Trade liberalization and Export Variety in Latin America: Is there a North-South, South-South divide?

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1   Introduction

A greater level of export diversi...cation or variety could be bene...cial for various reasons: ...rst, from a short-term, macroeconomic point of view, a more diversi-...ed export structure would imply that the economy will be less subject to terms of trade shocks originated by export price volatility. Second, and perhaps more important, recent models of endogenous growth have shown that production and export diversi...cation is a major determinant of productivity growth which in turn is a key force behind long-term growth in income per capita. In this regard, there are already some empirical studies that found a positive relation-ship between export variety and the level of income per capita across countries (see Funke and Ruhwwedel (2001)) or between export variety and total factor productivity (Feenstra et al. (1999)).

In this paper we use a theoretically founded measure of export variety, ...rst developed in Feenstra (1994), to assess the dynamics of export variety for sev-eral LA countries between 1991 and 2004. These economies have implemented several initiatives at trade liberalization in the last 15 years which have had a signi...cant impact on export and import ‡ows. Still the analysis of the e¤ect of these policies on export diversi...cation is scant and the few available papers

(i.e. Sanguinetti *et al* (2004), World Bank (2002)) used ad-hoc measures of export specialization (Herphindal or Gini indicators). Feenstra and Kee (2006) do employ Feenstra (1994) methodology to measure export variety for Mexico but they do it using only exports to the US market. Though this may not represent a serious problem for the case of this country (as 80% of Mexico's exports go to US) it may be a serious bias in the case of other LA economies where the share of shipments to that market is much lower. Thus in our empirical analysis we use export data covering not only US exports but also EU and other major LA economies. We decompose the overall export variety indicator in terms of these three major export destinations.

The change in the overall level of export variety and its decomposition will help us to investigate some hypotheses regarding the impact of trade liberalization on export variety. First, as Latin American economies are abundant in natural resources we would expect that traditional comparative advantage forces will imply that, following the launching of liberalization initiatives, these economies would tend to specialize in the production and exports of natural resources-intensive goods. If these goods are less prompt to increases in product variety then these economies will exhibit a much slower pace of growth in export variety compare to pre-liberalization periods or compare to other developing economies like the East Asian countries that have integrated to the world but with a di¤erent comparative advantage pattern (manufacturing). Also this trend in export variety (specialization in natural resources) should be stronger with respect to North countries (where the indicated di¤erence in factor endowments is much more signi…cant) relative to south countries destinations. Thus, in principle south-south export ‡ows could exhibit a much larger level (and rate of growth) of export variety.

The rest of the paper is organized as follows. Section 2 describes the theoretical background linking export variety with productivity growth. In this context we evaluate the impact of trade liberalization initiatives. Section 3 describes the

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methodology we use to measure export variety as developed in Feenstra (1994) and Feenstra and Kee (2004) and the results of the estimations. We conclude in section 4.

2 Theoretical background: trade liberalization, export variety and productivity growth.

Why is it important to look at the dynamic of production and export variety? Recent endogenous growth models (Grossman and Helpman (1991)) have emphasized that sustained increase in income per capita could be reached through a process of endogenous innovation that, through the creation of new inputs, increases productivity and sustain private sector incentives to save and invest. Thus, these models suggest that productivity growth should be directly related with the path of changes in production variety. The role of production and export variety as a determinant of income per capita has received some empirical attention recently. In this regard Funke and Ruthwedel (2001) have showed that higher level of income per capita across OECD countries is associated with greater level of export variety relative to the US. Consistent with this ...nding, Hummels and Klenow (2005) have shown that new export varieties account for 60% of the greater export of richer and larger countries as compared to developing economies. Evidence on a positive and signi...cative association between export variety and total factor productivity has also been provided by Funke and Ruthwedel (2001) and Feenstra et al (1999).

The key question is how trade liberalization could a¤ect the dynamic of production and export variety and productivity growth. It is clear that lower tari¤ allows for cheaper inputs and this could bring in cost reduction in production as a consequence of the utilization of new inputs. But also trade liberalization could specialize the economy in the production of comparative advantage sectors which, if they are concentrated in primary goods, may reduce the overall level of product variety. In fact, Feenstra et al (1999) have found that in Korea

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and Taiwan primary sectors have a lower rate of increase in export variety and its correlation with total factor productivity is much weaker.

To gain a better understanding of the channels trough which trade liberalization a¤ects production variety and productivity growth we will present a simple model which is an adaptation of those discussed in Jones (1998) and in Funke and Ruhweddel (2001). Let assume the case of a small open economy with two types of goods: one exportable good Y that is produced by the domestic economy and an importable intermediate input (capital) that it is imported. Thus by construction we are assuming the case of a small open economy that has a comparative advantage in the ...nal consumption good while is has a comparative disadvantage in the production of intermediate inputs. The domestic output Y is produced using labor L_y and the di¤erentiated capital goods, x_j which, as indicated, are imported. Aggregate production of the exportable ...nal good (in units of the imported good which is the numeraire of the economy) is given by the following function,

$$Y(t) = P_x L_y^{1-\alpha} \int_0^{n(t)} x_j^{\alpha} dj \tag{1}$$

Where P_x indicates the terms of trade. The the capital stock at time t equals,

$$\int_0^{n(t)} x_j dj = K(t) \tag{2}$$

Thus the total number of di¤erentiated intermediate goods used in production is equal to the total supply of capital. As all capital input varieties are treated symmetrically, in an equilibrium $x_j = x$ for all j. Thus the amount used of each intermediate input is given by,

$$x = \frac{K}{n} \tag{3}$$

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Replacing (3) in (1) we can rewrite the aggregate production function of the exportable good as,

$$Y(t) = P_x n(t) L_y^{1_i \alpha} x^{\alpha}$$

$$Y(t) = P_x (n(t) L_y)^{1_i \alpha} K(t)^{\alpha} \qquad (4)$$

Thus the aggregate production takes the familiar Cobb Douglas form and the degree of product variety, n, enters the production function as labor augmenting technology and therefore is the ultimate engine of growth. Capital is accumulated following a simple rule,

$$K(t) = \frac{s_K}{1 + \tau} Y(t) \ _i \ \delta K(t) \qquad (5)$$

In (5) we explicitly recognize that the importation of capital inputs are subject to a tari¤ rate τ so savings are not converted one to one into capital. This depends on the tari¤ rate.

Finally, we have assumed that in this small open economy the possibility to innovate is associated with the incorporation of newer imported capital good varieties. Though these goods are entirely produced in foreign (developed) countries the possibility to use them as inputs in the domestic economy implies an adaptation activity whose determinants are the current level of input variety of the country ($n(t)$), the world frontier level of product variety ($A(t)$), a productivity parameter ϕ (possibly re‡ecting the quality of local labor for adaptation/innovation activities), and also how much resources (labor) are allocated to this activity $L \ _i \ L_y$ (as apposed to pure production, L_y). Formally, the overtime expansion of capital input varieties is determined by the following condition,

$$\underset{\sim}{n}(t) = \phi(L \ _i \ L_y) A(t)^{\gamma} n(t)^{1_i \ \gamma} \qquad (6)$$

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Dividing (6) by n we obtain,

$$\frac{\overset{\cdot}{n}}{n} = \phi(L - L_y)(\frac{A}{n})^{\gamma} \tag{7}$$

Equation (7) makes clear that the growth rate of capital input variety is positively associated with the ratio $\frac{A}{n}$. The closer the small country is to the world frontier variety, the smaller the indicated ratio and the smaller the growth rate of n. Of course, as indicated, the rate of innovation could be accelerated if more labor is allocated to these activities. Finally we will assumed that the world frontier ($\frac{A}{A}$) expands at an exogenous and constant rate equal to g.

We will solve the model for the steady state solution. In order to obtain this solution (which implies a constant rate of growth for income per capita) we will assume that the labor force is constant and equal to L. It is clear from (7) that in the steady state the rate of growth for n will equal the exogenous rate of world innovation g. From (4) and (5) we can also conclude that this rate of growth will also apply to the level of output Y and the capital stock K. Normalizing the size of the labor force to 1, the expression for the level of income per capita in the steady state is given by,

$$y^* = P_x^{\frac{1}{1-\alpha}} \underbrace{(\frac{s}{(1+\tau)\delta})^{\frac{\alpha}{1-\alpha}} L_y^*}_{} \underbrace{(\frac{\phi(1-L_y^*)}{g})^{\frac{1}{\gamma}} A^*}_{} \tag{8}$$

Where L_y^* is the optimal steady state fraction of labor employed in production while $1 - L_y^*$ correspond to the fraction employed in the innovation activities. From (8) we see clearly the two types of determinants of long-term income. On one hand, the ...rst term summarizes the usual factor accumulation determinants which main variable is the saving rate. The second term represent the "new growth theory" forces focusing on innovation (technology adaptation) e¤orts. We can ask how trade liberalization would a¤ect long term income per capita and to what extend this policy has any e¤ect on the level of capital

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input variety. If trade liberalization implies the reduction of import tariffs affecting capital imports we can clearly see that there is going to be a positive effect through a larger rate of (corrected by import duties) capital accumulation. There will be an additional indirect effect through a higher Ly which (we show in the appendix) depends negatively on τ. This last effect will in turn reduce capital input variety (and productivity) as less labor is allocated to technology adaptation. Still the net impact on income per capita is still positive.

Suppose alternatively that integration to the world economy implies a higher price for the exportable goods obtained by this country (larger Px). Again this shock will have a positive direct effect on the level of income per capita (measured in terms of importable) and also an indirect positive effect on production through the increased allocation of labor to production (higher Ly) which nevertheless will also imply an indirect negative impact through the long run level of capital import variety and productivity. Still as before the net effect on income per capita is positive.

Thus we conclude that the two policy shocks have an implication that long term income per capita raises but mainly through an increase in factor accumulation and less trough innovation measured by capital input variety. This is because this small country has no comparative advantage in the production of these capital goods; on the contrary the economy imports these inputs. The same conclusion would have been obtained in a less extreme model where we allow for local production of intermediate capital inputs but we assume the country have comparative advantage in the other sector.

We can use the above model and its implications to motivate the analysis of the dynamics of export variety in Latin America. Suppose these countries have comparative advantage in natural resource intensive goods that use as an inputs capital goods which are importable goods for these economies. This would imply that production and exports variety would increase less for these countries as compare to, say, Asian economies that have a comparative advantage in manufacturing. Furthermore if comparative advantage with respect with

the world economy pushes these economies toward primary goods and this reduces the growth rate of export varieties, it could be the case that trade among them would imply the opposite trend: higher increase in product variety and in productivity. We will look at this evidence in next section.

3 Measuring export variety

There are several alternative ways to measure export diversi...cation or variety. For example, we can use standard indicators of concentration like the Hephindhal, Theil indexes or the Gini coe¢cient. Still, these indicators have a loose link to theory. In particular it is di¢cult to associate the changes in those indexes with welfare gains for consumers or productivity gains for ...rms. Because of this reason we choose to follow Feenstra (1994) methodology which propose a variety index that is directly derived from price index theory so it has a direct link to consumer prices or ...rm cost. We explain this methodology next.

3.1 The Feenstra (1994) variety index

The index proposed by Feenstra assumes that new goods appear within a CES aggregator function (i.e. a production function for ...rms, expenditure function for consumers or a production possibility frontier for an economy). Suppose that the elasticity of substitution between goods is $\sigma > 1$. The total reduction in costs due to a new input (increase in welfare due to a new product variety) can be compute in the following way. First suppose that the set of inputs available to the ...rm each period is $I_t = t = 0, 1$, with the common set $I = (I_0 \setminus I_1) \varsubsetneq \phi$. Feenstra (1994) shows that costs fall due to the appearance of new inputs by the amount,

$$(\frac{\lambda_1(I)}{\lambda_0(I)})^{\frac{1}{\sigma_i \ 1}} \tag{1}$$

where the values of $\lambda_t(I)$ are constructed as,

$$\lambda_t(I) = \frac{\sum_{i=I} p_{it}x_{it}}{\sum_{i=I_t} p_{it}x_{it}} = 1 - \frac{\sum_{i=I_t, i\notin I} p_{it}x_{it}}{\sum_{i=I_t} p_{it}x_{it}}, t = 0,1 \qquad (2)$$

In these expressions, I_t denotes the set of inputs (consumer goods) available in periods $t = 0,1$, at prices p_{it} and with cost-minimizing (welfare-maximizing) quantities x_{it}. New goods will be in set I_1 but not in I whereas disappearing goods are in I_0 but not in I. From (2) we see that the index $\lambda_t(I)$ can be interpreted as the period t expenditure on the set of common goods I relative to total expenditure in that period. The presence of new goods in period t will imply that $\lambda_t(I) < 1$. The greater the quantity of new goods in period t the lower the value of $\lambda_t(I)$.

We can rewrite equation (2) so that we can make comparisons of export variety across countries and time. For doing that we need a consistent comparison set that does not vary itself across countries and time. We will de...ne this comparison set as the sum of worldwide imports of US, EU and Latin America averaged over the 1990-2004 period. Thus our operational measure of export variety will de...ned as,

$$Variety_t^c = \frac{\sum_{i\in I_t^c} p_i x_i}{\sum_{i\in I_t^W} p_i x_i} \qquad (3)$$

where I_t^c denotes the set of varieties exported by country c to the world, while $p_i x_i$ denotes the value of world imports of variety i. I_t^W denotes the set

of varieties imported from all origins by the world economy (US, EU and Latin America). Thus the measure of export variety can be interpreted as the share in total world imports from products that are exported by country c.

3.2 Decomposition of the variety Index

It is easy to see that expression (3) can be written as,

$$\frac{\sum_{i\epsilon I_t^c} p_i^\square x_i^\square}{\sum_{i\epsilon I_t^W} p_i^\square x_i^\square} = \frac{\sum_{i\epsilon I_t^{c,US}} p_i^\square x_i^\square + \sum_{i\epsilon I_t^{c,EU}} p_i^\square x_i^\square + \sum_{i\epsilon I_t^{c,LAT}} p_i^\square x_i^\square}{\sum_{i\epsilon I_t^W} p_i^\square x_i^\square} \qquad (4)$$

Diving and multiplying by total imports from each region we obtain,

$$\frac{\sum_{i\epsilon I_t^c} p_i^\square x_i^\square}{\sum_{i\epsilon I_t^W} p_i^\square x_i^\square} = \frac{\sum_{i\epsilon I_t^{c,US}} p_i^\square x_i^\square \frac{\sum_{i\epsilon I_t^{US}} p_i^\square x_i^\square}{\sum_{i\epsilon I_t^{US}} p_i^\square x_i^\square} + \sum_{i\epsilon I_t^{c,EU}} p_i^\square x_i^\square \frac{\sum_{i\epsilon I_t^{EU}} p_i^\square x_i^\square}{\sum_{i\epsilon I_t^{EU}} p_i^\square x_i^\square} + \sum_{i\epsilon I_t^{c,LAT}} p_i^\square x_i^\square \frac{\sum_{i\epsilon I_t^{LAT}} p_i^\square x_i^\square}{\sum_{i\epsilon I_t^{LAT}} p_i^\square x_i^\square}}{\sum_{i\epsilon I_t^W} p_i^\square x_i^\square} \qquad (5)$$

and groupings terms,

$$\frac{\sum_{i\epsilon I_t^c} p_i^\square x_i^\square}{\sum_{i\epsilon I_t^W} p_i^\square x_i^\square} = \frac{\sum_{i\epsilon I_t^{c,US}} p_i^\square x_i^\square}{\sum_{i\epsilon I_t^{US}} p_i^\square x_i^\square}\frac{\sum_{i\epsilon I_t^{US}} p_i^\square x_i^\square}{\sum_{i\epsilon I_t^{W}} p_i^\square x_i^\square} + \frac{\sum_{i\epsilon I_t^{c,EU}} p_i^\square x_i^\square}{\sum_{i\epsilon I_t^{EU}} p_i^\square x_i^\square}\frac{\sum_{i\epsilon I_t^{EU}} p_i^\square x_i^\square}{\sum_{i\epsilon I_t^{W}} p_i^\square x_i^\square} + \frac{\sum_{i\epsilon I_t^{c,LAT}} p_i^\square x_i^\square}{\sum_{i\epsilon I_t^{LAT}} p_i^\square x_i^\square}\frac{\sum_{i\epsilon I_t^{LAT}} p_i^\square x_i^\square}{\sum_{i\epsilon I_t^{W}} p_i^\square x_i^\square} \qquad (6)$$

and we arrive at,

$$\frac{\sum_{i\epsilon I_t^c} p_i^\square x_i^\square}{\sum_{i\epsilon I_t^W} p_i^\square x_i^\square} = VI_C^W = VI_C^{US} shM^{US} + VI_C^{EU} shM^{EU} + VI_C^{LAT} shM^{LAT} \qquad (7)$$

where $VI_C^J \quad J = W, US, EU, LAT$ denotes export variety index with respect to world, US, EU and Latin America, respectively. On the other hand,

$$shM^{US} = \frac{\sum_{i\epsilon I_t^{US}} p_i^\square x_i^\square}{\sum_{i\epsilon I_t^W} p_i^\square x_i^\square}; shM^{EU} = \frac{\sum_{i\epsilon I_t^{EU}} p_i^\square x_i^\square}{\sum_{i\epsilon I_t^W} p_i^\square x_i^\square}; shM^{LAT} = \frac{\sum_{i\epsilon I_t^{LAT}} p_i^\square x_i^\square}{\sum_{i\epsilon I_t^W} p_i^\square x_i^\square} \qquad (8)$$

Thus the world-wide export variety index of country c can be expressed as a weighted average of the export variety index corresponding to three di¤erent markets: US, EU and Latin America.

3.3 The dynamic of export variety in Latin America

Table 1 presents the estimation of the overall export variety index for a set of Latin American countries[1]. As we see there exists an important heterogeneity among these economies with respect to their export variety level. We can identify three groups of countries. The ...rst group contains those countries that have (on average) relative high export variety. In this group are Brazil and Argentina with an average export variety of 38.3 % and 25 %, respectively). The second group is formed by those countries with relative moderate level of the variety index. They are Venezuela, Colombia, Peru. Uruguay and Chile, whose indexes are 16 %, 14.1 %, 13 %, 11.7 % and 10.9 %, respectively. Finally, the third group is formed by those countries with a relative low export variety level. These countries are Ecuador, Bolivia and Paraguay (9.5 %, 8.5 % and 7.2 %, respectively). Notice that there is an important distance between the level of export variety of the high group and the level for the moderate-low groups.

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[1] All observations are 3-years moving averages.

Table 1. Overall Export Variety Index

Year	Argentina	Bolivia	Brasil	Chile	Colombia	Ecuador	Paraguay	Perú	Uruguay	Venezuela
1993-95	23.4%	7.1%	34.0%	10.0%	11.3%	8.2%	5.6%	7.7%	10.0%	15.1%
1994-96	24.7%	8.1%	36.2%	11.1%	12.1%	8.8%	6.6%	10.5%	11.4%	16.5%
1995-97	24.4%	8.3%	35.9%	11.1%	13.3%	9.2%	5.6%	13.1%	11.2%	17.1%
1996-98	25.1%	8.4%	34.9%	10.9%	13.9%	9.9%	6.2%	14.6%	10.9%	17.2%
1997-99	25.3%	8.9%	34.1%	10.9%	14.0%	10.3%	6.5%	14.0%	11.0%	16.2%
1998-00	26.3%	8.4%	37.4%	11.7%	14.7%	10.3%	7.2%	13.2%	10.8%	15.5%
1999-01	25.5%	8.8%	40.6%	11.3%	15.5%	9.5%	8.0%	13.4%	10.8%	15.4%
2000-02	25.5%	8.9%	42.3%	10.3%	16.7%	9.4%	8.3%	14.6%	11.6%	15.1%
2001-03	25.0%	9.0%	43.2%	10.3%	15.3%	9.4%	8.7%	14.5%	13.6%	15.3%
2002-04	24.5%	9.1%	44.0%	11.8%	14.5%	10.1%	9.2%	14.1%	15.7%	16.8%
Average	25.0%	8.5%	38.3%	10.9%	14.1%	9.5%	7.2%	13.0%	11.7%	16.0%
Annual Growth Rate (1993-2004)	0.51%	2.73%	2.86%	1.80%	2.77%	2.26%	5.49%	6.66%	5.03%	1.17%

We can also identify three groups depending on the growth performance of the export variety inicator. Peru, Paraguay and Uruguay has a relative high export variety growth between 1991 and 2004, with an average annual growth rate of 6.66 %, 5.49 % and 5.03 %, respectively. A second group with a relative moderate average annual growth are Brazil, Colombia, Bolivia, Ecuador and Chile, with an average annual growth rate of 2.86 %, 2.77 %, 2.73 %, 2.26 % and 1.80 %, respectively. Lastly, the low growth group is formed by Venezuela and Argentina, countries that show the lowest annual growth rate with 1.17 % and 0.51 %, respectively.

In Table 2 below, we combine the two classi...cations previously discussed to show the transition over time. Notice that most countries with a moderate export variety level have experienced rapid growth rates whereas Brazil and Argentina, with high export variety have shown a moderate and low annual growth rates, respectively. The most interesting combination is that of Peru and Uruguay experiencing high growth coming from a relatively middle export variety level.

Table 2 . Overall Export Variety Index (Level/Growth)

		Annual relative export variety growth		
		High	*Moderate*	*Low*
Annual relative export variety level	*High*		Brazil	Argentina
	Moderate	Peru and Uruguay	Chile and Colombia	Venezuela
	Low	Paraguay	Bolivia and Ecuador	

3.3.1 Export variety by destination

Tables 3 through 6 present the estimation of export variety by destination markets. As suggested by the theoretical framework, export variety of South American countries is higher within south American markets than with developed markets. When we analize the data estimated for each South American trading bloc separately, we ...nd that member countries' export variety within its block .

Table 3 shows that in CAN, the average export variety is 31.6%, with an average of 30.1% for CAN countries and 30.9% for MERCOSUR countries. The countries with the highest export variety are Brazil, Colombia and Argentina, with an average export variety of 54.3%, 48.5%, and 42.7%, respectively. Also, in this block the average export variety growth rate is 3.1%, with an average growth of 2.2% for CAN countries and 4.8% for MERCOSUR countries. The countries with the highest growth performance are Paraguay, Uruguay and Bolivia, with

an average annual growth rate of 8.2%, 5.5% and 4.3%, respectively. Venezuela appears as the only country in the sample that decline its export variety to this market, with an average annual decline of 1.6%.

Table 3. Export Variety in the Andean Community Market

CAN	Argentina	Bolivia	Brasil	Chile	Colombia	Ecuador	Paraguay	Perú	Uruguay	Venezuela
1993-95	33.8%	10.1%	50.1%	35.8%	38.3%	22.7%	5.2%	22.5%	13.4%	35.9%
1994-96	39.4%	12.0%	53.7%	41.1%	47.0%	23.4%	6.9%	25.2%	14.1%	38.7%
1995-97	40.4%	10.8%	53.9%	43.7%	48.7%	23.9%	8.4%	27.2%	15.6%	39.3%
1996-98	42.3%	11.3%	53.7%	44.1%	48.8%	23.5%	8.9%	29.6%	16.1%	38.8%
1997-99	43.1%	11.4%	53.2%	43.9%	48.5%	24.8%	8.4%	30.7%	18.2%	37.2%
1998-00	43.4%	11.8%	53.3%	44.6%	48.8%	24.1%	8.2%	31.7%	18.4%	35.9%
1999-01	44.9%	12.0%	54.0%	43.5%	49.6%	24.5%	9.0%	31.9%	19.7%	35.1%
2000-02	45.8%	13.7%	55.6%	42.3%	51.7%	23.9%	10.1%	33.7%	21.6%	34.7%
2001-03	46.7%	14.7%	57.0%	38.5%	51.9%	24.5%	10.0%	32.1%	21.8%	33.2%
2002-04	46.9%	14.8%	58.9%	38.8%	51.8%	25.8%	10.8%	30.8%	22.1%	31.2%
Average	42.7%	12.2%	54.3%	41.6%	48.5%	24.1%	8.6%	29.5%	18.1%	36.0%
Annual Growth Rate (1993-2004)	3.6%	4.3%	1.8%	0.9%	3.4%	1.4%	8.2%	3.5%	5.5%	-1.6%

In the MERCOSUR block, Table 4, the average export variety is smaller than for the CAN block (an average of 22.1%), with an average of 12.6% for CAN countries and 33.7% for MERCOSUR countries. The countries with the highest export variety are Brazil, Argentina and , with an average export variety of 54.3%, 48.5%, and 42.7%, respectively. Also, in this block the average export variety declined an annual rate of 3.7%, with an average annual declined of 3.4% for CAN countries and a decline of 3.3% for MERCOSUR countries. The countries with the highest decline are Paraguay, Chile and Ecuador, with an average annual decrease of 7.8%, 6.8% and 6.7%, respectively. The only two countries that (modestly) increase its export variety are Brazil and Argentina, with an average annual growth rate of 0.7% and 0.1%, respectively.

Table 4. Export variety in the MERCOSUR market

MERCOSUR	Argentina	Bolivia	Brazil	Chile	Colombia	Ecuador	Paraguay	Peru	Uruguay	Venezuela
1993-95	42.7%	14.6%	47.9%	30.9%	16.2%	10.0%	13.5%	6.0%	32.1%	19.2%
1994-96	47.5%	13.8%	50.4%	29.8%	19.2%	9.2%	12.2%	7.5%	29.8%	18.8%
1995-97	50.8%	12.4%	51.4%	25.5%	21.3%	10.3%	10.0%	9.6%	28.2%	18.8%
1996-98	51.9%	10.5%	52.5%	25.0%	23.0%	10.6%	9.0%	10.0%	27.0%	18.3%
1997-99	52.7%	10.2%	51.9%	23.6%	23.4%	9.3%	9.1%	8.1%	27.8%	18.2%
1998-00	52.0%	9.3%	53.3%	22.7%	23.6%	8.5%	9.0%	6.0%	27.2%	18.5%
1999-01	50.5%	9.1%	54.0%	21.7%	22.2%	6.6%	7.7%	5.0%	24.7%	17.6%
2000-02	47.3%	10.0%	52.4%	19.3%	18.8%	6.0%	7.2%	5.2%	22.4%	16.2%
2001-03	44.9%	9.8%	50.7%	17.6%	15.8%	4.2%	7.0%	5.3%	20.3%	13.5%
2002-04	43.2%	9.7%	51.0%	16.8%	15.8%	5.5%	6.7%	5.3%	18.6%	12.8%
Average	48.3%	10.9%	51.5%	23.3%	19.9%	8.0%	9.1%	6.8%	25.8%	17.2%
Annual Growth Rate (1993-2004)	0.1%	-4.6%	0.7%	-6.8%	-0.3%	-6.7%	-7.8%	-1.3%	-6.1%	-4.5%

In the case of the US market, Table 5, the average export variety is 19.9%, with an average of 17.2% for CAN countries and 24.2% for MERCOSUR countries. The countries with the highest export variety are Brazil, Argentina and Colombia, with an average export variety of 47.4%, 30.7%, and 23.7%, respectively. Also, in this block the average export variety growth rate is 3.3%, with an average growth of 2.7% for CAN countries and 4.8% for MERCOSUR countries. The countries with the highest growth performance are Peru, Uruguay and Bolivia, with an average annual growth rate of 8.3%, 7.0% and 5.4%, respectively. Venezuela and Colombia decline its export variety to this market, with an average annual decline of 1.3% and 0.6%, respectively. A ...nal comment regarding export variety growth in this market is that after 2001 countries as Colombia and Ecuador has reduced its export variety in the US market.

Table 5. Export Variety in the US Market

USA	Argentina	Bolivia	Brazil	Chile	Colombia	Ecuador	Paraguay	Peru	Uruguay	Venezuela
1993-95	27.8%	7.9%	40.7%	13.4%	22.0%	12.7%	6.9%	11.8%	9.3%	16.5%
1994-96	29.7%	9.8%	41.4%	13.7%	21.8%	13.8%	8.2%	15.0%	9.8%	16.9%
1995-97	30.0%	12.7%	41.4%	13.5%	22.5%	14.1%	6.5%	19.0%	9.3%	16.3%
1996-98	30.7%	13.1%	40.7%	13.6%	23.7%	14.3%	6.7%	20.2%	9.9%	16.2%
1997-99	31.0%	13.4%	43.3%	16.5%	24.3%	15.0%	4.7%	21.2%	10.3%	16.1%
1998-00	31.1%	12.0%	47.6%	17.4%	26.3%	15.5%	5.9%	21.2%	10.6%	16.1%
1999-01	31.5%	13.6%	53.0%	18.1%	26.9%	15.6%	6.0%	21.8%	11.6%	15.8%
2000-02	32.0%	12.1%	55.2%	16.8%	26.7%	14.7%	6.9%	23.3%	14.6%	15.1%
2001-03	31.3%	12.2%	56.5%	17.3%	21.8%	14.4%	7.3%	23.5%	16.4%	14.7%
2002-04	31.6%	12.8%	54.3%	19.3%	20.9%	14.7%	9.7%	25.0%	17.4%	14.7%
Average	30.7%	12.0%	47.4%	16.0%	23.7%	14.5%	6.9%	20.2%	11.9%	15.8%
Annual Growth Rate (1993-2004)	1.4%	5.4%	3.2%	4.1%	-0.6%	1.6%	3.9%	8.3%	7.0%	-1.3%

In the case of the EU market, Table 5, the average export variety is 12.7%, with an average of 9.5% for CAN countries and 18.0% for MERCOSUR countries. The countries with the highest export variety are Brazil, Argentina and Venezuela, with an average export variety of 33.0%, 21.0%, and 15.7%, respectively. Also, in this block the average export variety growth rate is 3.5%, with an average growth of 3.8% for CAN countries and 3.8% for MERCOSUR countries. The countries with the highest growth performance are Paraguay, Colombia, Uruguay and Peru, with an average annual growth rate of 7.1%, 6.6%, 5.2% and 5.1%, respectively. It is important to indicate that Argentina has experienced no growth on its export variety to this market.

Table 6. Export Variety in the EU Market

UE	Argentina	Bolivia	Brazil	Chile	Colombia	Ecuador	Paraguay	Peru	Uruguay	Venezuela
1993-95	20.5%	6.4%	30.3%	7.1%	6.1%	6.0%	4.8%	5.8%	9.2%	13.9%
1994-96	21.3%	7.0%	33.0%	8.6%	6.9%	6.4%	5.6%	8.4%	11.2%	15.8%
1995-97	19.9%	6.0%	32.0%	8.5%	7.7%	6.5%	4.9%	10.3%	11.0%	16.8%
1996-98	20.8%	6.0%	30.9%	8.1%	8.1%	7.4%	5.7%	11.9%	10.4%	17.1%
1997-99	21.2%	6.6%	28.7%	7.2%	8.1%	7.9%	7.2%	10.6%	10.5%	15.8%
1998-00	22.2%	6.4%	31.0%	7.5%	7.3%	7.3%	7.9%	8.9%	10.0%	14.7%
1999-01	21.1%	6.3%	33.3%	6.7%	8.8%	6.2%	9.0%	9.0%	9.6%	14.7%
2000-02	21.3%	7.1%	35.2%	6.1%	11.0%	6.6%	9.0%	10.1%	9.6%	14.7%
2001-03	21.3%	7.4%	36.6%	6.5%	11.7%	7.0%	9.4%	10.4%	12.0%	15.4%
2002-04	20.4%	7.4%	38.9%	7.8%	11.0%	7.9%	9.0%	9.2%	14.7%	17.6%
Average	21.0%	6.7%	33.0%	7.4%	8.7%	6.9%	7.2%	9.4%	10.8%	15.7%
Annual Growth Rate (1993-2004)	0.0%	1.5%	2.8%	1.0%	6.6%	3.1%	7.1%	5.1%	5.2%	2.6%

This results can be summarize in table 7, which shows that for most countries South-South trade block (CAN and MERCOSUR) are the most important for its export variety. This is particularly true for the Andean market, where export variety for most countries is higher even for the case of countries that belong to MERCOSUR. This result potentially implies that this type of block could be a source of export variety for South American countries. However, for the Andean countries that bene...ts from the unilateral trade preferential access to the US market (Andean Trade Promotion and Drug Eradication Act, ATPDEA) this market represents the second place on export variety, after its own trading block. This is particularly true for the case of Peru, where the US market represent the most important source of its export variety growth.

Table 7. Aggregate Export Variety Index by Market Destination

		Average Variety	Growth Rate			Average Variety	Growth Rate
Argentina	Index	25.0%	0.4%	Ecuador	Index	9.5%	1.6%
	CAN	42.7%	3.6%		CAN	24.1%	1.4%
	MERCOSUR	48.3%	0.1%		MERCOSUR	8.0%	-6.7%
	USA	30.7%	1.4%		USA	14.5%	1.6%
	UE	21.0%	0.0%		UE	6.9%	3.1%
Bolivia	Index	8.5%	1.9%	Paraguay	Index	7.2%	3.8%
	CAN	12.2%	4.3%		CAN	8.6%	8.2%
	MERCOSUR	10.9%	-4.6%		MERCOSUR	9.1%	-7.8%
	USA	12.0%	5.4%		USA	6.9%	3.9%
	UE	6.7%	1.5%		UE	7.2%	7.1%
Brasil	Index	38.3%	2.0%	Perú	Index	13.0%	4.6%
	CAN	54.3%	1.8%		CAN	29.5%	3.5%
	MERCOSUR	51.5%	0.7%		MERCOSUR	6.8%	-1.3%
	USA	47.4%	3.2%		USA	20.2%	8.3%
	UE	33.0%	2.8%		UE	9.4%	5.1%
Chile	Index	10.9%	1.2%	Uruguay	Index	11.7%	3.5%
	CAN	41.6%	0.9%		CAN	18.1%	5.5%
	MERCOSUR	23.3%	-6.8%		MERCOSUR	25.8%	-6.1%
	USA	16.0%	4.1%		USA	11.9%	7.0%
	UE	7.4%	1.0%		UE	10.8%	5.2%
Colombia	Index	14.1%	1.9%	Venezuela	Index	16.0%	0.8%
	CAN	48.5%	3.4%		CAN	36.0%	-1.6%
	MERCOSUR	19.9%	-0.3%		MERCOSUR	17.2%	-4.5%
	USA	23.7%	-0.6%		USA	15.8%	-1.3%
	UE	8.7%	6.6%		UE	15.7%	2.6%

3.3.2 Export Variety Index by Type of Good and Market Destination

In this section, we identi...ed some stylized facts that could question the optimistic vision that South American countries are taking advantage of its preferential trade agreements in order to increase its export variety, specially in sector with higher value added. In order to do the analysis, we pooled the export lines (5036 in total) in 8 groups of goods (Agriculture; Electronics; Wood and paper; Machinery and transportation; Mining and metals; Oil; Chemicals and plastic; and Textile and clothing).

The following tables (Tables 8-15) show the export variety index by type of good and by market destination. The information in each table presents the index for the group and its value for each destination market for each South American country. These tables show that oil, agriculture, wood and paper are

the groups where export variety is the highest for most South American countries (with an average export variety for this group of 28.7%, 20.5% and 19.7%, respectively). In contrast, sectors where the value added and the technological content are higher (machinery and transportation, chemical and plastic, electronics) appears in the last places with respect to the export variety (with an average export variety for this group of 14.4%, 9.1% and 8.2%, respectively). The exception of this behavior are Brazil and Argentina, specially for machinery and transportation (with an average export variety for this group of 52.9% and 29.6%, respectively).

The only manufactured good that represents an important source of export variety for the countries is textile and clothing (with an average export variety for this group of 17.2%). However, this is more the consequence of trade preferences than pure comparative advantage since in general for all countries export variety in this sector is higher for the market with preferential access, with a substantial di¤erence with respect to other markets. This is the case for the Andean countries that are part of the ATPDEA and CAN, where in those countries we can see that export variety is particularly high in those markets. Also, this is also true for the case of MERCOSUR countries, specially for the case of Paraguay.

With respect to growth rates, Tables 8-15 show that South American markets are not as dynamic as developed markets for export variety growth, specially in the MERCOSUR block and for goods with more value added. For example, in machinery and transportation South American blocks (CAN and MERCOSUR) have an average export variety growth of -11% while export variety growth on developed countries (EU and US) was 6.8%. The same is true for electronics (1% and 10.2% growth for South American blocks and developed countries, respectively), and for chemical and plastic (2% and 7.6% growth for South American blocks and developed countries, respectively).

In the case of low value added goods, the di¤erences in growth performance are much smaller, although still in favor of developed markets. For example, in mining and metals South American blocks (CAN and MERCOSUR) have an

average export variety growth of 1.3% while export variety growth on developed countries (EU and US) was 2.0%. The same is true for wood and paper (0.8% and 4.0% growth for South American blocks and developed countries, respectively), and for agriculture (0.5% and 2.2% growth for South American blocks and developed countries, respectively).

Table 8. Agriculture Export Variety Index by Market Destination

		Average Variety	Growth Rate				Average Variety	Growth Rate
Argentina	Index	33.1%	1.8%		**Ecuador**	Index	22.4%	2.2%
	CAN	66.4%	2.4%			CAN	40.2%	0.9%
	MERCOSUR	63.9%	0.4%			MERCOSUR	7.6%	0.4%
	USA	34.2%	4.4%			USA	35.3%	2.3%
	UE	30.9%	2.5%			UE	19.4%	3.0%
Bolivia	Index	10.4%	3.8%		**Paraguay**	Index	13.6%	0.7%
	CAN	39.5%	1.8%			CAN	23.2%	5.6%
	MERCOSUR	10.5%	-3.1%			MERCOSUR	33.5%	-0.3%
	USA	11.8%	1.8%			USA	7.8%	-0.5%
	UE	9.3%	7.1%			UE	14.1%	1.6%
Brasil	Index	26.4%	0.9%		**Perú**	Index	21.9%	2.3%
	CAN	31.8%	2.1%			CAN	27.7%	6.3%
	MERCOSUR	28.7%	-1.2%			MERCOSUR	8.6%	2.0%
	USA	32.9%	0.8%			USA	35.7%	3.4%
	UE	24.6%	1.4%			UE	18.8%	2.8%
Chile	Index	22.8%	1.0%		**Uruguay**	Index	23.4%	2.5%
	CAN	41.5%	2.5%			CAN	31.2%	1.6%
	MERCOSUR	33.8%	-2.9%			MERCOSUR	44.0%	-0.8%
	USA	33.7%	0.8%			USA	23.3%	2.4%
	UE	19.4%	1.7%			UE	22.6%	4.4%
Colombia	Index	18.3%	1.6%		**Venezuela**	Index	12.4%	0.7%
	CAN	39.1%	4.6%			CAN	33.8%	-2.8%
	MERCOSUR	10.5%	-3.0%			MERCOSUR	3.9%	-5.5%
	USA	32.3%	0.7%			USA	16.5%	-0.1%
	UE	14.6%	2.4%			UE	11.2%	1.2%

Table 9. Electronics Export Variety Index by Market Destination

Country		Average Variety	Growth Rate	Country		Average Variety	Growth Rate
Argentina	Index	11.4%	2.6%	Ecuador	Index	5.7%	4.9%
	CAN	33.0%	9.5%		CAN	8.0%	10.9%
	MERCOSUR	24.1%	1.5%		MERCOSUR	2.3%	-0.9%
	USA	9.3%	9.4%		USA	1.5%	24.2%
	UE	11.6%	0.2%		UE	8.2%	5.9%
Bolivia	Index	4.5%	6.4%	Paraguay	Index	6.6%	11.9%
	CAN	3.6%	19.9%		CAN	2.8%	42.4%
	MERCOSUR	2.1%	-33.5%		MERCOSUR	2.4%	-26.8%
	USA	1.2%	31.1%		USA	7.4%	19.7%
	UE	6.5%	4.4%		UE	6.4%	16.5%
Brasil	Index	27.4%	6.2%	Perú	Index	4.3%	0.1%
	CAN	60.1%	4.8%		CAN	16.9%	12.9%
	MERCOSUR	50.5%	0.8%		MERCOSUR	2.4%	30.3%
	USA	37.8%	9.1%		USA	1.6%	9.2%
	UE	19.6%	10.6%		UE	5.8%	-3.8%
Chile	Index	3.7%	6.6%	Uruguay	Index	8.4%	6.3%
	CAN	26.6%	1.4%		CAN	16.7%	15.6%
	MERCOSUR	8.2%	-23.0%		MERCOSUR	13.0%	-15.2%
	USA	1.9%	14.9%		USA	6.5%	15.9%
	UE	4.1%	14.3%		UE	9.1%	8.6%
Colombia	Index	5.9%	5.1%	Venezuela	Index	4.4%	2.0%
	CAN	41.6%	2.9%		CAN	15.7%	-0.5%
	MERCOSUR	12.0%	-6.2%		MERCOSUR	2.7%	-26.2%
	USA	4.8%	-5.8%		USA	1.5%	2.0%
	UE	5.7%	15.7%		UE	5.9%	3.2%

Table 10. Wood and paper Export Variety Index by Market Destination

Country		Average Variety	Growth Rate	Country		Average Variety	Growth Rate
Argentina	Index	25.8%	4.2%	Ecuador	Index	14.6%	-1.2%
	CAN	42.7%	0.6%		CAN	27.0%	-2.8%
	MERCOSUR	46.3%	2.8%		MERCOSUR	8.3%	-1.4%
	USA	35.0%	8.0%		USA	27.6%	-0.2%
	UE	21.4%	5.1%		UE	9.5%	-4.6%
Bolivia	Index	17.1%	3.2%	Paraguay	Index	15.4%	4.0%
	CAN	14.4%	-3.8%		CAN	6.3%	44.0%
	MERCOSUR	8.2%	-9.6%		MERCOSUR	17.5%	-7.9%
	USA	27.4%	2.3%		USA	17.9%	12.1%
	UE	13.3%	5.7%		UE	14.4%	3.6%
Brasil	Index	46.7%	0.1%	Perú	Index	12.9%	6.8%
	CAN	55.7%	0.6%		CAN	39.2%	2.7%
	MERCOSUR	66.2%	-3.8%		MERCOSUR	10.3%	4.5%
	USA	56.2%	-0.2%		USA	28.4%	8.2%
	UE	42.2%	0.2%		UE	6.4%	11.2%
Chile	Index	32.8%	0.9%	Uruguay	Index	15.1%	5.6%
	CAN	71.4%	0.3%		CAN	16.7%	7.2%
	MERCOSUR	59.0%	-2.1%		MERCOSUR	32.0%	-2.4%
	USA	43.5%	2.1%		USA	25.3%	8.0%
	UE	27.2%	0.7%		UE	10.4%	8.5%
Colombia	Index	10.3%	2.5%	Venezuela	Index	6.0%	-1.3%
	CAN	56.0%	2.0%		CAN	32.4%	-5.8%
	MERCOSUR	23.6%	1.7%		MERCOSUR	7.2%	-10.5%
	USA	18.6%	6.9%		USA	2.5%	7.9%
	UE	5.8%	0.0%		UE	6.9%	-5.8%

Table 11. Machinery and transportation Export Variety Index by Market Destination

Country		Average Variety	Growth Rate
Argentina	Index	29.6%	-2.4%
	CAN	39.6%	4.1%
	MERCOSUR	54.7%	-0.3%
	USA	28.9%	-1.4%
	UE	29.0%	-4.7%
Bolivia	Index	4.6%	5.9%
	CAN	10.4%	0.8%
	MERCOSUR	5.2%	-17.0%
	USA	3.5%	20.9%
	UE	4.9%	8.4%
Brasil	Index	52.9%	0.3%
	CAN	67.9%	1.0%
	MERCOSUR	65.0%	-1.4%
	USA	54.4%	4.1%
	UE	51.2%	-1.4%
Chile	Index	8.5%	4.7%
	CAN	49.8%	0.0%
	MERCOSUR	24.6%	-11.6%
	USA	11.8%	19.9%
	UE	5.2%	0.6%
Colombia	Index	6.9%	4.1%
	CAN	51.4%	3.2%
	MERCOSUR	14.6%	-0.5%
	USA	7.5%	3.9%
	UE	5.3%	8.6%

Country		Average Variety	Growth Rate
Ecuador	Index	4.9%	-0.5%
	CAN	24.0%	0.7%
	MERCOSUR	4.0%	-5.6%
	USA	1.5%	1.7%
	UE	6.3%	-0.9%
Paraguay	Index	7.3%	4.5%
	CAN	3.8%	9.3%
	MERCOSUR	5.8%	-187.9%
	USA	7.3%	-2.3%
	UE	7.3%	19.4%
Perú	Index	8.0%	11.3%
	CAN	28.1%	0.0%
	MERCOSUR	4.0%	-0.8%
	USA	9.4%	20.0%
	UE	7.0%	17.7%
Uruguay	Index	11.4%	4.6%
	CAN	16.0%	6.5%
	MERCOSUR	31.4%	-6.9%
	USA	10.9%	10.8%
	UE	10.8%	6.3%
Venezuela	Index	10.3%	3.7%
	CAN	34.0%	-2.2%
	MERCOSUR	9.4%	-11.7%
	USA	5.3%	-2.9%
	UE	12.5%	8.1%

Table 12. Mining and metals Export Variety Index by Market Destination

Country		Average Variety	Growth Rate
Argentina	Index	21.2%	2.3%
	CAN	41.1%	3.4%
	MERCOSUR	26.4%	5.4%
	USA	36.3%	0.5%
	UE	14.7%	5.3%
Bolivia	Index	7.4%	-0.5%
	CAN	4.5%	6.0%
	MERCOSUR	3.1%	0.2%
	USA	11.4%	0.5%
	UE	5.9%	-2.2%
Brasil	Index	37.9%	2.6%
	CAN	61.4%	0.6%
	MERCOSUR	44.6%	-1.2%
	USA	56.2%	0.3%
	UE	30.0%	5.9%
Chile	Index	12.8%	-2.0%
	CAN	35.8%	2.0%
	MERCOSUR	31.1%	-1.4%
	USA	17.3%	-3.7%
	UE	10.2%	-2.9%
Colombia	Index	14.7%	4.2%
	CAN	39.2%	5.3%
	MERCOSUR	5.6%	-0.1%
	USA	31.0%	2.3%
	UE	8.0%	10.5%

Country		Average Variety	Growth Rate
Ecuador	Index	6.1%	-0.1%
	CAN	13.1%	-1.0%
	MERCOSUR	0.7%	8.0%
	USA	13.9%	-1.8%
	UE	3.0%	1.1%
Paraguay	Index	4.1%	4.3%
	CAN	3.1%	7.5%
	MERCOSUR	3.9%	-3.3%
	USA	4.6%	-3.2%
	UE	3.9%	11.6%
Perú	Index	12.9%	2.1%
	CAN	30.2%	3.9%
	MERCOSUR	17.4%	-2.3%
	USA	22.3%	2.4%
	UE	8.7%	3.3%
Uruguay	Index	7.2%	1.2%
	CAN	4.5%	0.0%
	MERCOSUR	10.7%	-5.8%
	USA	11.6%	-1.4%
	UE	5.4%	3.9%
Venezuela	Index	23.8%	3.4%
	CAN	45.6%	-1.1%
	MERCOSUR	11.6%	-0.7%
	USA	31.9%	0.8%
	UE	20.5%	7.4%

Table 13. Oil Export Variety Index by Market Destination

Country		Average Variety	Growth Rate	Country		Average Variety	Growth Rate
Argentina	Index	52.3%	-1.3%	Ecuador	Index	22.0%	1.9%
	CAN	48.3%	-3.9%		CAN	36.5%	2.2%
	MERCOSUR	76.3%	-2.7%		MERCOSUR	28.7%	-12.9%
	USA	77.4%	-0.4%		USA	72.5%	0.3%
	UE	40.8%	-2.8%		UE	0.7%	.
Bolivia	Index	16.7%	-5.6%	Paraguay	Index	0.3%	6.0%
	CAN	7.2%	48.6%		CAN	2.4%	23.4%
	MERCOSUR	50.3%	1.5%		MERCOSUR	4.6%	-0.2%
	USA	44.5%	1.8%		USA	0.0%	-27.4%
	UE	3.8%	.		UE	0.1%	.
Brasil	Index	44.9%	7.7%	Perú	Index	27.1%	9.5%
	CAN	29.1%	0.9%		CAN	34.3%	-5.2%
	MERCOSUR	36.1%	11.2%		MERCOSUR	9.2%	.
	USA	67.4%	3.7%		USA	66.2%	11.0%
	UE	36.8%	16.4%		UE	11.6%	.
Chile	Index	11.0%	4.0%	Uruguay	Index	0.7%	9.7%
	CAN	30.2%	0.2%		CAN	1.5%	4.0%
	MERCOSUR	20.6%	-11.9%		MERCOSUR	16.4%	5.3%
	USA	33.4%	2.6%		USA	0.3%	.
	UE	0.7%	.		UE	0.0%	.
Colombia	Index	36.6%	4.6%	Venezuela	Index	75.9%	-0.7%
	CAN	53.9%	8.7%		CAN	71.0%	0.3%
	MERCOSUR	47.2%	4.4%		MERCOSUR	76.8%	-3.5%
	USA	74.9%	-0.2%		USA	80.1%	-0.7%
	UE	20.3%	16.6%		UE	74.2%	-1.1%

Table 14. Chemicals and plastic Export Variety Index by Market Destination

Country		Average Variety	Growth Rate	Country		Average Variety	Growth Rate
Argentina	Index	16.0%	4.4%	Ecuador	Index	3.0%	8.7%
	CAN	46.0%	4.5%		CAN	25.9%	2.2%
	MERCOSUR	47.2%	2.3%		MERCOSUR	9.4%	-0.7%
	USA	22.3%	8.2%		USA	1.7%	12.2%
	UE	10.9%	6.7%		UE	2.7%	19.1%
Bolivia	Index	2.6%	-2.7%	Paraguay	Index	3.5%	1.5%
	CAN	7.3%	25.1%		CAN	14.4%	6.3%
	MERCOSUR	6.1%	-3.0%		MERCOSUR	8.5%	3.0%
	USA	1.2%	14.8%		USA	1.6%	8.6%
	UE	2.8%	-6.8%		UE	3.7%	-0.1%
Brasil	Index	26.3%	3.1%	Perú	Index	3.7%	8.3%
	CAN	55.3%	1.9%		CAN	35.7%	4.0%
	MERCOSUR	54.2%	0.9%		MERCOSUR	7.3%	-11.6%
	USA	32.1%	1.6%		USA	4.6%	14.5%
	UE	21.7%	6.6%		UE	2.4%	18.3%
Chile	Index	6.1%	5.2%	Uruguay	Index	10.5%	4.2%
	CAN	43.7%	1.4%		CAN	26.8%	4.1%
	MERCOSUR	24.7%	2.8%		MERCOSUR	29.6%	-5.0%
	USA	10.7%	6.5%		USA	6.2%	8.5%
	UE	2.4%	14.1%		UE	10.8%	9.0%
Colombia	Index	7.8%	3.4%	Venezuela	Index	12.0%	0.2%
	CAN	52.3%	2.3%		CAN	46.8%	-0.2%
	MERCOSUR	26.5%	0.2%		MERCOSUR	18.1%	0.1%
	USA	10.7%	2.7%		USA	12.8%	-5.8%
	UE	4.5%	10.2%		UE	10.6%	3.4%

Table 15. Textile and clothing Export Variety Index by Market Destination

		Average Variety	Growth Rate			Average Variety	Growth Rate
Argentina	Index	12.4%	4.1%	Ecuador	Index	10.6%	-0.1%
	CAN	22.0%	2.3%		CAN	26.6%	1.8%
	MERCOSUR	44.3%	-1.6%		MERCOSUR	6.6%	-9.8%
	USA	17.3%	4.4%		USA	15.2%	3.7%
	UE	8.8%	7.7%		UE	7.7%	-4.4%
Bolivia	Index	16.2%	1.9%	Paraguay	Index	11.3%	0.8%
	CAN	18.5%	5.1%		CAN	11.2%	14.3%
	MERCOSUR	14.3%	-12.8%		MERCOSUR	26.8%	0.7%
	USA	23.3%	5.4%		USA	11.0%	4.1%
	UE	12.0%	0.3%		UE	11.2%	-0.5%
Brasil	Index	27.1%	-0.5%	Perú	Index	28.4%	1.6%
	CAN	34.9%	2.3%		CAN	39.4%	6.5%
	MERCOSUR	48.5%	6.4%		MERCOSUR	10.5%	-2.9%
	USA	37.0%	-0.9%		USA	35.9%	3.2%
	UE	20.9%	-1.4%		UE	24.2%	1.0%
Chile	Index	8.6%	-8.3%	Uruguay	Index	19.2%	-1.8%
	CAN	28.1%	0.1%		CAN	12.9%	-0.3%
	MERCOSUR	17.2%	-12.2%		MERCOSUR	32.7%	-13.0%
	USA	13.4%	-10.3%		USA	28.2%	-0.5%
	UE	5.5%	-16.4%		UE	13.8%	-5.4%
Colombia	Index	34.3%	-0.5%	Venezuela	Index	4.3%	-4.1%
	CAN	61.6%	1.4%		CAN	18.6%	-7.3%
	MERCOSUR	16.9%	-8.0%		MERCOSUR	3.6%	-7.5%
	USA	61.1%	-0.7%		USA	2.1%	-28.0%
	UE	18.8%	-2.4%		UE	5.5%	-2.7%

4 Concluding remarks

The results in this paper shows that as expected on our conceptual section, export variety of South American countries is higher within South American markets than with the developed markets. We also found that these e¤ect are more relevant for goods where value added is low. However, export variety growth is more important in markets of developed countries than in the South American blocks, again particularly for good where value added are more important. Additionally, we …nd that the US market is the most important developed market for export variety for all the South American countries in the sample, specially for the Andean countries that are bene…ciary of the ATPDEA preferences.

These results appear to indicate that preferential trade access represents an important factor explaining export variety in the region. However, two points

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are important to be made. First of all, it appears that preferential trade access helps to develop more export variety on goods (specially with more value added) directed to South American markets, and also helps to develop more export variety on goods (specially with low value added) directed to the markets of developed countries. Second of all, when we compare goods and destination we can see that in those sectors where countries have "global" comparative advantages, they developed a more uniform export variety across destinations. But where countries' exports are more related to the existence of preferential market access, then this generates export variety in "excess" of what is created in other destinations where this preferential access either does not exist or is less acute.

Finally, related to the last point, it appears that in the case where countries do not have these "global" comparative advantages (specially in more elaborated manufactured goods) the "excess" export variety generated by the preferential access contributed very little to the total export variety of the countries (both its level and its growth performance).

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