Trade and Exports

Steve Radelet with Cristina García and Mumtaz Hussain

Background paper examining the state of the Andean region for the Andean Competitiveness Project

April 5, 2000

Trade and Exports

Steve Radelet with Cristina Garcia and Mumtaz Hussain

MANUFACTURED EXPORTS AND ECONOMIC GROWTH

For the last thirty years, rapid economic growth and sustained growth in manufactured exports have been nearly synonymous with each other in developing countries. With few exceptions, the countries that have recorded the fastest growth in manufactured exports are exactly those countries that achieved the largest increases in per capita income and reductions in poverty across the developing world. The best known examples are the East Asian countries where rapid growth of labor-intensive manufactured exports led to income increases of between four-fold (in Southeast Asia) and seven-fold (in Hong Kong, Singapore, Taiwan, and Korea). Outside of East Asia, Mauritius, Ireland, Tunisia, and a few other countries have all achieved both rapid manufactured export growth and rapid economic growth over sustained periods of time.

Manufactured exports are generally thought to provide a range of benefits to an economy, including:

- accelerated technological progress through close connections with international firms that use leading-edge technologies;
- more extensive division of labor and economic specialization;
- high rates of investment into profitable economic activities;
- increased capacity to earn foreign exchange to finance imports of capital goods which cannot be produced locally, and
- greater employment opportunities for low-skilled, low-income workers.

During the last thirty years, the Andean countries have recorded relatively slow growth in both manufactured exports and total exports, and have therefore missed out on many of these potential benefits. Table 1 shows the growth rate of *total* exports for the five Andean countries between 1970 and 1998. For comparison, the table also shows export growth rates for five Central American/Caribbean countries (Costa Rica, El Salvador, Guatemala, Honduras, and Jamaica), and four resource rich Southeast Asian countries (Indonesia, Malaysia, the Philippines, and Thailand). Export growth rates were roughly comparable for the three groups of countries in the 1970s, averaging 20 percent for the five Andes countries, 16 percent for the Central American countries, and 25 percent for the Southeast Asian countries. During the 1980s, export growth slowed sharply in each region, but especially in the Andean (1.3 percent average growth) and the Central American countries (-0.4 percent average). Between 1990-98, export growth rebounded in the Andean countries to 5.2 percent on average, but was still well below the rates recorded in the Central American (9.4 percent) and Southeast Asian countries (12.4 percent).

Table 1: Exports Value (US$) and Annual Growth Rates (%)

	Exports Values (US$ Million)				Annual Growth Rates (%)		
Country	1970	1979	1989	1998	1970-79	1980-89	1990-98
Bolivia	190	760	822	1,103	16.6	0.8	3.3
Colombia	727	3,411	5,717	10,852	18.7	5.3	7.4
Ecuador	190	2,104	2,354	4,203	30.6	1.1	6.7
Peru	1,048	3,491	3,488	5,735	14.3	-0.0	5.7
Venezuela	3,169	14,317	13,286	17,161	18.2	-0.7	2.9
Average					*19.7*	*1.3*	*5.2*
Costa Rica	231	934	1,415	5,511	16.8	4.2	16.3
El Salvador	229	1,223	498	1,263	20.4	-8.6	10.9
Guatemala	290	1,241	1,108	2,582	17.5	-1.1	9.9
Honduras	179	734	859	1,575	17.0	1.6	7.0
Jamaica	342	818	998	1,312	10.2	2.0	3.1
Average					*16.4*	*-0.4*	*9.4*
Indonesia	1,108	15,591	22,160	48,847	34.2	3.6	9.2
Malaysia	1,687	11,079	25,048	73,304	23.3	8.5	12.7
Philippines	1,041	4,567	7,767	29,296	17.9	5.5	15.9
Thailand	710	5,298	20,078	54,456	25.0	14.3	11.7
Average					*25.1*	*7.9*	*12.4*

Source: IFS, IMF

Table 2 shows export data in more detail for each of Andean countries between 1980 and 1996. The table provides data on the types of primary product exports (agriculture, petroleum and gas, and metals and minerals) and three types of manufactured products (labor intensive products including textiles and garments, machinery and electronics, and other manufactures). With few exceptions (such as Colombia's petroleum and gas exports), export growth rates have been relatively low. Growth rates for manufactured products appear to be high in some cases, but the volume of these exports remain very small and continues to have relatively little impact on GDP in these countries.

Table 2: Exports in Five Andean Countries

	Exports Values (US$ million)		Export Shares		Average Growth (%)
	1980	1996	1980	1996	1980-96
Bolivia					
Total - All commodities	1,065	1,120	100.0	100.0	0.3
Agriculture	124	452	11.6	40.4	8.4
Petroleum and Gas	260	152	24.4	13.5	-3.3
Metal and Minerals	648	333	60.9	29.8	-4.1
Labor intensive	3	41	0.3	3.7	17.6
Machinery and Electronics	9	15	0.9	1.4	3.1
Other manufactures	20	126	1.9	11.3	12.1
Colombia					
Total - All commodities	4,268	11,873	100.0	100.0	6.6
Agriculture	3,301	3,675	77.4	31.0	0.7
Petroleum and Gas	94	3,107	2.2	26.2	24.4
Metal and Minerals	158	1,349	3.7	11.4	14.4
Labor intensive	299	923	7.0	7.8	7.3
Machinery and Electronics	70	446	1.6	3.8	12.3
Other manufactures	346	2,373	8.1	20.0	12.8
Ecuador					
Total - All commodities	2,560	5,254	100.0	100.0	4.6
Agriculture	936	2,819	36.6	53.7	7.1
Petroleum and Gas	1,527	1,886	59.6	35.9	1.3
Metal and Minerals	7	28	0.3	0.5	9.5
Labor intensive	17	74	0.7	1.4	9.7
Machinery and Electronics	25	33	1.0	0.6	1.8
Other manufactures	49	414	1.9	7.9	14.2
Peru					
Total - All commodities	3,579	6,181	100.0	100.0	3.5
Agriculture	690	1,940	19.3	31.4	6.7
Petroleum and Gas	751	415	21.0	6.7	-3.6
Metal and Minerals	1,552	2,342	43.4	37.9	2.6
Labor intensive	225	452	6.3	7.3	4.5
Machinery and Electronics	36	32	1.0	0.5	-0.8
Other manufactures	325	1,000	9.1	16.2	7.3
Venezuela					
Total - All commodities	20,653	24,194	100.0	100.0	1.0
Agriculture	152	612	0.7	2.5	9.1
Petroleum and Gas	19,471	19,777	94.3	81.7	0.1
Metal and Minerals	701	1,219	3.4	5.0	3.5
Labor intensive	3	96	0.0	0.4	24.1
Machinery and Electronics	36	109	0.2	0.5	7.3
Other manufactures	290	2,380	1.4	9.8	14.1

Source: UN Trade database

Manufactured exports are especially important to overall economic performance, since they are more likely than natural resource exports to convey to an economy the kinds of benefits described above. Of particular interest are non-primary based manufactured exports (i.e.,

excluding manufactured products like diamonds and plywood that are dependent mainly on natural resource endowments).[1] In the following analysis, we examine the growth rate of non-primary manufactured exports weighted by the share of these exports in total GDP. This weighting procedure corrects for the problem that can arise when sectors with very small amounts of manufactured exports can record very high growth rates, but the actual contribution to GDP may be very small. The weighted growth rate shows the contribution of export growth in each category to GDP in a given year.

Table 3: Developing Country Exporters of Non-Primary Manufactured Products Top 10 Performers, Andean countries, and Central American countries 1970-96 *

Rank	Country	Non-Primary Manufactured*** Export Growth Rate **	Average Growth Rate of Real GDP Per Capita (PPP$)
1	Singapore	14.93	6.98
2	Taiwan	5.61	6.51
3	Hong Kong	5.58	5.63
4	Malaysia	4.73	5.40
5	Ireland	4.61	3.56
6	Korea	4.43	7.37
7	Mauritius	2.90	3.93
8	Hungary	1.95	1.55
9	China	1.91	5.01
10	Thailand	1.86	4.96
21	Philippines	0.77	1.02
22	Indonesia	0.64	5.13
16	Dominican Republic	1.10	2.13
24	Costa Rica	0.60	1.17
27	Jamaica	0.53	-0.27
32	El Salvador	0.44	0.48
39	Guatemala	0.35	0.74
50	Honduras	0.12	0.58
37	*Colombia*	*0.38*	*2.30*
45	*Peru*	*0.18*	*0.08*
46	*Venezuela*	*0.16*	*-0.54*
49	*Bolivia*	*0.15*	*0.71*
51	*Ecuador*	*0.12*	*1.63*

Notes:
* Sample includes 75 countries with 1990 population greater than 1 million and GDP per capita (PPP$) of less than $7,000 in 1970, except Venezuela with $7700.
** The non-resource based manufactured exports weighted growth rate is equal to the annual growth rate of those exports times their share in GDP in the previous year.
*** The non-resource based manufactured exports include commodities in SITC 5 through 8 except SITC 61, 63, 66, and 68.

[1] The non-resource based manufactured exports include commodities in SITC 5 through 8 except SITC 61, 63, 66, and 68.

Table 3 shows the top performers in the world in non-primary manufactured exports from among a group of 75 low and middle-income countries for the period 1970-96.[2] Note that the top ten manufactured export performers in the world (with the exception of Hungary) all recorded growth rates in *per capita* income of 3.6% or more over the 26-year period, placing them among the fastest growing economies in the world. It is here that we see the very strong relationship between manufactured exports and rapid economic growth. All of the rapidly growing Asian countries are in the top ten on this list except for Indonesia, which ranked 22nd. By contrast, the Andean countries ranked between 37th (Colombia) and 51st (Ecuador) out of the 75 countries on the list. Colombia had the best performance of the group, with the weighted growth rate of non-primary manufactured exports averaging 0.38 percent.

THE COMPOSITION OF EXPORTS

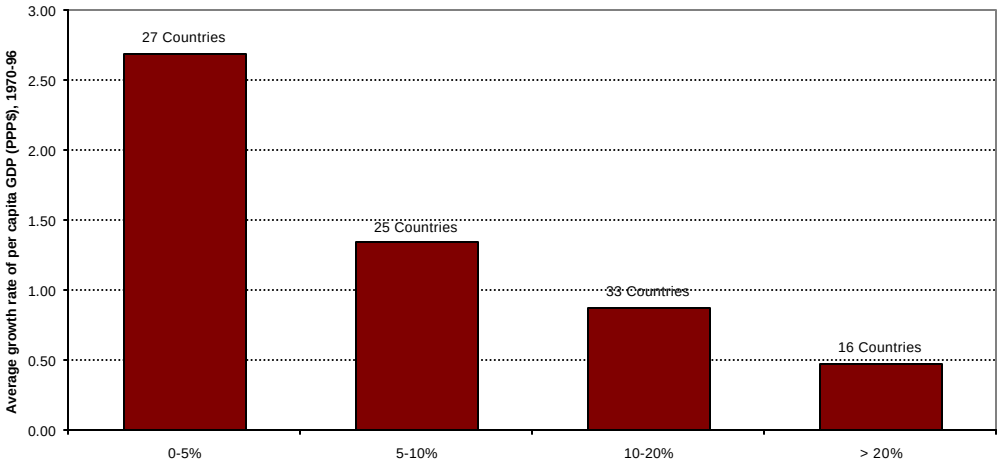
The slow growth in manufactured exports in the Andean region has resulted in continuing high dependence on natural resource exports in these countries and a lack of diversification of exports. There has been very little change in the composition of exports from the region during the last thirty years. This is in marked contrast to the resource rich countries of Southeast Asia, which also started with high dependence on natural resource exports but have been much more successful in diversifying their export base.

In general, countries with a high dependence on primary product exports have recorded relatively low rates of economic growth in recent decades. Sachs and Warner (1995) and others have found that natural resource-abundant economies have tended to grow *more slowly* than resource-rich economies since 1970, even when controlling for a large number of other variables.[3] For example, countries with primary exports valued at between 0 and 5 percent of GDP recorded growth per person of over 2.6 percent between 1970 and 1996, whereas countries with primary product exports equivalent to over 20 percent of GDP grew just 0.5 percent per person per year (see Figure 1). There are a few exceptions to this general trend, with natural-resource rich Malaysia, Thailand, Indonesia, Botswana, and Mauritius all recording relatively rapid growth. By-and-large, however, most natural resource rich economies have had disappointing performances.

[2] The sample includes all countries with 1990 population greater than 1 million and GDP per capita (PPP$) of less than $7,000 in 1970 for which trade and GDP data are available.

[3] Jeffrey Sachs and Andrew Warner, "Natural Resource Abundance and Economic Growth," HIID Development Discussion Paper No. 517A (October, 1995).

Figure 1: Natural Resource Abundance and Economic Growth, 1970-96



There are several possible explanations for this outcome. First, natural resource abundance often produces a "Dutch disease" phenomenon, in which a strong resource base causes an appreciation of the real exchange rate, thereby rendering unprofitable an export-oriented or import-competing manufacturing sector. Second, profitable investments in the resource sector itself tend to be limited in scope, so that after the resource sector is developed, it usually does not generate continuing marked improvements in technology and growth. Third, resource-abundant economies may provide greater opportunity and incentive for rent seeking and corruption, particularly if the resources are government owned, or heavily taxed. Fourth, resource abundant countries tend to follow boom-and-bust cycles in line with sharply fluctuating prices of their export commodities. Finally, long-term structural trends in commodity markets may have put primary producers at a disadvantage. Although there is considerable debate on these trends, the evidence appears to indicate both a gradual decline in commodity prices and slow growth in demand for primary products, especially since 1970.

Figures 2 through 4 show the composition of exports in 1980 and 1996 for the Andean countries, six Central American/Caribbean countries, and the four large Southeast Asian countries. At this aggregate level, there is little that distinguishes the three groups in terms of exports in 1980. In the Andes region, primary products accounted for an average of 94 percent of all exports in 1980 (the figures for each country were shown earlier in Table 2). In the four Southeast Asian countries, primary products accounted for 84 percent of all exports, whereas for the group of Central American countries the share of primary products was 79 percent.

Figure 2: Composition of exports for five Andean countries, 1980 vs. 1996

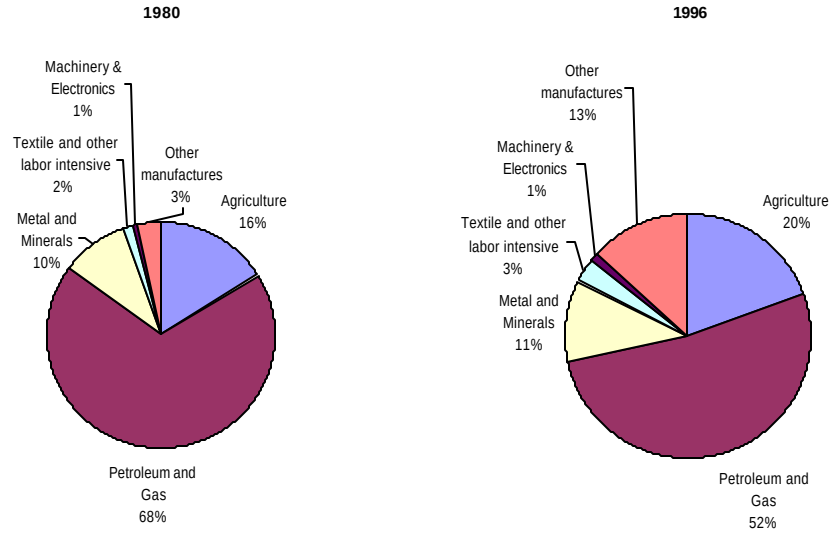


Figure 3: Composition of exports for six Central American countries, 1980 vs. 1996

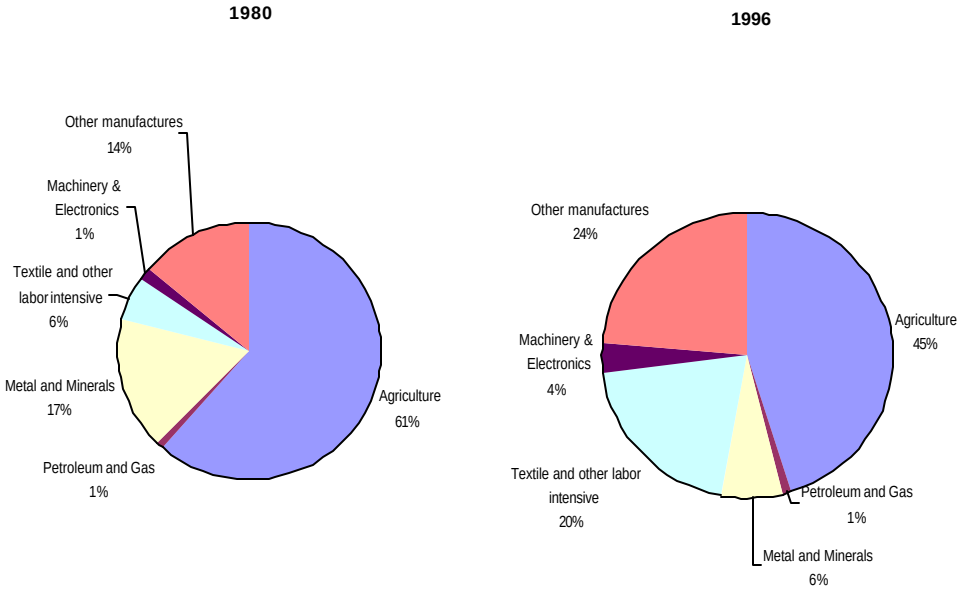
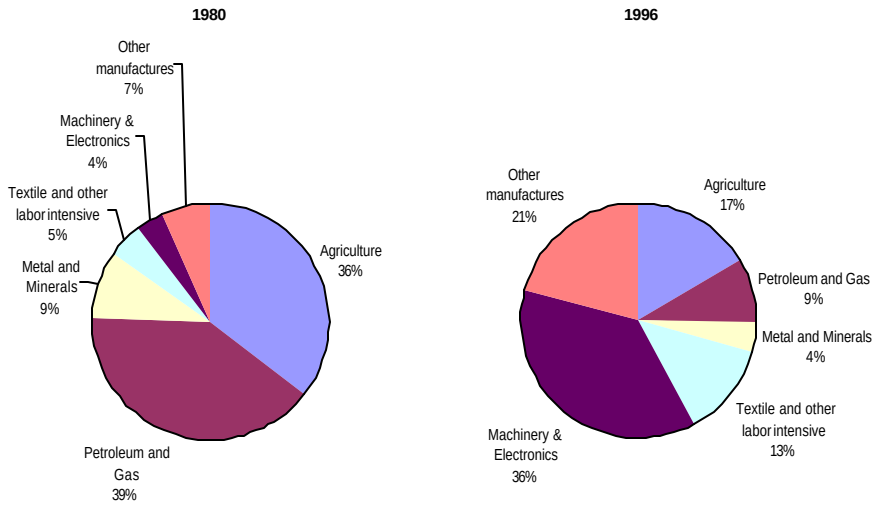


Figure 4: Composition of exports for four large ASEAN countries, 1980 vs. 1996



By 1996, there were sharp contrasts between the regions. The share of primary exports had declined only slightly in the Andes countries to 83 percent. Primary products continued to account for about 90 percent of exports in Venezuela and Ecuador, about 80 percent in Bolivia and Peru, and nearly 70 percent in Colombia. In Central America, the share of primary products had fallen to 52 percent, whereas in Southeast Asia, the share had fallen to just 30 percent. In Southeast Asia, machinery and electronics products accounted for 36 percent of exports, textiles and other labor-intensive products 13 percent, and other manufactured products 21 percent. In a period of just 16 years, the Southeast Asian countries evolved from heavy dependence on primary products to a very diversified export base.

Andean exports are not only very intensive in natural resources, but also remain heavily concentrated in a few of these products, which have not changed much in the last thirty years, as Table 4 shows. Four out of the top 8 export products in 1970 were still among the top 8 in 1996 for all countries except Venezuela, for which there were only three. Venezuela is the most extreme case of export concentration within the Andean Community, with more than 90 percent of its exports were due to oil until 1984. In fact, oil has become an important export for the five countries. It was the largest export for three Andean countries in 1996 and was among the top 8 exports of Bolivia and Peru; in 1970 it was Venezuela's top export, Colombia's second and Bolivia's third. Colombia and Ecuador have achieved a dramatic reduction in the importance of their top export in 1970, coffee and vegetables and fruit, respectively. But in large part, this is due to the increasing importance of oil, which is now their top export.

Table 4: Export Diversification

Table 4a: Herfindahl Index of Export Diversification

	Bolivia	Colombia	Ecuador	Peru	Venezuela
1970-79	0.273	0.342	0.360	0.184	0.840
1980-89	0.309	0.284	0.369	0.150	0.742
1990-96	0.128	0.110	0.255	0.135	0.607

Table 4b: Top Export Products (at 2-digit SITC level)

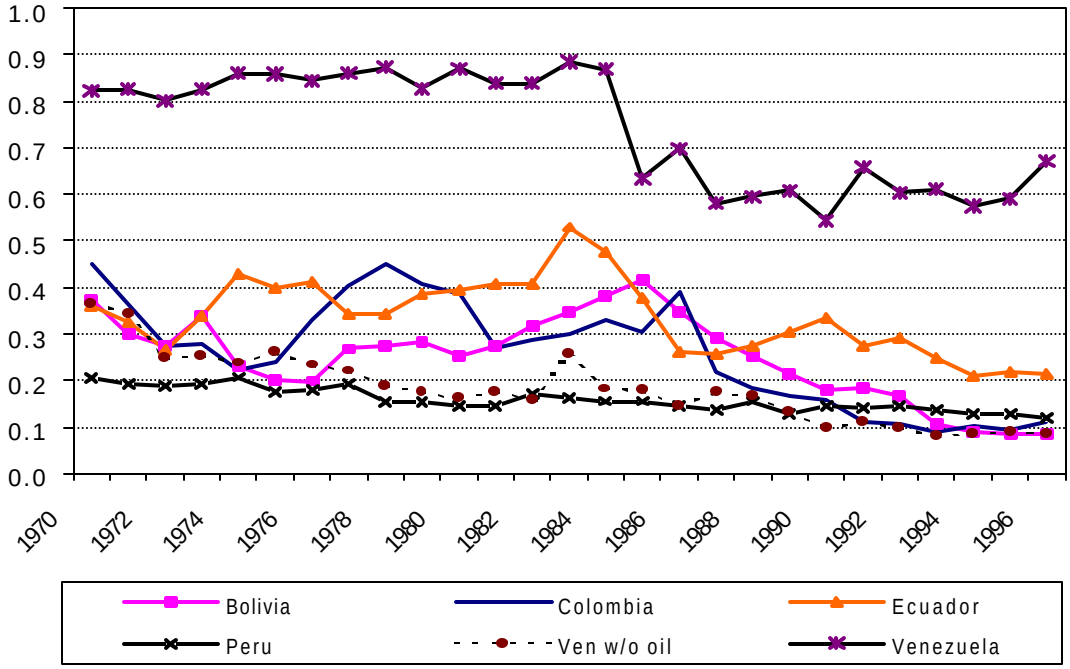
Bolivia 1996		Colombia 1996		Ecuador 1996		Peru 1996		Venezuela 1996	
sitc28	19.7%	sitc33	26.1%	sitc33	35.9%	sitc68	23.5%	sitc33	81.8%
sitc68	9.8%	sitc07	15.8%	sitc05	21.7%	sitc08	15.0%	sitc68	3.3%
sitc34	9.0%	sitc32	7.7%	sitc03	18.1%	sitc28	13.9%	sitc67	3.2%
sitc22	8.1%	sitc29	4.8%	sitc07	6.8%	sitc97	10.1%	sitc78	1.6%
Top4	**46.6%**		**54.4%**		**82.5%**		**62.5%**		**89.8%**
sitc08	7.8%	sitc05	4.5%	sitc97	2.5%	sitc33	6.7%	sitc51	1.3%
sitc24	6.6%	sitc84	4.3%	sitc29	2.1%	sitc84	4.5%	sitc66	1.0%
sitc79	5.5%	sitc89	3.1%	sitc08	1.2%	sitc07	4.3%	sitc58	0.8%
sitc33	4.5%	sitc66	3.1%	sitc63	1.1%	sitc03	3.6%	sitc69	0.7%
Top8	**71.0%**		**69.4%**		**89.4%**		**81.6%**		**93.6%**

Bolivia 1970		Colombia 1970		Ecuador 1970		Peru 1970		Venezuela 1970	
sitc28	47.5%	sitc07	66.4%	sitc05	45.0%	sitc68	28.2%	sitc33	90.5%
sitc69	38.0%	sitc33	7.5%	sitc07	39.4%	sitc08	27.8%	sitc28	5.6%
sitc33	4.4%	sitc26	5.4%	sitc06	4.5%	sitc28	19.6%	sitc34	0.6%
sitc52	2.7%	sitc05	2.8%	sitc03	2.9%	sitc06	6.5%	sitc07	0.6%
Top4	**92.5%**		**82.1%**		**91.8%**		**82.1%**		**97.3%**
sitc68	2.7%	sitc00	2.5%	sitc24	1.5%	sitc26	5.6%	sitc67	0.5%
sitc07	1.6%	sitc06	2.0%	sitc00	1.4%	sitc07	4.4%	sitc03	0.3%
sitc24	0.9%	sitc65	1.8%	sitc29	1.0%	sitc41	3.1%	sitc66	0.3%
sitc05	0.5%	sitc66	1.7%	sitc22	0.8%	sitc69	0.9%	sitc04	0.2%
Top8	**98.1%**		**90.0%**		**96.6%**		**96.0%**		**98.6%**

sitc03	Fish, crustaceans, mollucs, preparations ther
sitc05	Vegetables and fruit
sitc07	Coffee, tea, cocoa, spices, manufactures there
sitc08	Feeding stuff for animals, not incl. unmil. c
sitc28	Metalliferous ores and metal scrap
sitc33	Petroleum, petroleum products and related m
sitc68	Non-ferrous metals
sitc97	Gold, non-monetary

Source: Authors' calculations based on Statistics of Canada data

Figure 5: Herfindahl Index



It must be said, however, that there has been a dramatic increase in export diversification in almost every country in the group. The increase in export diversification can be easily gauged both from the evolution of the Herfindahl Index[4] depicted in Figure 5 and summarized in Table 4. Venezuela has the highest value of the index but has achieved a considerable reduction since the mid-80s. Although Venezuela's oil exports are very large relative to the rest of the economy, the non-oil exports are also high compared to other regional economies like Bolivia and Ecuador. The non-oil exports of Venezuela are also relatively more diversified compared to other countries in the group, as the evolution of the non-oil Herfindahl index shows in Figure 5. After a slight increase in the 80s, Bolivia reduced its index by half. Colombia seems the most successful country in the process of export diversification. It has managed to reduce its index by two-thirds while at the same time, it has increased its share of manufactured exports. Two groups of final products, articles of apparel and clothing accessories (SITC 84) and miscellaneous manufactured exports[5] (SITC 89) were among its top 8 export products. Ecuador has also achieved some reduction in its Herfindahl index in the 90s, but remains the second most concentrated country in the region. Peru is the country that has experienced a very small reduction in its index, but it was also the most diversified exporter in the group. In 1970, the top 4 exports accounted for more than 90 percent of total exports for Bolivia, Ecuador and Venezuela, and over 80 percent for Colombia and Peru. By 1996, they had fallen to less than 65 percent for Peru, Colombia, and Bolivia, while for Ecuador and Venezuela they remained above 80 percent.

[4] The Herfindahl Index is a typical measure of concentration. It is calculated as the sum of the squared shares of all the categories in which a variable is classified. An increase in its value denotes an increase in concentration.

[5] This includes, among others: books, printed matter, children's toys, jewelry, and musical instruments.

In addition to export diversification, some of the Andes countries have improved their export competitiveness substantially. Table 5 shows that the Andes, especially Bolivia and Ecuador, have increased their exports share in dynamic commodities, which have increasing share on the world trade. For example, Bolivia's dynamic exports have risen from only 4% of total exports in 1985 to about 25% in 1996. The major rising star (commodity that has rising increasing share in country's exports and is in dynamic demand on the world import market) is the miscellaneous manufactured articles (SITC 89). Its share has increased from less than 1% to 17.5% of the total exports between 1985 and 1996. The second fastest growing export commodity for Bolivia is the articles of apparel and clothing. Among the Andes, Ecuador has the largest share of dynamic exports (30%) in total exports in 1996. However, most of this improvement comes from a single commodity: fish, crustaceans and molluscs, and preparations thereof (SITC 03). The fish exports have become more than a quarter of total exports (26.3% of total) in 1996. Peru has made significant progress in shifting the export structure toward dynamic commodities. The major rising star for Peru is the articles of apparel and clothing (SITC 84). The share of apparel and clothing exports has increased from less than 1% in 1985 to 7% in 1996. Venezuela and Colombia, on the other hand, have made very little progress in positioning their exports in dynamic commodities. Venezuela, for example, has only 7% of the exports in dynamic category. All countries have still a very large proportion of exports in stagnant commodities. Therefore, the prospect for an export-led economic growth boom under the existing commodity composition are very little. These countries has to identify and encourage potential rising stars in the exports. The Andes economies need not only further diversification but also need to concentrate in dynamic commodities.

Table 5 : Competitiveness Matrix on Market Share, 1985-96 (% of 1996 Exports)

	*Stagnant Commodities **	*Dynamic Commodities ***
Bolivia		
Market share gains	**51.6**	**24.5**
	(Declining stars)	*(Rising stars)*
Market share losses	**23.6**	**0.3**
	(Retreats)	*(Missed opportunities)*
Total in 1996	*75.2*	*24.8*
Total in 1985	*96.1*	*3.9*
Colombia		
Market share gains	**44.7**	**9.4**
	(Declining stars)	*(Rising stars)*
Market share losses	**40.7**	**5.2**
	(Retreats)	*(Missed opportunities)*
Total in 1996	*85.5*	*14.5*
Total in 1985	*91.9*	*8.1*
Ecuador		
Market share gains	**34.8**	**29.4**
	(Declining stars)	*(Rising stars)*
Market share losses	**35.6**	**0.2**
	(Retreats)	*(Missed opportunities)*
Total in 1996	*70.4*	*29.6*
Total in 1985	*87.1*	*12.9*
Peru		
Market share gains	**26.3**	**9.6**
	(Declining stars)	*(Rising stars)*
Market share losses	**53.7**	**10.4**
	(Retreats)	*(Missed opportunities)*
Total in 1996	*80.0*	*20.0*
Total in 1985	*92.5*	*7.5*
Venezuela		
Market share gains	**85.0**	**4.4**
	(Declining stars)	*(Rising stars)*
Market share losses	**8.1**	**2.5**
	(Retreats)	*(Missed opportunities)*
Total in 1996	*93.1*	*6.9*
Total in 1985	*97.6*	*2.4*

Notes:
* Commodities with a negative change over time in percentage of the world imports are stagnant commodities.
** Commodities with a positive change over time in percentage of the world imports are dynamic commodities. Imports of dynamic commodities have increased faster than total imports
a) Rising Stars: commodities that have rising share in country's exports and are in dynamic demand on the import market.
b) Declining Stars: commodities that have rising share in country's exports and are in stagnant demand on the import market.
c) Missed Opportunities: commodities that have declining share in exports and are in dynamic demand on the import market.
d) Retreats: commodities that have declining share in country's exports and are in stagnant demand on the import market.

POLICIES TO SUPPORT MANUFACTURED EXPORTS

How were the Asian countries able to generate such rapid growth in manufactured exports, while other countries (including those in the Andes) were left behind? The basic set of macroeconomic and trade related policies that are needed to support manufactured exporters include the following:

- adjusting and managing the exchange rate to establish and then maintain the profitability of export industries;
- keeping domestic inflation (and therefore production costs) under control through prudent fiscal and monetary policies;
- reducing import tariffs and removing import quotas for exporters on capital and intermediate goods;
- building appropriate infrastructure to support exporters (and business more generally), especially ports, roads, power, and telecommunication facilities;
- strengthening bureaucratic systems, especially customs administration, in order to remove unnecessary regulations, reduce waiting times, and moderate corruption;
- developing appropriate education and training institutions to provide the workforce with basic skills.

The basic challenge for developing countries is to somehow overcome the policy and structural obstacles to exports and create an environment that will foster links between domestic and foreign firms in order to gain access to new technologies and dynamic production processes. The policies listed above are the first steps in that process. However, few countries—even the most successful ones—are able to fully introduce all of these changes quickly. For a variety of political and bureaucratic reasons, most countries—even the successful ones—either cannot or will not quickly introduce all of these reform measures. Even where a developing country government might wish to introduce these changes, full implementation of some of them (e.g., improved infrastructure, bureaucratic systems, and education) would take many years.

The successful manufactured exporters in Asia and elsewhere managed to connect to global markets and grow rapidly *despite* significant weaknesses in their economies. They did so by developing special facilities designed to support export development. These facilities took a variety of forms, including bonded warehouses,[6]), duty exemption systems, and duty drawback facilities. At the core of each of these platforms is a mechanism that allows exporters to import capital and intermediate goods without paying import duties. Some facilities (such as EPZs) also offer superior infrastructure and streamlined bureaucratic systems (especially customs clearance).

[6] Bonded warehouses are essentially single-factory EPZs. Approved warehouses, usually with a customs officer stationed at the site, can receive duty free imports of capital and intermediate goods and benefit from expedited customs clearance procedures. Firms usually post a bond as a guarantee against any duties that might be applicable to imports that are diverted to the domestic market. For a more detailed discussion of these export facilities, see Steven Radelet, "Manufactured Exports, Export Platforms, and Economic Growth," HIID CAER project, August 1999.

Whatever their form, *the key point is that no developing country that has been successful in stimulating growth in manufactured exports has done so without relying on at least one (and usually more than one) of these kinds of institutions*. Malaysia relied heavily on EPZs, but also developed an extensive network of bonded warehouses and a duty exemption system. Indonesia initially relied primarily on duty exemptions and drawbacks, and more recently has been successful with bonded warehouses and some EPZs. China has relied almost exclusively on its special economic zones, which in many respects closely resemble EPZs. Mexico's maquiladoras are essentially bonded warehouses, but many of them choose to locate in industrial parks that offer infrastructure and services similar to EPZs. Thailand offers five different programs for exporters. Tunisia has relied almost exclusively on bonded warehouses, whereas Mauritius has relied on a variant of EPZs. Singapore and Hong Kong were essentially citywide EPZs. The key to manufactured export success was to initiate policy changes on the basic set of macroeconomic policies listed above, and at the same time develop an effective set of institutions to allow exporters to overcome remaining distortions and connect with foreign firms and global markets.

In the Andean region, macroeconomic instability in the 1980s and 1990s seriously undermined the prospects for foreign investment and growth in manufactured exports. No country—even with decent infrastructure and export institutions—can achieve export success in an environment of high rates of inflation and overvalued exchange rates.

One broad macroeconomic measure of the competitiveness of exporting firms (incorporating both exchange rate and inflation trends) is the *real exchange rate* (RER). This index is calculated as the ratio of a weighted average of the wholesale prices prevailing in each country's trading partners (converted to domestic currency by the exchange rate) to domestic production costs (approximated by the domestic consumer price index). An increase in this ratio (referred to as a depreciation of the RER) means that foreign prices, when converted by the exchange rate, are rising faster than domestic prices, providing a very rough indication of improved price competitiveness. Conversely, a decline in the ratio (an appreciation of the RER) indicates a loss of competitiveness, usually brought about by relatively rapid increases in domestic prices that are not compensated by currency depreciation or increases in world prices.

Table 6 shows trends in the real exchange rate from 1970 through 1999 in the five Andean countries and several other developing countries. In the 1970s, the changes in the RER were relatively small (except in Peru, which recorded a significant real depreciation). During this period, each of the Andean countries maintained their exchange rates in fixed parity against the U.S. dollar. In the 1980s, each of the Andean countries except Peru recorded very large real depreciations as a result of large nominal depreciations of the exchange rate. A similar pattern prevailed in the group of Central American countries shown in the table.

In the 1990s, however, each Andean country recorded very large real *appreciations* of their currencies. These appreciations indicate significant erosion of the competitiveness of manufacturing firms in the region. During the 1990s, while world prices for traded goods rose only slightly, production costs for firms in the Andean region rose substantially, undermining the ability of these firms to sell profitably on world markets. The real appreciations were particularly large for Colombia, Peru, and Venezuela. Interestingly, the Central American countries also recorded significant real appreciations during the 1990s. In Southeast Asia, each country recorded a real appreciation of about 20% between 1990 and 1996, but then recorded substantial real depreciations following the large exchange rate movements that accompanied the Asian financial crisis.

Table 6: Real Exchange Rates
(based on wholesale prices of major trading partners, 1990=100)

Bolivia	58.2	60.8	100.0	82.9	71.6	73.8	71.4	4.43	64.46	-28.61
Colombia	48.7	52.8	100.0	51.4	49.2	49.2	50.8	8.40	89.40	-49.21
Ecuador	55.8	45.7	100.0	68.5	55.4	59.6	73.4	-18.10	118.85	-26.56
Peru	57.3	103.8	100.0	26.4	23.1	25.8	25.3	81.10	-3.63	-74.75
Venezuela	43.8	49.9	100.0	81.1	47.0	40.4	38.5	13.91	100.54	-61.51
Average	*52.8*	*62.6*	*100.0*	*62.1*	*49.3*	*49.7*	*51.9*	*18.0*	*73.9*	*-48.1*
Costa Rica	46.1	57.7	100.0	80.3	71.6	71.2	69.6	25.28	73.26	-30.37
El Salvador	131.6	127.6	100.0	58.0	53.0	50.9	50.3	-3.05	-21.63	-49.72
Guatemala	51.6	55.5	100.0	58.4	51.5	53.1	55.3	7.46	80.20	-44.71
Honduras	46.1	57.2	100.0	81.9	63.7	58.2	55.4	24.18	74.76	-44.56
Jamaica	56.2	62.1	100.0	68.9	59.1	56.4	55.7	10.54	61.07	-44.32
Average	*66.3*	*72.0*	*100.0*	*69.5*	*59.8*	*58.0*	*57.3*	*12.9*	*53.5*	*-42.7*
Indonesia	47.9	53.1	100.0	80.4	126.3	130.9	99.2	10.98	88.30	-0.80
Malaysia	64.3	79.7	100.0	77.6	106.1	101.8	94.1	23.97	25.51	-5.90
Philippines	81.6	72.0	100.0	56.4	74.5	67.4	61.2	-11.78	38.95	-38.78
Thailand	72.7	87.8	100.0	80.1	123.8	96.0	92.1	20.82	13.86	-7.88
Average	*66.6*	*73.1*	*100.0*	*73.6*	*107.7*	*99.0*	*86.7*	*11.0*	*41.7*	*-13.3*

The Andean countries have made reasonably good progress in reducing nominal tariff rates, as shown in Table 7. According to data from the World Bank, weighted average tariff rates for imported manufactured products ranged between 9.7 percent in Bolivia and 12.5 percent in Peru.[7] Compared to many countries, these nominal tariff rates are not especially high. Nevertheless, they are high enough to significantly reduce the profitability of exporters. Exporters need to be able to import intermediate products at zero duty in order to compete effectively. Note that statutory tariff rates in several of the Southeast Asian countries are much higher than in the Andean region. Exporters in these countries, however, pay zero duty on imports, since they are able to take advantage of bonded warehouses, EPZs, and effective duty exemption systems. In fact, in most of the Asian countries, domestic suppliers of exporters are also able to use these duty free facilities so that they can better service exporting firms. In addition to duties, many imports to the Andean region are subject to quantitative restrictions and other constraints that impede the ability of exporters to import intermediate goods quickly and easily.

[7] The tariff rates are weighted by the value of imports in each category. The source is the World Bank, *1999 World Development Indicators.*

Table 7: Tariff Barriers on Manufactured Products in 1998 (%)

Country	Mean tariff	Weighted mean tariff	Standard deviation of tariff rates
Bolivia	9.6	9.7	1.4
Colombia	11.4	10.5	6.3
Ecuador	11.2	10.4	6.3
Peru	13.1	12.5	2.7
Venezuela	11.9	10.9	6.1
Dominican Republic *	14.2	14.5	8.9
El Salvador	4.4	3.8	7.3
Guatemala	8.3	5.1	10.1
Indonesia *	13.2	14.9	15.7
Malaysia *	12.0	9.4	17.2
Philippines	10.3	9.1	8.3
Thailand *	47.2	43.7	26.2

Source: World Development Indicators, the World Bank, 1999.

Note: * Data for Dominican Republic and Malaysia are for year 1997, Indonesian's data are for year 1996, and Thailand's for year 1993.

In order for Andean exporters to be able to compete with other countries in the future, they will need:

- a stable macroeconomic environment with relatively low and stable inflation and competitive real exchange rate.
- facilities that can assure them of fast and reliable access to intermediate inputs at prices prevailing on world markets. In particular, the Andean countries need to develop EPZs and other export platforms to encourage manufactured exports.
- an improved infrastructure (e.g. ports, roads, telecommunication facilities) and a skilled labor force.
- a higher institutional quality, especially better customs administration and lower corruption level.