolivian producers have displaced world leaders Brazil, Argentina, and the United States in the markets of Andean Pact countries: in one of the poorest countries in Latin America, there is a soy export industry worth $340 million per year.

Soy is a commodity product sold solely on the basis of price. As any other commodity sector, quality and service does not make much difference in the final price, as commodity export-driven strategies are pretty much constrained by the pressure to lower costs. Countries like Bolivia, with an insignificant participation in the world soy market (0.26% in 1997), do not have the opportunity to influence soybean prices worldwide; strategies such as withholding production to drive prices up are not available to Bolivian producers, which leaves Bolivian soy producers with the only alternative of lowering costs. Therefore the main strategy of Bolivian soy producers is the improvement of profitability by lowering costs.

Taking a look at the cost structure of soy production in 1994, it is clear that Bolivia has succeeded in getting competitive prices on fertiliser; land depreciation and improvement expenses; financing costs; and per-ton cost of contracted labour. The soil of Santa Cruz is among the richest in the soy-producing world. In 1994 it yielded a full 2.2 metric tons per hectare compared with Brazil's 1.7 metric tons per hectare, an advantage which allowed producers to cultivate soy without using fertiliser for many years.

1. This section is based on UNDP (2005) and Fairbanks and Lindsay (1997).

Another important source of comparative advantage is low-cost labour, which is one of the lowest in the region (Fairbanks and Lindsay, 1997).

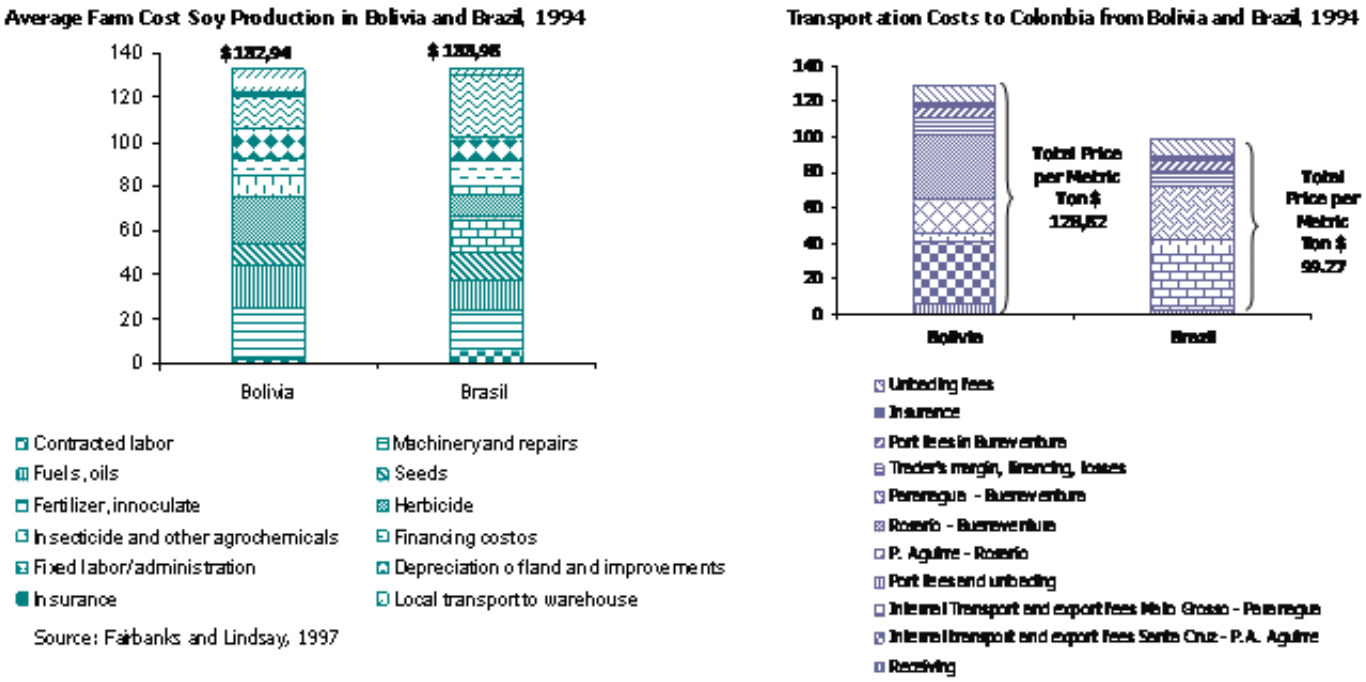


Chart 11

However, Bolivian producers have not done much to lower the prices of inputs – such as machinery and repairs, fuels and oils, seeds, herbicides, insecticides – and there is a lack of Bolivian suppliers of specialty products to the soy-industry, forcing producers to import technology and agricultural inputs (mostly second-hand machines) from Brazil.

Transportation costs are the main comparative disadvantage in the Bolivian soy-export industry, with exports to Colombia, for example, involving transferring the soy from storage warehouses onto trucks, unloading the trucks at a port on the Paraguay River, and then shipping the soy to the Colombian port of Buenaventura. In 1994, Bolivian producers paid $31 per metric ton more than Brazilian producers, with inefficient railroad and road services accounting for much of the difference. (Fairbanks and Lindsay, 1997) The good news is that in a few years Bolivia will have paved roads connecting the soy-growing regions to the Paraguay River.

On the other hand, Bolivia has an important advantage in taxes and tariffs: when compared to Brazil, Bolivians pay almost $21 less per ton in taxes; and thanks to the Andean Pact, Bolivians pay no tariffs to export to Colombia, their main market. Fairbanks and Lindsay estimate that, in the mid 1990s, 45% of the total of Bolivian transportation costs and domestic taxes was determined by the Andean Pact, today Bolivian soy competitiveness still depends on trade preferences, but, and maybe more importantly, encourages Bolivian producers to rely on government-provided sources of advantage, on cheap labour and on abundant land.

4. Conclusions

The literature on growth, investment and productivity concentrates on the need to explain why Latin American economies seem trapped in a long-term low-growth equilibrium (see CEPAL 2006). In the case of low-growth economies in the region, such as Bolivia, the question of how to accelerate and sustain growth seems all the more important. Beyond national averages, however, there is a distinct need to unpack the sectoral composition of growth and describe which constraints seem binding for the most dynamic sectors of the economy (Hausmann, Velasco and Rodrik, 2003). The key question, in this case, is not merely 'how to explain poor growth' but rather, 'how to explain pockets of high growth, in a low-growth, low-investment and low-productivity economy'. The Bolivian case is an interesting one for at least three reasons: firstly, because it is a poor performer in a poor performance region – it should be growing at a faster rate given existing physical, human and technological endowments; secondly, because it has gone through comprehensive waves of stabilisation, structural adjustment and institutional reforms, and has attempted to unleash barriers to growth through concerted policy reform; and thirdly, the Bolivian economy is a natural-resource-based economy, immersed in a process of export diversification, thus providing an opportunity to test some of the self-discovery and innovation questions discussed by Hausmann and Rodrik (2003) and Hausmann and Lederman (2006).

4.1 Findings

Three findings stand out from our growth diagnostics exercise. The first has to do with the way we characterise the Bolivian economy. Although a look at average growth, investment and productivity figures for the last 30 years paints a bleak picture, we identify 'binding constraints' to growth for tradeable and non-tradeable sectors, thus disaggregating our analysis to the sectoral and product level. Seen in this light, the Bolivian economy can be described as a four-sector economy:

- the first sector is the traditional mining and hydrocarbons economy that has attracted foreign investment over the century, explained approximately half of observed per capita growth since the 1950s and provided a modest fiscal cushion over the long run. The shortcomings of this sector, however, are well known: the extractive sectors have functioned as enclaves for long spells, isolated from domestic markets and short on job creation.
- The second sector is one of incipient nontraditional export, emergent since the mid-1980s. This sector is mostly based on natural resources but has added value with light manufacturing products (leather, jewellery, wood furniture, textiles and agroindustrial goods). It is the core of a diversified, export-oriented and broad-based economy.
- The third sector is the massive non-tradeable service sector that includes an urban 'informal' sector and a growing transportation sector. This has traditionally been of comparatively low-productivity, but is closely tied to the competitiveness of the emerging non-traditional export economy.
- The final sector, the 'campesino' non-tradeable, agricultural and rural economy is the lowest-productivity sector of the Bolivian economy and despite accelerated urbanisation, continues to account for almost a third of the Bolivian labour force.

The second finding concerns the way we characterise 'pockets of growth'. In the case of small, open and resource dependent economies, such as that of Bolivia, this means focusing on non-traditional exports. Following Hausman et al. (2003), we ask what might count as a 'high-return' activity in the tradeable sector. Three filters are used to identify 'high-return' products: the first, and broadest, is to exclude all 8-digit SITC products for which Bolivia has zero-tariff market access but does not export any goods, this accounts for about 4,500 'potential export products'. The rationale behind this filter is that it includes thousands of products for which the high structural costs of the Bolivian economy are unsuitable. The second filter is to exclude export products that are not in expanding regional or world markets, this accounts for about 327 of the existing 487 export products at 4-digit SITC. The third filter is to estimate Balassa indices for exports in expanding markets. As a result only 23 export products survive the three filters for the period 1980–2005; the implications of this filtering exercise are illuminating. Bolivia is indeed a 'narrow-based economy', focused on mining, hydrocarbons and a handful of non-traditional exports such as soybeans, leather goods, wood-product manufacturing and jewellery. The structural costs imposed by transportation costs, low human capital, and non-growth promoting institutions are high and there is a high payoff in reducing these structural costs, but also in reducing the idiosyncratic co-ordination and innovation failures associated with 'growth pocket' products.

The third finding is how we explain 'success in adversity' in the Bolivian economy. The three case studies: soybeans, wood manufactures and jewellery, illustrate three export pathways: (i) homogeneous and bulk commodities, (ii) price-sensitive products and (iii) quality-sensitive products. Each suggesting a different 'success' story: the soybean (commodity good) case study is a case of highly active industrial policy – cheap land, cheap credit, subsidised diesel fuel and trade preferences – that kept the soybean industry afloat for over 15 years despite declining productivity levels in the sector (see UNDP 2005). Also, the impact of policy interventions cannot be underestimated. Bolivian soybeans compete in bulk commodity markets, based on economies of scale, where the key comparative advantages have, since the mid 1980s, been abundant land, cheap labour, targeted diesel subsidies and cheap credit (increasingly substituted by upstream financing in the 1990s). The key disadvantages have been a dependence on imported technology packages and inputs, and a scarcity of competitive service providers for soybean industrialisation, also although business strategies have shifted over the 15 year period, there has been a strong tendency towards cost-reduction rather that productivity-enhancing strategies.

Price-sensitive products such as chain jewellery or basic furniture parts face different market challenges. Although highly competitive, they differ from commodity markets in that products are exchanged in precise niche markets, dependent on trade preferences, disaggregated market information and changing consumer tastes. Firms in this category, where key comparative advantages are cheap labour and abundant natural resources, are followers of imported and pre-packaged technology. The disadvantages in this category are the need to control natural resources downstream and standardise labour quality. Hence, it is the strategy of backward vertical integration, providing less uncertainty with respect to suppliers, and forward vertical integration, with respect to wholesalers, that ensures secure market demand.

Quality-sensitive products, such as artesanal jewellery or highly-crafted wood products are perhaps the most challenging, but also the most interesting case in non-traditional Bolivian exports. This is a differentiated-product market, that demands high levels of quality at relatively low cost. Comparative adavantages lie in the presence of highly qualified designers, abundant natural resources and diversified markets; disadvantages include poor public goods and services, the absence of complementary private

providers, and imported inputs and technology. Business strategy, unlike in the price-sensitive markets, is based on high value added to forward market integration. In the Bolivian case this means reaching consumers in niche markets by participating in consumer retailing. This is accompanied by backward co-ordination with potential suppliers of goods and services, rather than vertical integration. The most important element in business strategies in this category, however, is investing in innovation and product discovery – this is a market that pays a high premium for innovation and market leadership.

Chart 12: Overcoming Adversity: Heterogeneity in Firm-level Responses

	Price Sensitive Markets *Exportadores Bolivianos & Mabet*	Quality Sensitive Niches *Rafaela Pitti & Soex*	Commodity Markets *Soybean Products*
Market Niches	• Standard products • Large-scale production • Average level of quality • Low-cost strategy	• Differentiated product • Medium-scale of production • High level of quality • Relatively low cost	• Standard products • Large-scale production • Standard quality • Low-cost strategy
Comparative Advantages	• Cheap labour • Abundant natural resources • Tax preferences • Followers in technology & product design	• Qualified designers, workers & low-wage rates • Abundant natural resources • Diversified markets • Leaders in technology & product design	• Cheap labour • Abundant natural resources (land) • Tax preferences • Followers in technology
Comparative Disadvantages	• Imported inputs & technology – dependency on foreign provision of specific inputs • Absence or scarcity of related products & services • Insufficient & inefficient public goods & services	• Imported inputs & technology – dependency on foreign provision of specific inputs • Absence or scarcity of related products & services • Insufficient & inefficient public goods & services	• Imported inputs & technology – dependency on foreign provision of specific inputs • Absence or scarcity of related products & services • Insufficient & inefficient public goods & services
Business Strategies	• Backward vertical integration – internalization of the main raw material supply • Forward co-ordination with wholesale companies • Cost-reduction of labour & natural resources	• Forward vertical integration – direct relationship with consumers • Backward co-ordination with a network of suppliers of the main raw materials • Innovation & diversification of markets	• Cost-reduction – natural resources & labour costs

4.2 Analytical and Policy Implications

Two policy implications stand-out from the Bolivian case study. The first is analytical: the unpacking of dynamic and innovative sectors and products suggested by Hausmann and Rodrik (2003 and 2006) opens up a field of empirical challenges: how to measure 'binding constraints' on growth? 'Self-discovery'? 'Innovation'? Which products to observe at what level of disaggregation? In this paper we attempted to isolate the effects of countrywide determinants or obstacles to growth from industry, sector or product-specific determinants and barriers in a context of large spillovers, externalities and market failures. For low-growth economies, measuring success in adversity is as important as measuring the determinants of overall poor performance. A closer look at the dynamics of non-traditional exports allows this and provides

a policy-useful entrance to industrial policy. Which obstacles and barriers to growth are countrywide and which are product-specific? By filtering export products at the SITC 4-digit level, by (i) zero tariff market access, (ii) expanding world market share, and (iii) Balassa-revealed comparative advantage, we arrive at a subset of products that can be confidently identified as 'competitive' in a low-growth, low-investment and low-productivity economy.

The second implication is policy usefulness: a disaggregated look at firm-level responses to high-cost and high-risk business environments allows closer examination of industrial policy design that avoids many of the pitfalls of one-size-fits-all approaches. Does Bolivia need new roads? Yes. Better technological transfer and training? Yes. Competitive trade and exchange rate policies? Yes. But how to pinpoint which combination of interventions has the most significant impact on the growth of non-traditional exports in quality-sensitive, price-sensitive or commodity markets is the important question. How to disentangle countrywide effects from industry-sector or product-specific effects? How to identify potential co-ordination and co-operation trade-offs in an economy that seems to need 'everything?'. The implication of this train of thought is that the design of industrial development policy for 'low-growth' economies should at least be two-pronged: (i) a first set of policies aimed at lowering the overall 'country cost' of creating new investment opportunities in such an economy, but more crucially, (ii) a second set of policies tailored to the product-, sector- and industry- specific 'binding constraints' of dynamic and high growth pockets. This involves a distinct policy mix for specific quality-sensitive, price-sensitive and commodity exports. Hopefully, the type of analysis presented above might shed some light on the heterogeneous needs of exporters without diminishing the need for lowering the binding constraints that affect *all* investment opportunities in a low-growth, low-investment and low-productivity economy such as Bolivia's.

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6. Annex 1

Bolivia: Composicón de las exportaciones 1980–1989
(Valores oficiales en Millones de Dólares

Detalle	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
A) Productos Tradicionales	898.0	892.6	818.6	767.8	751.4	638.3	533.4	463.6	492.5	617.8
I. MINERALES Y METALES	**652.8**	**556.6**	**420.2**	**347.7**	**363.4**	**263.8**	**200.8**	**207.5**	**273.6**	**403.4**
Estaño	340.9	321.3	263.5	195.5	235.1	176.9	103.2	69.2	77.6	127.4
Plata	111.2	68.2	35.0	54.0	19.6	9.5	24.3	7.5	28.0	31.4
Zinc	41.1	40.4	38.4	33.4	36.7	29.5	28.0	32.8	60.1	132.2
Wolfram	47.4	43.0	33.9	20.4	18.9	10.3	6.7	5.1	5.3	6.9
Antimonio	26.5	34.1	17.8	16.3	22.9	15.9	14.8	22.8	17.4	15.8
Plomo	14.2	11.1	6.3	3.7	0.8	0.5	5.0	4.2	6.2	10.9
Oro	0.0	0.0	0.0	0.1	0.3	1.2	2.9	8.5	15.0	44.4
Otros	71.5	38.5	25.3	24.3	29.1	19.9	16.0	37.4	63.9	34.4
II. HIDROCARBUROS	**245.1**	**336.1**	**398.4**	**420.1**	**389.0**	**374.5**	**332.6**	**256.1**	**218.9**	**214.4**
Gas Natural	220.9	326.2	381.6	378.2	375.9	372.6	328.7	248.6	214.9	213.8
Otros	24.3	9.8	16.8	41.9	13.1	1.9	3.9	7.5	4.0	0.6
B) Productos No Tradicionales	145.5	91.1	79.7	49.9	29.0	34.2	106.7	106.0	104.6	201.0
Soya y derivados	6.9	3.9	7.7	4.6	2.2	5.3	18.6	18.5	19.9	31.1
Café en grano	20.7	15.7	15.5	13.1	6.5	13.9	13.3	11.5	17.1	12.7
Cacao	1.8	0.8	0.5	0.4	0.3	1.2	3.5	1.0	0.9	1.7
Azúcar	47.6	5.7	8.9	12.4	6.3	1.6	4.9	8.6	6.3	19.3
Bedidas en general	1.6	9.1	3.1	0.6	0.2	0.3	1.4	1.8	0.7	5.7
Maderas y Manufacturas de maderas	32.3	20.3	15.1	7.5	6.2	5.9	23.0	30.8	24.1	45.6
Cueros y Manufacturas de Cueros	5.8	5.2	3.3	0.8	0.8	1.4	7.5	8.1	18.4	18.0
Goma	4.6	3.4	4.1	2.8	0.8	0.5	3.8	1.8	1.7	1.4

Castaña	1.8	2.0	1.3	1.2	1.9	1.5	3.5	6.7	5.0	9.1
Algodón	1.0	2.8	4.9	2.5	0.5	0.6	4.7	6.6	2.1	8.8
Productos de Joyeria										
Otros (1)	21.5	22.2	15.2	4.1	3.3	1.8	22.6	10.7	8.4	47.4
Subtotal	1,043.5	983.7	898.3	817.7	781.4	672.5	640.1	569.6	597.1	818.8
C) Re-exportaciones (2)	6.1	7.3	18.7	11.6	2.4	2.5	10.1	17.9	10.8	33.2
D) Efectos Personales	0.3	0.2	0.3	0.2	0.1	0.3	0.3	0.3	0.3	0.4
Total Valor Oficial	1,049.8	991.3	917.2	829.5	784.0	675.3	650.5	587.8	608.2	852.4
Total Valor Fob De Balanza de Pagos	942.2	912.4	827.7	755.1	719.5	628.4	587.5	518.7	553.2	745.7

(p) Preliminar
FUENTE: Instituto Nacional de Estadística

Bolivia: Composicón de las exportaciones 1990–1999
(Valores oficiales en Millones de Dólares

DETALLE	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
A) Productos Tradicionales	634.4	597.1	512.2	485.1	544.7	663.2	619.3	606.6	531.8	472.2
I. MINERALES Y METALES	**407.7**	**356.3**	**378.6**	**382.3**	**437.9**	**510.5**	**478.0**	**499.6**	**435.2**	**397.1**
Estaño	107.6	100.1	98.2	83.9	91.3	89.6	83.5	81.6	66.1	69.4
Plata	33.6	28.3	44.2	56.0	62.7	70.8	64.0	59.3	73.1	68.1
Zinc	146.7	140.3	172.5	119.5	105.3	151.3	151.7	200.0	158.2	154.3
Wolfram	4.6	7.6	5.8	1.6	2.4	4.8	3.5	2.7	2.4	1.4
Antimonio	12.7	10.5	10.0	7.7	13.2	12.4	96	8.9	6.5	3.6
Plomo	15.3	10.9	11.1	9.9	12.1	12.6	12.1	11.1	9.1	4.8
Oro	65.3	39.3	21.9	76.3	119.1	130.8	119.6	110.5	112.7	89.1
Otros	21.8	19.8	15.1	27.4	31.8	38.1	34.0	25.4	7.0	6.4
II. HIDROCARBUROS	**226.7**	**240.8**	**133.6**	**102.8**	**106.8**	**152.6**	**141.3**	**107.0**	**96.7**	**75.1**
Gas Natural	225.3	232.2	122.8	90.2	91.6	92.4	94.5	69.9	55.5	35.5
Otros	1.4	8.6	10.8	12.6	15.1	60.2	46.8	37.1	41.2	39.6
B) Productos No Tradicionales	288.3	253.6	228.9	300.7	545.1	474.5	595.2	647.3	576.3	570.0
Soya y derivados	40.2	67.3	56.9	74.2	118.5	142.1	200.6	242.5	231.7	222.8
Café en grano	14.1	7.1	6.9	3.9	15.1	16.9	16.5	26.0	15.0	13.8
Cacao	3.7	1.0	0.8	1.1	0.8	0.6	0.6	0.8	0.8	0.8
Azúcar	31.6	30.7	25.4	15.7	45.5	16.8	27.9	22.1	23.6	9.2
Bedidas en general	2.7	4.1	3.3	4.0	5.3	7.3	9.3	6.9	9.5	9.6
Maderas y Manufacturas de maderas	49.8	49.0	49.9	53.4	86.4	75.9	82.6	87.6	67.5	72.6
Cueros y Manufacturas de Cueros	27.1	14.2	11.8	14.6	12.0	12.4	12.2	14.8	11.3	12.7
Goma	2.0	1.0	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Castaña	13.0	9.5	11.2	15.2	15.8	18.7	28.6	31.1	30.9	30.9

Algodón	6.4	14.3	9.8	9.6	15.5	30.1	32.8	40.7	16.9	19.8
Productos de Joyeria			27.7	71.1	163.8	90.2	89.3	74.2	48.2	47.4
Otros (1)	97.5	55.3	25.1	37.7	66.3	63.5	94.8	100.6	121.1	219.6
Subtotal	922.7	850.6	741.1	785.8	1,089.8	1,137.6	1,214.5	1,253.9	1,108.1	1,042.2
C) Re-exportaciones (2)	32.7	44.4	31.8	22.2	33.2	42.1	79.2	16.5	214.7	360.6
D) Efectos Personales	0.2	0.3	0.9	0.9	1.2	1.5	1.7	1.8	1.9	2.5
Total Valor Oficial	955.7	895.3	773.8	808.9	1,124.2	1,181.2	1,295.3	1,272.1	1,324.7	1,405.3
Total Valor Fob De Balanza de Pagos	845.2	776.6	637.6	709.7	985.1	1,041.5	1,132.0	1,166.5	1,104.0	1,051.1

(p) Preliminar
FUENTE: Instituto Nacional de Estadística

Bolivia: Composicón de las exportaciones 2000 – 2005
(Valores oficiales en Millones de Dólares

DETALLE	2000	2001	2002	2003	2004	2005(P)
A) Productos Tradicionales	603.7	643.6	693.3	874.6	1,308.1	1,886.2
I. MINERALES Y METALES	**424.9**	**340.0**	**346.9**	**369.3**	**457.2**	**544.3**
Estaño	76.5	56.1	58.2	74.65	147.12	125.8
Plata	74.0	53.9	68.5	75.86	91.22	92.36
Zinc	170.6	118.9	112.1	124.18	151.72	200.15
Wolfram	1.9	4.0	1.6	2.15	2.55	7.61
Antimonio	1.7	1.8	3.3	6.52	8.55	18.76
Plomo	4.8	4.1	4.6	4.43	9.5	10.9
Oro	88.0	92.2	89.7	72.13	34.32	78.68
Otros	7.4	9.0	9.1	9.40	12.22	10.04
II. HIDROCARBUROS	178.8	303.6	346.4	505.3	850.9	1,341.9
Gas Natural	121.4	239.3	266.2	389.56	619.72	983.95
Otros	57.3	64.2	80.2	115.71	231.17	357.91
B) Productos No Tradicionales	642.6	582.4	626.6	715.2	886.5	865.8
Soya y derivados	299.2	275.0	318.6	369.76	425.58	373.47
Café en grano	10.4	5.8	6.2	6.39	9.35	11.29
Cacao	1.1	1.2	1.1	1.2	1.35	1.46
Azúcar	7.2	10.0	15.8	23.67	30.99	18.28
Bedidas en general	6.3	7.3	6.3	11.48	14.64	14.41
Maderas y manufacturas de maderas	57.7	41.0	41.1	42.83	56.09	67.61
Cueros y manufacturas de cueros	23.0	23.0	24.5	21.80	23.60	21.74
Goma						
Castaña	34.1	27.7	27.4	37.71	53.36	74.40
Algodón	10.6	4.6	3.6	3.68	5.28	4.46
Productos de Joyería	45.6	39.4	57.4	53.19	61.80	63.87
Otros (1)	147.7	147.6	124.7	143.46	204.41	214.78

Subtotal	1,246.3	1,226.0	1,319.9	1,589.7	2,194.6	2,751.9
C) Reexportanciones (2)	226.1	123.7	52.4	84.2	68.1	55.9
D) Efectos Personales	2.6	3.0	2.7	2.6	2.5	2.5
Total valor oficial	1,475.0	1,352.6	1,374.9	1,676.5	2,265.2	2,810.4
Total valor fob de balanza de pagos	1,246.1	1,284.8	1,298.7	1,597.8	2,146.0	2,670.8

(p) Preliminar
FUENTE: Instituto Nacional de Estadística