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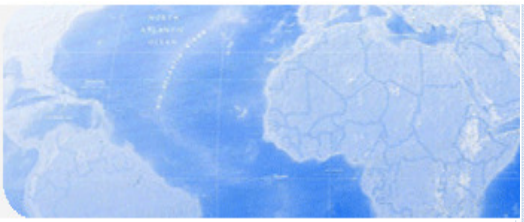

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Andean Community's 'Platform Effect' in Manufacturing Exports

A Case of Trade Compatibility between South-South and North-South Trade Agreements

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Abstract

The motivation to carry out the academic research that led to the results presented in this paper stems from the need to address some issues of conceptual and policy making importance, which are evident when considering some of the most interesting features of contemporary economic regionalism and its immediate consequences for the Andean sub region.

Introduction

The motivation to carry out the academic research that led to the results presented in this paper stems from the need to address some issues of conceptual and policy making importance, which are evident when considering some of the most interesting features of contemporary economic regionalism and its immediate consequences for the Andean sub region.

The feature in question concerns the increasing proliferation of Preferential Trade Agreements between developed and developing countries (or North-South PTAs). The advanced versions of such agreements are known as Free Trade Agreements (FTAs), due to their comprehensive nature both in terms of the wide range of trade issues covered by them, and the depth of the liberalization and regulatory commitments they create. Such characteristics, coupled with the active participation of powerful economies in the proliferation of these agreements, has revived the old debate concerning whether PTAs strengthen or weaken the multilateral trade system and, at the same time, has launched new debates on the opportunities or threats that such North-South FTAs represent for participating developing countries, in particular when they are also members of South-South PTAs.

An immediate consequence of the above in the Andean sub region was the escalation of political conflicts among members of the Andean Community of Nations (CAN, in its Spanish acronym form) when negotiations on bilateral FTAs involving Peru and Colombia with the US were successfully completed; one of the reasons for Venezuela's withdrawal from the integration agreement. In addition, there was no consensus among the remaining four CAN members with respect to other similar trade negotiations, which explains why only Colombia and Peru have signed an FTA with the EU. The statements that best illustrate the polarized positions within the CAN, were, on the one hand, the assertion that such FTAs were not compatible with Andean integration and represented its demise, and on the other, that such an outcome should not be a cause for concern because the CAN was of little economic value or political significance.

In view of such important events and debates –both at the global and Andean level- giiven that many comments and observations were not well substantiated, it became necessary to address the issue of the compatibility between North-South PTAs and South-South PTAs in an appropriate waythrough concrete and objective research. With this purpose in mind, the authors of this paper recovered the path set out by a study of the Andean Community's General Secretariat [SGCAN, 2004] which found tentative indications of a 'Platform Effect' (PE), whereby the sub regional extended market provided by the Andean free trade

area was said to facilitate the emergence of new industrial capacities revealed by the exports of non-traditional manufactures (i.e. of manufactures that are non-or less-intensive in natural resources) not only at the intra-CAN level but also in other markets, even those of developed countries.

If the existence of such PE could be verified, it would show that a South-South PTA, such as CAN, may indeed be trade compatible with North-South FTAs such as the ones of Colombia and Peru with the US and/or the EU. This is because a PE would demonstrate that the CAN is effectively promoting Andean manufacturing exports with a higher value added to developed markets, which is precisely the type of trade that such FTAs are aiming to promote even more. At the same time, the existence of a PE would also show the true extent of CAN's value in trade terms, which would not be limited to promoting trade with industrial value added solely at an intra-CAN level.

Such important implications explain why the research presented here was focused in designing a methodology capable of thoroughly identifying the PE, and in applying it to a case study, relating the CAN with Colombia's and Peru's manufacturing exports to the US and/or EU markets. In fact, our methodology allows for its application to other similar cases, since it has been designed as a general use tool for the empirical research of trade compatibility between South-South PTAs and North-South PTAs.

Consequently, after briefly examining some of the main conceptual issues relevant to the research in what remains of this introductory section, as well as the sector structure of Andean exports in Section II, a detailed explanation of our methodology is offered in Section III. The results obtained from its application to the aforementioned case study are analyzed in Section IV. Section V concludes with a synthesis of the research findings, underlying some of its main policy lessons.

A brief conceptual framework

Regionalism is a collective intergovernmental action in response to the twin phenomena of globalization and regionalization resulting from 'spontaneous' market forces, which represent opportunities for countries derived from their increasing interdependence, however at the same time posing significant challenges to governments in terms of their ability to regulate such phenomena which go beyond their borders, makingit difficult for them to lead the development process of their respective nations.

Okita [1992] makes a distinction between two types of regionalism. One is the "old" regionalism, which promotes trade among members of an agreement but with a protectionist treatment for non-members, in turn weakening world trade. The second one is an 'open regionalism', which recognizes that closed regions are not viable in today's world and therefore seeks to strengthencooperation among the economies of a region in order to support their globalization. In Latin America, the CAN has pioneered the adoption of the 'open regionalism' approach originated in Asia-Pacific [Kuwayama, 1999] by means of its Andean Strategic Design of 1989 [Gonzalez-Vigil, 2005].

PTAs are the more formal and legally binding forms of regionalism. One of PTAs' most typical specific objectives is to promote the diversification of trade towards products –goods and/or services- with more value added, by creating an extended market where member countries get an advantageous access to economies of scale or specialization opportunities. This objective is particularly important for countries whose exports to the world market are mostly made up of primary goods and traditional manufactures (i.e. natural resource-based manufactures), as is the case in the great majority of South American economies.

There is no agreement in the specialized literature as to the economic effects of South-South PTAs. Madani [2001] argues in favor of them, such as the market size expansion they encourage, allowing greater efficiency and productivity through economies of scale (internal and external) as well as the agglomeration economies. However, Puga and Venables [1998] warn that industrialization within such PTAs can be asymmetrical due to agglomeration forces that encourage industries to concentrate in certain member countries, particularly in those with larger domestic markets. In this respect, Venables [2003] shows that member countries with a manufacturing comparative advantage intra-PTA can further develop their industries by taking advantage of trade preferences, while members with high comparative advantages in primary goods, or products with a very low manufacturing component, will remain specialized in such products.

In addition to the previous discussion, there is the traditional debate as to the effects of the intrinsically discriminatory nature of the PTAs on the multilateral trade system. This debate was intensified by the current proliferation of PTAs. Even though the WTO allows PTAs, by means of Article XXIV and the Enabling Clause in GATT as well as of Article V in GATS, it also warns of the complexity of managing the '*spaghetti bowl'* resulting from overlapping PTAs with different tariff preferences and rules of origin that increase the cost of doing business [WTO, 2004].

On the other hand, Scollay [2008] points out that one disadvantage of the WTO lies in the difficulty to substantially liberalize trade among all of its numerous members. This disadvantage leads Kuwayama *et al*. [2005] to state that the proliferation of PTAs is not only justified given the complex multilateral option, but also that it can have positive spillover effects due to the deeper levels of liberalization and, when it comes to regional or plurilateral PTAs, these have the additional advantage of reducing the '*spaghetti bowl'* problems.

A more recent debate responds to a relatively new phenomenon: the increasing interest of developing countries –regardless of if they belong to a South-South PTA or not- to establish PTAs with developed countries. Such North-South PTAs are considered a distinctive feature of the "new" regionalism [Devlin and Estevadeordal, 2001] that was fostered by the 'open regionalism'. Such debate deals with the issue of compatibility between South –South PTAs and North-South PTAs, when developing countries belong to both.

In this regard, Fugazza and Robert-Nicoud [2006] conclude, based on a model, that if a free trade area among developing countries reduces the cost of intermediate goods for final goods producers, the resulting reduction in production costs would increase the possibility for industrial firms of the South to develop final goods that can be marketed in the North. Similarly, with respect to the particular case of the CAN, a study that was quoted earlier [SGCAN, 2004] found tentative indications of a 'Platform Effect' at the Andean sub-regional market level, which would be facilitating the diversification of Andean exports to developed countries towards non-traditional manufacturing products.

In view of the above, Gonzalez-Vigil [2007] proposed the hypothesis that there may be trade compatibility between a South-South PTA as CAN and the North-South FTAs of two of its members (Colombia and Peru) with developed countries, to the extent that both types of PTAs share the purpose of promoting a non-traditional pattern of trade in products with more technology-intensive value added. Evidently, it is a hypothesis of compatibility in a specific sense –in trade terms only, which does not exclude the possibility of incompatibilities in other aspects such as legal and institutional or with regard to other development issues [DiCaprio *et al.*, 2011].

With such hypothesis in mind, the research that is presented in this paper is focused on verifying whether there is a CAN 'Platform Effect' in manufacturing exports to markets of developed countries, such as the US and EU members, with whom Colombia and Peru have previously negotiated North-South FTAs.

CAN's Free Trade Area and Export Diversification

The most important achievement of trade integration in the CAN to date is the fully established sub regional area of free trade in goods. In fact, a zero tariff is already in place for all the intra-CAN trade in goods. The Andean free trade area was established in 1983 between Bolivia, Ecuador, Colombia and Venezuela. Even though Peru excluded itself from this trade area until 1997, during those years it maintained sub regional trade through bilateral agreements with each one of its Andean partners and, in the second semester of 1997, it initiated a process of slow and gradual incorporation into the said area that concluded in December 2005.

In contrast, the other key mechanism for Andean trade integration - the sub regional common external tariff- had a different fate. It was never adopted by Peru, it was not uniformly adopted by the other CAN members that had subscribed to it in 1994, and after about 12 years of imperfect existence it started to be abandoned in practice from the middle of the 2000s [BID, 2005].

The assertions above explain the two assumptions usually made with the purpose of simplifying the analysis of CAN's trade benefits. One assumption consists in attributing the benefits from trade integration in CAN mostly to its sub regional free trade area. The other simplifying assumption consists of taking into account the common external tariff not as an explanation of CAN's trade benefits, but simply as one of the factors behind the differences between CAN members concerning their respective gains from Andean trade integration.

CAN's main trade benefit does what it is expected from an integration agreement among developing economies still playing the role of primary exporters to the world market –i.e. to contribute to the diversification of its members' exports beyond commodities and traditional natural resource-based manufactures. Such a contribution is materialized in the predominance of non-traditional manufactures with higher technology-intensive value added at two levels: first, at the level of intra-CAN exports and, second, at the level of Andean exports benefitting from a CAN's 'Platform Effect' towards some key developed economy markets.

The latter is the focus of this research paper and therefore the subject of the next two sections. But, before that, it is important to briefly examine the former in what remains of this section, because the high share of non-traditional manufactures in intra-CAN exports is a significant achievement that makes the

assessment of CAN's actual contribution to its members' economic development less unclear when compared to other South-South PTAs [De Lombaerde *et al.*, 2008].

In particular if such a non-traditional pattern of Andean exports at the CAN market level were the starting point for the emergence of a CAN's 'Platform Effect' facilitating the expansion of Andean non-traditional exports towards outside CAN markets –particularly to key markets of major developed economies. This explains the inclusion in this section of a discussion on Colombia's and Peru's total exports to the US and EU markets, as part of the background for the in-depth analysis of the 'Platform Effect' to be presented in the subsequent sections.

Predominance of manufactures in intra-CAN exports

In sharp contrast with CAN members[2] combined exports to the world market at large, where primary goods have an overwhelming weight (of around 79% in the 2000s decade), manufacturers predominate in their combined exports within the Andean sub regional market –accounting for around 75% at this market level. Some relevant aspects of such a distinctive profile of intra-CAN exports are shown in Table 1, where data is disaggregated by sectors corresponding to product groups in the well-known classification of Lall [2000].

In terms of subheadings (i.e. at the 6-digit level of tariff-lines in the 1992 Harmonized System), the number of them registering intra-CAN exports increased relatively between 1994-1997 (i.e. in the first four years the Andean free trade area was already in force) and in 2004-2007 for medium-technology manufactures (MTM) and high-technology manufactures (HTM). However, for natural resource-based manufactures (NRBM) and low-technology manufactures (LTM) this remained practically constant and those of primary goods (PG) even declined. Thus, the share of subheadings corresponding to non-traditional manufactures (i.e. the combined shares of LTM, MTM and HTM) has continued to predominate in total intra-CAN export subheadings: 66% in 1994-1997 and 67% in 2004-2007.

[2]Given the time-periods analyzed in this paper, Venezuela is here included in all the statistical data referred to CAN as a whole.

Table 1
Intra-CAN Exports: Main traits in 1994-1997 and 2004-2007

Sector	Tariff Subheadings		Annual Average (US$ mill.)		Rate of Growth	Sector Structure		CAN/World Share	
	1994-1997	2004-2007	1994-1997	2004-2007	2004-07/ 1994-97	1994-1997	2004-2007	1994-1997	2004-2007
PG	484	468	1,026	2,506	10.4%	22.3%	24.6%	4.0%	3.5%
NRBM	868	870	1,128	1,988	6.5%	24.5%	19.5%	11.5%	7.7%
LTM	1,264	1,265	909	2,292	10.8%	19.7%	22.5%	32.9%	38.6%
MTM	1,162	1,197	1,329	2,836	8.8%	28.8%	27.8%	49.2%	36.8%
HTM	310	327	167	362	9.0%	3.6%	3.5%	52.6%	42.7%
NCM	33	33	47	224	18.8%	1.0%	2.2%	27.5%	30.2%
Total	4,121	4,160	4,606	10,208	9.2%	100.0%	100.0%	11.2%	9.0%

Sources: Data in WITS (World Integrated Trade Solution), as processed by this research paper's authors.

Note: Sector defined according to S. Lall's [2000] classification: PG = Primary Goods; NRBM = Natural Resource-Based Manufactures; LTM = Low-Technology Manufactures; MTM = Medium-Technology Manufactures; HTM = High-Technolo Manufactures; NCP = Non-Classified Manufactures.

Of even greater significance is the performance of non-traditional manufactures in intra-CAN exports when examined in value terms. Indeed, despite the commodities boom that inflated prices –and hence the shares- of PG and some NRBM during most part of the 2000s decade, the combined share of LTM, MTM and HTM in total intra-CAN exports has not only remained prominent but it has also increased slightly – from 52.1% in 1994-1997 to 53.8% in 2004-2007. And, while MTM has continued to stand out as the sector with the largest share in total intra-CAN exports (27.8% in 2004-2007), in terms of dynamism the leading role corresponds to LTM as the sector with the highest average annual growth rate (10.8%) from 1994-1997 to 2004-2007.

It is also worthy to emphasize the Andean sub regional market's high relative weight as a destination market for non-traditional exports of CAN members, which in 2004-2007 ranged from 36.8% of Andean MTM exports to the world up to 38.6% for those of LTM and as much as 42.7% for those of HTM (as shown in the last column of Table 1). Whereas quite the opposite applies regarding the traditional exports of CAN members, few of which are destined to the Andean market (3.5% and 7.7% in the cases of PG and NRBM respectively) – which is why, in aggregate terms, this market ends up being the destination for only 9% of total Andean exports to the world at large. But this aggregation, because it is biased by the overwhelming share of traditional products in Andean world exports, masks the CAN market's true importance from an export diversification perspective.

All the above implies that the Andean free trade area and other CAN mechanisms for trade integration are certainly contributing to the emergence of a non-traditional export pattern in CAN members. This infant pattern, born and existing alongside the traditional natural resources-dependent pattern, is more based on industrial skills of higher value-added and/or technological intensity, as it is also more prone to give rise to intra-industry trade and production-chains. Both attributes together allow for the new pattern's eventual expansion – once accumulated the needed economies of scale or specialization - beyond intra-CAN exports towards including outside-CAN exports too – as verified by the 'Platform Effect'.

CAN members' different stands on North-South trade negotiations

In a context of "open regionalism" and increasing North-South PTAs (as described in Section I), two CAN members –Colombia and Peru- have negotiated last-generation FTAs with the US and the EU, which ensures them a permanent and binding preferential access for their exports –in particular of non-traditional manufactures- to those large developed markets. Both countries opted for such arrangements rather than just keep enjoying from unilateral programs of tariff preferences such as the US' Andean Trade Promotion and Drug Eradication Act (ATPDEA) or the EU's special version of its General System of Preferences (GSP Plus). These unilateral programs, while facilitating a preferential entry to certain products, do not guarantee such entry in the long term but instead are dependent on the good will of those countries to maintain the programs.

The main trade objectives of Colombia and Peru regarding their respective FTAs with the US and the EU are to enhance the potential for diversification of their exports as well as of the sector destination of foreign investment received. The aim is to gain advantageous access to larger and more exigent markets such as the ones of the US and EU, in order to consolidate and upgrade the process of export diversification towards non-traditional manufactures which has already been taking place at the sub-regional Andean market level. Thus, these goals are part of the same strategy in favor of trade and investment with a higher value added and, in this sense, for Colombia and Peru there is compatibility –at least in principle- between their participation in a South-South integration agreement such as CAN and their FTA partnerships with the US and the EU [Gonzalez-Vigil, 2007].

The other two CAN members have, until now, limited themselves to the role of beneficiaries of the preferential entry for some of their exports to developed markets through unilateral programs, and have

yet to materialize North-South FTAs. Ecuador actively participated, alongside Colombia and Peru, during the plurilateral phase of the FTA negotiations with the US which took place between May 2004 and November 2005, but did not conclude them because of conflicts with oil investors from the US; whilst Bolivia opted for attending such negotiations only as an observer. In addition, Bolivia did not accept the FTA component of the Association Agreement with the EU, and Ecuador only participated in the group negotiation phase of that component but not in the bilateral phase that Colombia and Peru successfully concluded in March of 2010.

One of the main reasons for such different strategies adopted by Bolivia and Ecuador with regards to trade negotiations with the US and the EU, was most likely the impossibility of obtaining a special and differentiated treatment comparable to that granted to both countries within the CAN and by other trade agreements in the ALADI framework, on the grounds of their relative levels of development and, in the case of Bolivia, due also to its geographical cloistering.

Manufacturing Exports of Peru and Colombia: sector structure by main destination markets

Table 2 shows that, in the 2004-2007 period, the US market was the first destination for Peru's manufacturing exports and the second for Colombia's (only surpassed by the CAN market), representing 20.8% and 23.3% of such total exports respectively. As for the EU, it was an important trade partner for Peru representing 16.4% of its manufacturing exports, whereas for Colombia the EU market represented only 8% of such exports. Both markets continue to be the most important for Peru's and Colombia's manufactures within the developed world.

Table 2
Sector Structure of Peru's and Colombia's Manufacturing Exports by Main Destination Markets, 2004-2007

	Peru					Colombia				
Sector	World (US$ mill)	US	EU	CAN	Rest of World	World (US$ mill)	US	EU	CAN	Rest of World
NRBM	7,916	51.1%	89.3%	24.0%	92.6%	3,983	47.7%	33.0%	19.8%	37.6%
LTM	1,790	44.8%	9.6%	49.0%	4.4%	2,869	26.7%	12.5%	28.8%	19.5%
MTM	384	2.7%	0.9%	21.2%	2.3%	3,960	15.8%	53.5%	41.1%	31.6%
HTM	57	1.0%	0.1%	2.1%	0.3%	532	3.9%	0.6%	5.9%	4.2%
NCP	65	0.5%	0.1%	3.8%	0.4%	638	6.0%	0.3%	4.4%	7.1%
Total	10,213	100%	100%	100%	100%	11,983	100%	100%	100%	100%
% Partner	**100%**	**20.8%**	**16.4%**	**8.6%**	**54.1%**	**100%**	**23.3%**	**8.0%**	**35.7%**	**32.9%**

Sources and Notes: Same as in Table 1

The sector structures of Peru's and Colombia's manufacturing exports to the world at large are different. The Peruvian structure is very concentrated in NRBM (77.5%), followed far behind by LTM (17.5%) – percentages that result from annual average figures of US$ 7,916 million and US$ 1,790 million in the said time period. In contrast, Colombia has a more balance export structure with a better technological level, where MTM (33%, corresponding to US$ 3,960 million) weigh practically the same as NRBM (33.2%, corresponding to US$ 3,983 million), both followed not by far by LTM (23.9%, corresponding to US$ 2,869 million).

In connection with the above, the relative importance of the CAN as a destination market for manufacturing exports from Peru and Colombia also differs. Colombia exports 35.7% of its manufactures to the CAN, while Peru only exports 8.6%. The latter is probably due, among other reasons, to the high concentration of total manufacturing exports in NRBM (mostly exported to other markets outside the CAN) and to its delayed entrance to the Andean free trade area. In contrast, MTMs represent 41.1% of Colombian manufacturing exports to the CAN, which is explained in part by its decisive participation in the Andean free trade area since the beginning, and by the adoption of the Andean common external tariff in its structure more fostering of production with higher added value [IDB-INTAL, 2005].

Regarding total manufacturing exports from Peru and Colombia to the main developed markets of the US and EU, some issues stand out when comparing their sector structures with those of the respective exports to other markets outside the CAN (grouped under the column "rest of the world" in Table 2). In fact, Peru's manufacturing exports to the US concentrate less in NRBM (51.1% vs. 92.6%) and show a significant non-traditional component in LTM (44.8% vs. 4.4%). However, those of Peru to the EU and the rest of the world resemble each other in that the traditional component (NRBM) is overwhelmingly

dominant. On the other hand, there is a better balance (between NRBM, LTM and MTM) in Colombia's manufacturing exports to the three outside-CAN markets (US, EU, rest of the world) with important shares of MTM in those three markets, including a prominent 53.5% in the EU market. It is revealing indeed that the comparison between the sector structures of total manufacturing exports shown in Table 2, and the findings in Section IV on the sector structures of Colombian and Peruvian manufacturing exports to the US and EU show evidence of having benefitted from the CAN's 'Platform Effect'.

A Methodology to Identify the 'Platform Effect'

Two facts stand out from the data examined in the previous section: first, the high manufacturing component of intra-CAN exports and, second, the lesser relative weight of natural resources in total manufacturing exports from Colombia to outside the CAN markets (US, EU and Rest of the World) as well as from Peru to the US. Given that the first of these facts clearly contrasts with the primary-exporter pattern of CAN members' total exports to the world market, there is consensus in attributing such outcome to the Andean free trade area. And, for similar reasons, the question arises as to whether the Andean free trade area also had something to do with the second fact stated above.

Thus, the question is whether or not the extended Andean market generates a 'Platform Effect' (PE) by fulfilling the role of incubator of non-traditional exporting capacities that, as time goes by, allow for the development of Andean manufacturing exports with a higher technological component or greater value added to markets outside the CAN, and especially to the larger and more demanding markets of the developed world.

This PE was initially detected by a study of the SGCAN [2004] which used a basic methodology and applied it to all Andean exports to outside-CAN markets. This methodological approach is not appropriate for a study such as the one presented in this paper, which focuses on the PE towards specific developed markets in order to contribute with concrete inputs to the debate on trade compatibility between South-South PTAs and North-South PTAs.

For this reason the authors of this paper have had to develop a new methodology, which they have branded as an 'Inference Kit' because it is made up of a set of trade indicators and protocols for processing them according to established criteria and technical controls, which as a whole increases the probability of correctly identifying the existence of the PE.

Since the 'Inference Kit' has been elaborated with the purpose of serving as an empirical tool suitable to general application, in the sense that it could be used to detect the PE in any case study involving members of a South-South PTA that also negotiated North-South PTAs, it represents a methodological contribution in itself, which is why it is explained in detail in this section. This should also contribute to a better understanding of the results to be discussed in Section IV, obtained from its application to the specific case of the CAN and the manufacturing exports of two of its members –Colombia and Peru- to the markets of developed countries with whom they have negotiated North-South PTAs – i.e. the US and the EU[3].

The 'Inference Kit': basic criteria and indicators

The tariff subheadings –with Andean exports- that are analyzed in this paper are those identified as manufactures according to Lall's classification [2000]. The source of the information processed is the data base from the World Integrated Trade Solution (WITS), with trade flows from 1994 until 2007 at 6 digit subheading level. This has been taken from the Harmonized System of 1992 (HS 92) in order to standardize the data base throughout the years included in the analysis.

Periods of Analysis and definition of the sample

The initial period of analysis (t_1), considered as the PE's "incubation period", covers the first four years after the CAN free trade area came into effect: 1994 to 1997. As mentioned in Section II, Peru was the only CAN member that did not participate in the sub regional free trade area during this period, although it kept its trade flows liberalized with CAN partners through bilateral agreements until finally (starting in the second semester of 1997) its incorporation into the Andean free trade area through a gradual and incremental process. This is one of the reasons why the first period is defined up to 1997. Another reason relates to the fact that this was the year that preceded the negative effects of the Asian crisis on the Andean sub region. Shortly after, came along the dot.com crisis. All these factors together explain why the time horizon of the methodology includes a pause for the years 1998 to 2001, in order to ensure that the results obtained are not biased by those crisis effects.

[3]A preliminary version of the 'Inference Kit' was elaborated and applied to the CAN and manufacturing exports of Colombia and Peru to the EU by Moncada and Zevallos [2009].

Given the fact that the CAN is evaluated as a 'base extended market' (BEM) where incubation could take place in t_1, the sample of subheadings studies includes manufactures which were mainly destined (measured in Share of Exports – SOX) to the CAN market during 1994-1997. That is:

$$SOX_{iCANh} > SOX_{ijh}; \forall j \neq CAN, i = Peru, Colombia$$

A point of clarification has to be made on some of the differences between the second (t_2) and third (t_3) periods applied to the analysis projected towards the US market and the one projected towards the EU market:

With regards to the US market, t_2 covers the period 2002-2003 (after the 1998-2001 pause due to the crisis), which corresponds to the first two years of the *Andean Trade Promotion and Drug Eradication Act* (ATPDEA) that replaced the *Andean Trade Preferences Act* (ATPA). Both such programs gave unilateral tariff preferences from the US to some exports from four of the CAN members – including Colombia and Peru. This t_2 acts as a control period in order to verify whether the CAN PE had, irrespectively of ATPDEA, an incremental and positive effect on the performance of Colombia's and Peru's manufacturing exports to the US, to be evaluated in the third time period. Such verification was carried out in the way that is explained later. With regards to the final period of analysis (t_3), it covers the years 2004-2007 and serves to evaluate which of Colombia's and Peru's manufacturing exports to the US show sound evidence of the existence of the CAN's PE.

Regarding the EU market, t_2 covers the period 2002-2005 because these are the years that preceded the change from GSP Drugs to GSP Plus, the unilateral program by which the EU gives trade preferences to some exports of CAN members. This t_2 acts as a control period (for a similar verification purpose as the above explained) which also considers the ATPDEA, because of the possibility that the US' unilateral liberalization may have had an indirect positive impact on the manufacturing exports of Colombia and Peru to the EU as well, to the extent that the entry into the US market may have strengthened exporting capacities and thereby facilitated the access to other developed markets as the EU's. The final period of analysis (t_3) covers the years 2006-2007 and serves a similar evaluating purpose as the above already explained, implying that it also acts as a control period to verify, regarding the GSP Plus, in the same way it is verified regarding ATPDEA in t_2 of the case related to the US market.

Basic Criteria for detecting the existence of a 'Platform Effect' (PE)

In accordance with the conceptual framework reviewed (Section I), four general criteria were established, which are designed in a combined way such that allows them to jointly evaluate appropriately whether there is a PE explaining the "exporting leap", from the initial good performance of manufacturing exports within the "base extended market" (or BEM, which in this case corresponds to intra-CAN manufacturing exports) to their ulterior good performance also in other specific markets selected as 'target markets' (or TM, which in this study refers to the US and/or EU markets). The criteria are:

C1: Manufactures with good export performance within the BEM (CAN) during t_1. This criterion is used to identify the manufactured products that stood out among the Peruvian and Colombian exports to the Andean sub regional market during the initial period. It is meant to evaluate the extent to which such outstanding export performance intra-CAN may have brought forward a process of learning and development of the capacities required to later on compete successfully in other markets which are larger and more demanding such as those of the US and/or the EU (which, if so, would be found in period t_3).

The analytical framework supporting the choice of this first criterion is found in the theory of regionalism and in the empirical literature on gains from South-South agreements discussed in Section I, such as the accumulation of economies of scale (external and internal) which would potentially explain that the good intra-CAN export performance in t_1 may extend later to markets outside the CAN such as the US' and/or EU's in period t_3.

C2: Manufactures having a good performance in their exports to the TM (US and/or EU) in t_3 with respect to t_1. This criterion is used to identify those products of the sample that, in the final period of the analysis, stand out among the manufacturing exports of Peru and Colombia to the said developed markets, at the same time that remain peculiar among the respective intra-CAN exports. These are the products that would best exemplify the arguments in favor of trade compatibility between North-South PTAs and South-South PTAs, posed in the theoretical literature [Fugazza and Robert-Nicoud, 2006] and counting already with some supporting empirical evidence [Nishimizu and Robinson, 1984; SGCAN, 2004].

C3: Causality of C1 to C2.This condition is meant to assess whether manufacturing exports from the Andean countries included in the analysis have managed to achieve a good market position in

the US and/or the EU markets as a result of the exporting capacity and competitiveness incubated within CAN's extended market.

C4: No substitution of the BEM (CAN) by the TM (US and/or EU).This criterion evaluates whether the exporting dynamism towards these developed markets has not involved an abandonment of the CAN market during the final period of analysis (t_3). It responds to the notion that a relevant attribute of trade complementarily between North-South PTAs and South-South PTAs is the non-substitution of markets [Kuwayama *et al.*, 2005].

It is important to point out that our 'Inference Kit' includes (as will be explained later) two additional control factors, other than the causality criteria, which makes the results even more robust. One of such factors seeks, by using the control period t_2, to corroborate the fact that the incremental positive impact on manufacturing exports to the US and/or the EU are explained mainly by the CAN's PE and not by the unilateral trade preferences given through ATPDEA and/or the SGP Plus. The other factor analyzes the possibility of a PE of PTAs with neighboring countries such as Chile and MERCOSUR members, in order to control that it was indeed the CAN –and not those other South-South PTAs- the main source of the PE that propelled some of the Andean manufacturing exports to the US and/or EU markets.

Set of trade indicators

Our 'Inference Kit' contains the following trade indicators which, processed together, allow for a more rigorous identification of evidence of the PE existence as revealed by the performance of manufacturing exports:

Share of Exports (SOX): $$SOX_{ijh} = \frac{X_{ijh}}{X_{ih}}$$

Intensity Index (IN): $$IN_{ijh} = \frac{\left(\frac{X_{ijh}}{X_{ih}}\right)}{\left(\frac{M_{jh}}{W_h}\right)}$$

Specialization Index (SI): $$SI_{ijh} = \frac{\left(\frac{X_{ijh}}{M_{jh}}\right)}{\left(\frac{X_{ij}}{M_{j}}\right)}$$

(Annual Average) Rate of Growth (RG): $$RG = \sqrt[n]{\frac{\left(X_{h\,\text{avg.}(t=k)}\right)}{\left(X_{\text{h avg.(t=m)}}\right)}}$$

Where:

i = analyzed country; *j*= partner country; *h*= product; *k*= final time-period; *m*= initial time-period; *n*=number of years; X = exports, *M*= imports; *W*= world exports.

The SOX per product (at subheading level) for an exporting country, measures the importance of a specific market (country/region) relative to that country's total exports to the world. This indicator has been used to determine the sample of products in this study, by taking the CAN market as the "*j"* market in t_1. It includes manufacturing exports (from Colombia and Peru, as "*i"* countries in this case) that eventually show a PE in their exports to TM destinations (the US and/or EU) during the final period (t_3), which could be attributed to CAN to the extent that this BEM was their main destination during the initial period (t_1).

The IN (duly adjusted for the purpose of this study[4]) measures the importance of a specific destination market for an export product, relative to the total world market for that product. If the index is greater than one, it means that market "*j*" is relatively more important than the world market in general for exports of product "*h*" made by country "*i*". This indicator is used to evaluate the trade bias towards a particular market (country/region). Therefore when used, one should consider its value as well as its trend over time.

On the other hand, SI measures the relative importance of a product in the exports of a country to a specific market. It is used to assess the exporting bias of a country at a product level on the basis of the product's share in the imports of its trade partner. If the index is higher than one, then country "*i*" is specialized in product "h" within market "*j*".

[4]That is, based on Anderson and Norheim [1993] but considering here the trade flows at a subheading level instead of aggregate trade flows.

It is worth mentioning that our methodology includes IN as well as SI because together they provide complementary information that is useful for researching the PE. In fact, while the IN shows the relative importance of a destination market for an export product, the SI shows the relative importance of an export product in a specific destination market. In complementarily analyzing both indicators we can assess the effect of the BEM (CAN) in the exports of (Colombia and Peru) towards a specific TM (US and/or EU).

With regard to the average annual rate of growth (RG), which measures the exporting dynamism –at the subheading level in this case, it provides information additional to the one from the two previous indicators, that is helpful in order to assess the export performance at the BEM as well as the corresponding TM, bearing in mind the continuity or change in the performance of each export product by destination market, as well as the criterion of non-substitution of markets.

Processing the 'Inference Kit'

The 'Inference Kit' is processed according to some procedural rules and controls in order to ensure robust results. Such procedures and controls are of general use, because they are suitable for application to any empirical case researching the issue of trade compatibility between South-South PTAs and North-South PTAs. But, for the sake of both clarity and to allow for a better understanding of the results to be presented in Section IV, those processing rules and controls will be explained now making reference – when pertinent- to its specific application to the particular case of the CAN (BEM) and the manufacturing exports of two of its members (Colombia and Peru) at the intra-CAN level and to markets outside CAN (TM) of developed countries that are their partners in North-South PTAs (US and the EU).

Allocation of trade indicators and expected outcomes

The indicators mentioned above are assigned in the following manner:

- One indicator of manufacturing export performance in the CAN market: SI in the initial stage (t_1)
- Three indicators of manufacturing export performance in the US and/or EU markets: IN for the first period (t_1) and the final period (t_3) –i.e. the initial level of IN (in t_1) and its trend towards t_3, as well as the SI in t_3.
- An annual average rate of growth to examine the changes (between $t_1$andt_3) in the dynamism of exports (by subheading) to the CAN market as well as to the US and/or EU markets.

If the SI is high in t_1, this means that it is an important product in the BEM during the incubation period. However, SI is not used for t_3 since this indicator does not allow for comparing performances between markets or throughout time and therefore it is not useful for the verification of the criterion of non-substitution of markets.

If the IN (by subheading) with respect to a TM is low in t_1 but shows an increasing trend towards t_3, this would be indicative of a change towards a greater importance of that market for the exports of a specific product. This is required by the second criterion (C2) in order to detect the existence of a PE benefiting a specific export product.

If the SI in the TM is high in t_3, it would indicate that the product is important in that market relatively to the rest of the products exported to the same market during the final period, which is also relevant to comply with C2.

With regard to the rates of growth (RG) of exports intra-CAN and to the US and/or EU markets (from Colombia and Peru), we expect those to be positive and, additionally:

- In order to ensure that the condition of non-substitution of markets for the export product in question (C4) is fulfilled, it is expected that its RG intra-CAN be greater than the average RG of the exports intra-CAN in the subheading to which the product belongs. This allows for assessing the export dynamism of the product to the BEM by comparison to similar products.

- Regarding the average RG of exports of the product to a TM, it is expected to be higher than the average RG of imports of the product by the TM, in order to assess the product's comparative export performance in the TM (C2).

Therefore, the values expected for each of these indicators signal altogether a causality relation (C3) between the good performance of exports (by subheading) within the BEM (intra-CAN exports) and the subsequent good performance of exports (in the same subheading) to the TM (US or EU), during the timeframe between the first period and the final one. If such causality arises, it would indicate the existence of a PE.

But such indications would still be weak, reason why our methodology includes the application of additional conditions and three tests, in order to obtain further proof of causality –and hence of the PE's existence, or to otherwise discard such indications. The additional conditions and tests for verifying the robustness of the PE evidence will be presented immediately after the following complementary explanation on the trade indicators processing.

Standardization and scoring system

In order to duly implement the combined processing of indicators such as IN and SI, which yield a value between 0 and infinite, they have been standardized using the following conventional formula:

$$\frac{Indicator - 1}{Indicator + 1}$$

In this way, values are limited to -1 to 1, thus allowing for applying the following scoring system:

If the expected value of the standardized indicator is high, the subheading is given a score according to the following levels:

Non Standardized Indicator	Standardized Indicator	Level	Score
[0 ; 0.09[	[-1 ; -0.5[	Very Low	0
[0.9 ; 1.1[	[-0.5 ; -0.05[	Low	1
[1.1 ; 2[	[-0.05 ; 0.33[	Medium	2
[2 ; oo[	[0.33 ; 1[	High	3

However, if the expected value of the standardized indicator is low, such as is the particular case of the initial IN (t_1) in the TM, the corresponding subheading is given a level according to the following standardized ranking:

Non Standardized Indicator	Standardized Indicator	Level
[0 ; 0.5[	[-1 ; -0.33[	Very Low
[0.5 ; 0.9[	[-0.33 ; -0.05[	Low
[0.9 ; 1.1[	[-0.05 ; 0.05[	Medium
[1.1 ; oo[	[0.05 ; 1[	High

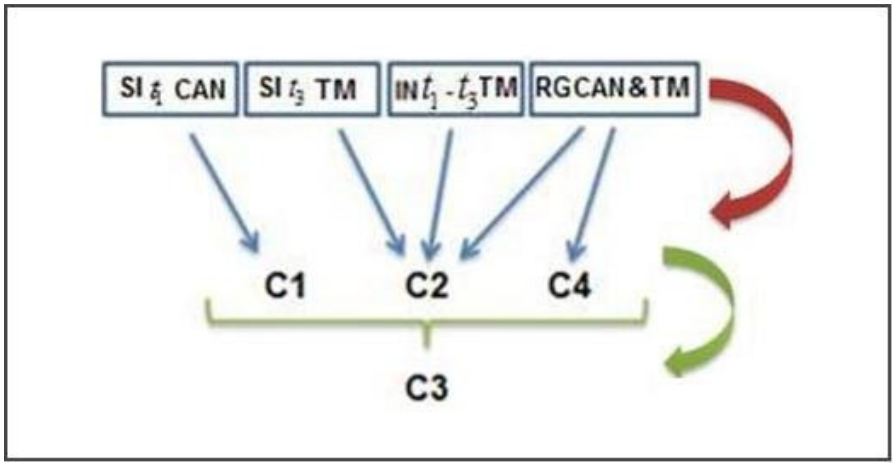
The score is then assigned on the basis of both the level at t_1 as well as the trend between t_1 and t_3:

IN t1 level	IN trend t1-t3			
	Very Low	Low	Medium	High
Very Low	0	2	3	5
Low	0	1	2	3
Medium	0	0	1	2
High	0	0	0	1

For the specific case of the average rate of growth (RG) of the manufacturing export subheadings intra-CAN and to the TM between t_1 and t_3, a score is given as per each of the following scenarios:

			RG X i to TM			
			< 0		> 0	
			< RG M TM	> RG M TM	< RG M TM	> RG M TM
RG X i CAN	< 0	< RG Intra CAN	0	0	0	0
		> RG Intra CAN	0	0	0	1
	> 0	< RG Intra CAN	0	0	2	3
		> RG Intra CAN	0	0	3	5

As shown in the following graph, the indicators are listed according to the basic criteria for detecting the PE's existence, which fulfilling is evaluated by using the corresponding indicator allocation already explained. Given that all the basic criteria have the same importance, we have taken an average of the results obtained for the indicators associated with C2, which is the only basic criterion that needs to be evaluated by more than one indicator. In addition, for the specific cases of the average RG of the manufacturing subheadings exported intra-CAN and to the TM, as well as for the trend of IN in the TM, the resulting scores are multiplied by 3/5 in order to keep a maximum score of 3, as is the case of the other indicators.



The former implies that the indicators have the same weight. This facilitates the final scoring and is explained by the following: even though we do not know the relative weight of each indicator in terms of its specific contribution to identifying the PE, nor do we know what is the contribution of each of the segments within the thresholds shown before, we do know that the basic criteria are all necessary jointly to identify the PE, and we do also know that the ranking of the scores obtained –when compared to those expected- gives us a valid guide as to the level of the evidence indicative of the PE's existence.

Consequently, in order to simplify without being arbitrary, we are assuming that the basic criteria have similar importance for detecting the PE, and hence the weighting system proceeds neutrally by assigning an equal weight to each indicator. Thus, the existence of the PE is graded according to the following final score that defines the level of evidence found:

PE Evidence	Final Score
No evidence of PE	[0 ; 4.5[
Low evidence of PE	[4.5 ; 6[
Medium evidence of PE	[6 ; 7.5[
High evidence of PE	[7.5 ; 9[

Additional conditions: minimum export value and filters

For the sake of a rigorous identification of the PE existence, first we need to discard those manufactures that in t_3 are below a reasonable level in terms of the size of their exports to the TM. Based on experience, such minimum level was set at an annual average export value of US$ 30,000 in the final period t_3.

In addition, the following three conditions were identified as necessary altogether, meaning that if a subheading under evaluation fails to comply with any one of the three it would get a total score of 0, thus effectively resulting in it being discarded from the search for a PE:

i. Rate of growth (RG) of IN in the TM $t_1 - t_3 > 0$
ii. If RG Xi Intra-CAN < 0, then it is necessary that RG Xi Intra-CAN >RG X Intra-CAN
iii. RG XiTM$t_3 > 0$

Complementary tests

Even though the inclusion of the aforementioned additional conditions improves the evidence of causality and hence of the PE's existence, in order to get better proof, three complementary tests are applied. These consider the possibility that the effects of other tariff preferences in force during the period of analysis may have been predominant or decisive in explaining the results obtained from processing our 'Inference Kit' as described above. Reason why such results are considered as provisional and subject to verification by the means of the following three complementary tests:

Tests 1 and 2: Unilateral Tariff Preferences (ATPDEA and GSP Plus)

The subheadings showing evidence of a PE could have benefitted not only from the CAN's free trade area but also from tariff preferences unilaterally granted in the framework of the APTDEA and/or the GSP Plus. That is why it becomes necessary to verify whether the performance of exports to the TM (US and/or the EU) in t_3 of those manufacturing subheadings showing evidence of a CAN PE that were also beneficiary of the said unilateral preferences, is better than the performance of subheadings beneficiary of the latter but that do not show evidence of a CAN PE. With this purpose, and because of the reasons stated when the periods of analysis were explained, the study includes one test (ATPDEA) for the US market and two tests (GSP Plus and ATPDEA) for the EU market.

With regards to the US market, all the subheadings that benefitted from ATPDEA during t_3 were listed in order of exporting performance. Such performance is ranked by taking the export growth rate with respect to t_2. If in the top segment of the list are the subheadings showing evidence of a CAN's PE, we infer that their outstanding exporting performance can be attributed to such PE to a greater extent than to ATPDEA.

With regards to the EU market, the ATPDEA test is similarly applied. For the GSP Plus, the ranking of manufacturing subheadings that benefitted from these EU unilateral preferences was elaborated as per the change in their export performance from t_2 to t_3 measured by the respective rate of growth. The difference with the ATPDEA test lies in the fact that the GSP Plus was not in force by t_2, but its predecessor the GSP Drugs still was and, in this sense, there is similarity with the ATPDEA test that also inherits the workings of its predecessor the ATPA. The rest of the procedure is the same, that is, if the subheadings that appear in the top of the ranking are those showing evidence of a CAN PE, we infer that their outstanding exporting performance can be attributed to such PE to a greater extent than to the GPS Plus.

Test 3: Other South-South PTAs

The application of the first basic criterion (C1), serving to define the sample of manufacturing subheadings potential beneficiary of a CAN PE, may give the impression that we are assuming that the PE originates only from intra-CAN trade. Such an assumption can easily be disputed in the context of overlapping PTAs, where the possibility of a contribution to the incubation process from other comparable markets cannot be disregarded –that is, of neighboring developing country markets. This is the reason why, in order to verify that the PE effectively took place in the CAN market and not in the markets opened by other South-South PTAs, we analyzed the export performance of the manufacturing subheadings with a potential PE in the markets of Chile and of MERCOSUR[5].

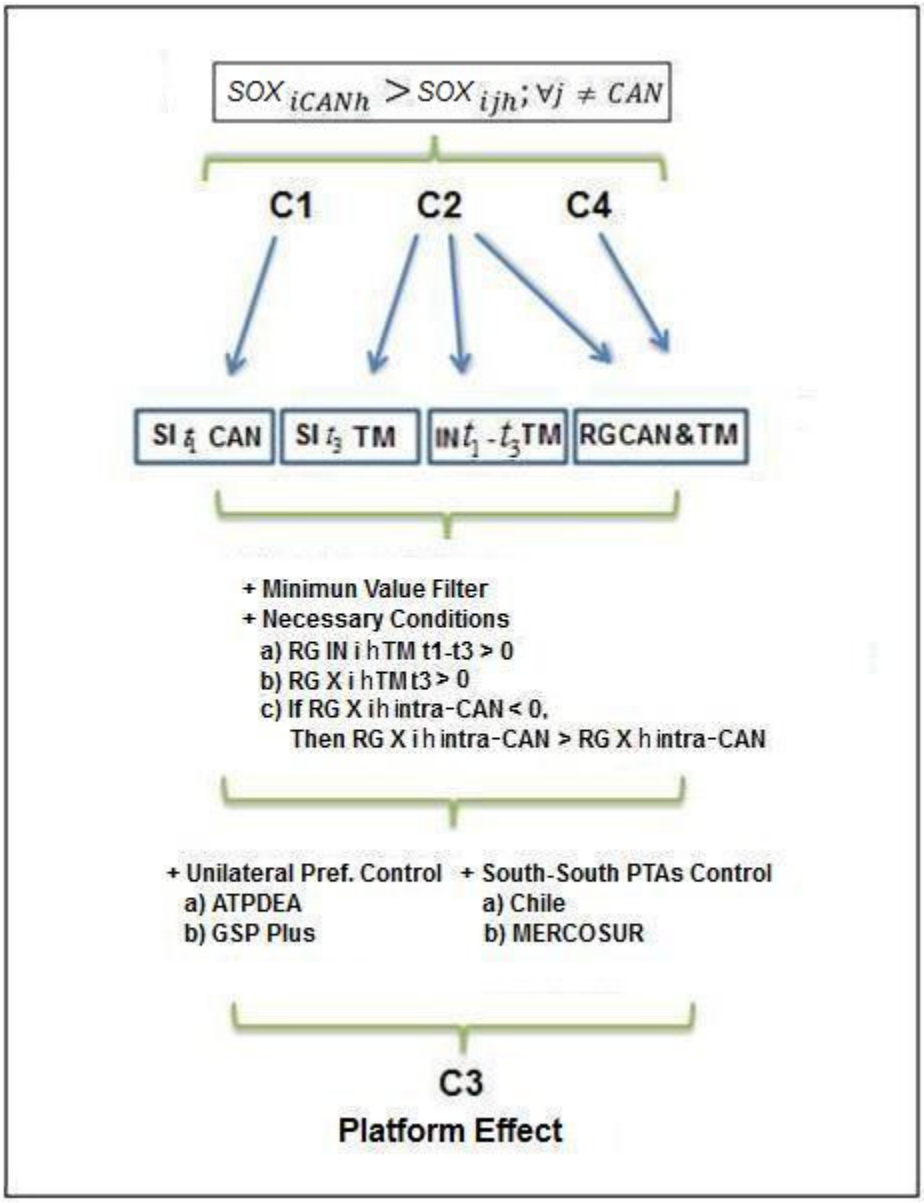
In order to carry out the latter, the whole 'Inference Kit' was processed again, this time for an extended sample including those subheadings with manufacturing exports from Colombia and Peru that met the following two conditions: that their second destination market was Chile or MERCOSUR members during the incubation period (t_1), and that the share of these other developing markets represented at least 50% of CAN's share during t_1. The reason for these conditions is to ensure that the market of the other South-South PTA that may originate the PE be a country or group of developing countries comparable to CAN members in terms of geographical proximity which at the same time has a relevant share as destination market.

The aim is to find manufacturing subheadings for which the PE origin could be attributed not only to the CAN market but also to the preferential access to the markets of Chile or of MERCOSUR members. The result of this exercise depends on the scores obtained with the methodology described earlier.

[5]A point of clarification: in the initial period (t_1), Colombia and Peru did not have with Chile and/or MERCOSUR members comprehensive PTAs capable of forming free trade areas comparable to CAN's in terms of coverage and depth, which is why it should be expected that CAN had a bigger impact on their export performance during such time period. However, given the relevance of those South American partners as destination markets, the inclusion of this test seems justified.

The 'Inference Kit' in a diagram

As a whole, the 'Inference Kit' looks like this:



CAN's 'Platform Effect': Results

In this section we present and analyze the results obtained with the 'Inference Kit' methodology (explained in Section III) as applied to the specific case of the CAN and the manufacturing exports of two of its members –Colombia and Peru- to the markets of developed countries with whom both of them are now partners in North-South PTAs –i.e. the US and the EU.

This empirical research has been carried out with the twin purposes of contributing with concrete evidence to the current debate on trade compatibility between North-South PTAs and South-South PTAs (briefly reviewed in Section I), as well as of investigating the extent to which the CAN pro manufacturing effects in the exports of its member countries (examined in Section II) may have spillover effects beyond intra-CAN boundaries.

With such purposes, the 'Inference Kit' methodology was applied to the samples of manufacturing subheadings with exports from Colombia and/or Peru to the CAN market as well as to the US and/or EU markets, shown in Table 3. The sizes of the two samples (for Colombia and the other for Peru) were filtered using the conditions that are to be met by a manufacturing subheading in order to be accepted as a candidate to eventually showing evidence of a CAN PE, as per our methodology explained earlier.

Table 3
Research Sample

Number of Manufacturing Export (MX) Subheadings	Peru	Colombia
MX CAN (t_1)	1,809	2,904
MX Main Market CAN (t_1)	1,042	1,939
MX minimum value exported to the US (t_3)	141	456
MX minimum value exported to the EU (t_3)	66	173

Sources: Data in WITS (World Integrated Trade Solution), as processed according to the 'Inference-Kit' Methodology formulated by this research paper's authors.

From the total manufacturing subheadings (according to the 1992 Harmonized System, in order to work with homogeneous data during the whole period of analysis) included in the Lall [2000] classification, 1,809 subheadings registered intra-CAN exports from Peru during the initial period (1994-1997) and

2,904 from Colombia. However, our methodology limits the scope of manufactures analyzed with those that were mainly destined to the CAN market during such initial period (t_1).

In following the latter criterion, 1,042 subheadings were identified for Peru and 1,939 for Colombia. This represents 58% of Peru's manufacturing subheadings with intra-CAN exports and 67% of Colombia's (in t_1 for both). Out of these samples, only 141 subheadings for Peru and 456 for Colombia met the Minimum Exporting Value condition among those exported to the US market, while 66 for Peru and 173 for Colombia fulfilled that condition among those exported to the EU market, during the final period (t_3) in both cases.

At first glance, the number of subheadings seems small. However, besides that there was a considerable reduction due to the filters applied by our strict methodology, in fact the numbers are not small in comparative terms since, for example, during the t_1 period, only 10 subheadings –of primary goods, mostly- accounted for around 70% of Peruvian total exports to the world market.

On the basis of these relatively modest size yet analytically relevant samples of manufacturing exports from Colombia and Peru, the 'Inference Kit' was processed in order to look for evidence of a CAN PE towards the US and/or EU markets, with the following results:

CAN's 'Platform Effect' towards the US market

The results obtained with our methodology show sufficient indication of the existence of a CAN PE towards the US market, manifested as a positive incremental impact on non-traditional manufacturing exports from Peru and Colombia to that market. Nevertheless, the same results also indicate that Peru and Colombia had different performances during 1994-2007, in terms of an unequal profiting of such PE with respect to their main trade partner in the developed world. This latter element is partly explained by their different timing and determination to form part of Andean's main trade integration mechanisms.

Table 4

CAN's Platform Effect (PE) in Peru's and Colombia's Manufacturing Exports (MX) to the US market, by levels of evidence. 2004-2007

	Peru			Colombia		
PE's level of evidence	MX (Number)	MX Value (US$ '000)	MX Value (Share)	MX (Number)	MX Value (US$ '000)	MX Value (Share)
Low Evidence	27	9,133	12.6%	69	60,153	13.6%
Medium Evidence	14	18,715	25.7%	54	202,052	45.8%
High Evidence	16	44,831	61.7%	32	178,480	40.5%
Total	57	72,679	100%	155	440,685	100%
% Total MX to US	**2.7%**	**3.4%**	**-**	**6.3%**	**15.8%**	**-**

Sources: Same as for Table 3

In fact, as can be observed in Table 4, 57 subheadings of Peruvian manufacturing exports to the US show evidence of having benefitted from the CAN PE, which represent 2.7% of Peru's total manufacturing subheadings with exports to the US during 2004-2007. Their exported amount is an annual average of $73 million, which represents 3.4% of total Peruvian manufacturing exports to the US during that period.

While in the case of Colombia, 155 manufacturing subheadings show evidence of taking advantage of the CAN PE, which represent 6.3% of Colombia's total manufacturing subheadings with exports to the US during 2004-2007. The difference with Peru stands out even more when we take into account the value of exports, because in the case of Colombia, exports with such PE evidence reached an annual average of $441 million, representing 15.8% of total Colombian manufacturing exports to the US in that period.

Nevertheless, there is an important similarity in Peru´s and Colombia's results when analyzed by exported value. Indeed, for both countries manufactures with medium and high evidence of the CAN PE represent around 85% of total manufacturing exports with such evidence. Moreover, we find that for Peru this percentage increases as the PE evidence is stronger.

When examining by sectors the manufacturing sector with evidence of the CAN PE, we find –as shown in Table 5- that Peru presents a larger proportion in the LTM sector (44%) followed by MTM (25%) and NRBM (21%). However, only the Peruvian LTM and NRBM stand out in terms of their share in the country's manufacturing exports with PE evidence being higher than their share in total manufacturing exports from Peru to the US (42% and 20% respectively). Colombia also presents a greater proportion of

LTM and MTM with PE evidence (37% and 29% respectively), although only its NRBM exports with PE evidence have a share higher than the one in Colombia's total manufacturing exports to the US (24% and 20% respectively).

Table 5
Sector Structure by Subheadings Number of Peru's and Colombia's MX to the US, with PE evidence and total. 2004-2007

Sector	Peru			Colombia		
	MX to US with PE		Total MX to the US	MX to US with PE		Total MX to the US
	Number	Share		Number	Share	
NRBM	12	21.1%	19.7%	37	23.9%	20.0%
LTM	25	43.9%	42.0%	57	36.8%	38.3%
MTM	14	24.6%	26.6%	45	29.0%	30.0%
HTM	2	3.5%	10.6%	11	7.1%	10.3%
NCM	4	7.0%	1.2%	5	3.2%	1.3%
Total	57	100%	100%	155	100%	100%

Sources: Same as for Table 3

But Colombia's results are comparatively better when the sector structure is analyzed by exported value. In fact, as seen in Table 6, while Peru has made better use of the CAN PE NRBM and LTM (49% and 42% respectively), Colombia has done so primarily in MMT (46%) followed by LTM (22%) and NRBM (21%).This is a reflection of the statistics examined in Section II, which showed that traditional manufactures –basically natural resource-based- predominate among Peru's manufacturing exports, whilst Colombia's are comparatively more diversified towards non-traditional manufactures with higher technological value added.

However, an important similarity was found between the sector structures by export value of the two Andean countries: the combined share of non-traditional manufactures –LTM plus MTM plus HTM- in manufacturing exports to the US with evidence of the CAN PE is higher than in total manufacturing exports to that of the developed market. The opposite is true for traditional manufactures (NRBM), which have a smaller share in manufacturing exports with PE evidence.

Table 6
Sector Structure by Export Value of Peru's and Colombia's MX to the US, with PE evidence and total. 2004-2007

Sector	Peru			Colombia		
	MX to US with PE		Total MX to US	MX to US with PE		Total MX to US
	US$ '000	Share		US$ '000	Share	
NRBM	30,758	42.3%	51.1%	92,379	21.0%	47.7%
LTM	35,256	48.5%	44.8%	97,746	22.2%	26.7%
MTM	5,256	7.2%	2.7%	202,135	45.9%	15.8%
HTM	567	0.8%	1.0%	21,838	5.0%	3.9%
NCM	842	1.2%	0.5%	26,587	6.0%	6.0%
Total	72,679	100%	100%	440,685	100%	100%

Sources: Same as for Table 3

Moreover, when we analyze the results by subsector, Table 7 shows that, in Peru's manufacturing exports to the US with CAN's PE evidence, the largest shares correspond to non-agricultural MBRN (37%) and textile and clothing LTM (36%). However, Other LTM and chemical and compound MTM stand out in terms of having a share in Peru's manufacturing exports to the US with PE evidence (11% and 5% respectively) higher than in Peru's total manufacturing exports to the US (6% and 2% respectively).

Colombia, on the other hand, stands out in exports with a higher technological level. In fact, among its manufacturing exports to the US with CAN's PE evidence, the largest shares correspond to two MTM subsectors: chemical and compound (33%), followed by machinery and equipment (13%). Even more revealing are Colombia's results when the sub-sector structure of its manufacturing exports to the US with PE evidence is compared to the sub-sector structure of its total manufacturing exports to the US, because in these terms not only do the two aforementioned MTM sub-sectors (33% vs. 12% in the case of chemicals, and 13% vs. 4% in machinery) stand out, but also does the electric and electronic equipment HTM subsector (4% vs. 2%, respectively).

Table 7
Subsector Structure in Value of Peru's and Colombia's MX to the US, with PE evidence and total. 2004-2007

Sector	Subsector	Peru			Colombia		
		MX to US with PE		Total MX to US	MX to US with PE		Total MX to US
		US$ '000	Share		US$ '000	Share	
NRBM	Agro-based	4,109	5.7%	9.0%	36,461	8.3%	6.0%
	Other NRBM	26,649	36.7%	42.1%	55,918	12.7%	41.7%
LTM	Shoes & Leather-based	1,042	1.4%	0.2%	1,005	0.2%	1.8%
	Textile & Clothing	26,079	35.9%	38.5%	43,808	9.9%	17.1%
	Other LTM	8,134	11.2%	6.1%	52,933	12.0%	7.7%
MTM	Transport equipment	-	-	0.1%	133	0.0%	0.2%
	Machinery & Equipment	1,617	2.2%	1.0%	58,083	13.2%	3.9%
	Chemicals & Compounds	3,639	5.0%	1.7%	143,919	32.7%	11.6%
HTM	Electronic & Electric	567	0.8%	0.9%	17,861	4.1%	1.8%
	Other HTM	-	-	0.1%	3,977	0.9%	2.1%
NCM	Non-classified	842	1.2%	0.5%	26,587	6.0%	6.0%
Total		72,679	100%	100%	440,685	100%	100%

Sources: Same as for Table 3

To sum up, all these results show that the CAN PE towards the US market may not be large quantitatively but is qualitatively of great importance, because it propels to a greater extent manufacturing exports with more value added, in which Peru and Colombia were unable to compete successfully in the US market at the beginning of the Andean free trade area. Nevertheless, such PE has yet to consolidate, especially with regard to the number of manufacturing subheadings exported to the US, which at present is still represented to a large extent by LTM and NRBM.

CAN's 'Platform Effect' towards the EU market

Unlike in the case projected for the US market, the results obtained with our 'Inference Kit' methodology do show enough indication of the existence of a CAN PE towards the EU market, manifested as a positive incremental impact on non-traditional manufacturing exports from Peru and Colombia to that market. Results also show indications that Peru and Colombia had uneven performances along the 1994-2007 period in terms of taking advantage of CAN's PE towards their trade partner that ranks second among the developed regions. This is likely related to their different speed and determination to adopt the Andean main trade integration mechanisms.

In fact, as shown in Table 8, only 1.5% of manufactures exported by Peru to the EU during 2006-2007 presented evidence of having benefitted from the CAN PE, which in terms of average annual export value (US$ 12 million) represents a minimal 0.5% of total Peruvian manufactures to the EU in that biennium. Results obtained for Colombia are better in aggregate terms: there is evidence of the CAN PE in 3.1% of its manufactures exported to the EU in that biennium, which amount to an average annual exported value of US$ 61 million or 5% of total Colombian manufacturing exports to the EU during those years.

Table 8
CAN's Platform Effect (PE) in Peru's and Colombia's Manufacturing Exports (MX) to the EU market, by levels of evidence. 2006-2007

	Peru			Colombia		
PE's level of evidence	MX (Number)	MX Value (US$ '000)	MX Value (Share)	MX (Number)	MX Value (US$ '000)	MX Value (Share)
Low Evidence	11	8,677	72.3%	17	3,929	6.4%
Medium Evidence	7	1,286	10.7%	16	10,427	17.0%
High Evidence	6	2,031	16.9%	13	47,054	76.6%
Total	24	11,993	100%	46	61,410	100%
% Total MX to EU	**1.5%**	**0.5%**	**-**	**3.1%**	**5.0%**	**-**

Sources: Same as for Table 3

Moreover, for Colombia, unlike Peru, the amount exported with PE increases as the evidence of PE is greater. The increments are such that even though the number of Colombian subheadings with High Evidence (13) is lower than those with Low Evidence (17), the former represents 77% of the total value of Colombian manufacturing exports to the EU with CAN PE evidence.

When examined by sectors the number of manufacturing subheadings with CAN's PE evidence (Table 9), for Peru these belong mostly to the LTM sector (46%) followed far behind by MTM and NRBM (21% each). However, Peru's HTM also stands out because of its share in manufacturing exports with PE evidence (13%), which is higher than their share in total Peruvian manufacturing exports to the EU (10%). In the case of Colombia, there is a better use of the PE in manufactures with more value added such as MTM (42%), followed closely by LTM (38%). Colombian MTMs also stand out because their 42% share with PE evidence is quite higher than their share in total Colombian manufactures exported to the EU (27%).

Table 9
Sector Structure by Subheadings Number of Peru's and Colombia's MX to the EU, with PE evidence and total. 2006-2007

Sector	Peru			Colombia		
	MX to EU w/ PE		Total MX to EU	MX to EU w/ PE		Total MX to EU
	Number	Share		Number	Share	
NRBM	5	20.8%	19.9%	7	14.6%	20.4%
LTM	11	45.8%	45.7%	18	37.5%	40.7%
MTM	5	20.8%	22.5%	18	41.7%	27.0%
HTM	3	12.5%	10.4%	3	6.3%	10.4%
NCM	-	0.0%	1.5%	-	0.0%	1.5%
Total	24	100%	100%	46	100%	100%

Sources: Same as for Table 3

Nevertheless, when the sector structure of manufacturing exports with CAN's PE evidence is examined by exported value, Peru's results stand out from those of Colombia in two respects, both shown in Table 10. First, Peru shows better results in MTM (75%) whereas LTM does better in Colombia (47%). Second, for Peru there is a sharp contrast between the minimal share of traditional manufactures (NRBM) in its exports to the EU with PE evidence (5%), and their overwhelming importance in total Peruvian manufacturing exports to the EU (90%), while for Colombia there is no such a huge contrast (22% and 35%, respectively).

Table 10
Sector Structure by Export Value of Peru's and Colombia's MX to the EU, with PE evidence and total. 2006-2007

Sector	Perú			Colombia		
	MX to EU with PE		Total MX to EU	MX to EU with PE		Total MX to EU
	US$ '000	Share		US$ '000	Share	
NRBM	601	5.0%	90.4%	13,196	21.5%	34.6%
LTM	1,685	14.0%	8.5%	28,781	46.9%	10.4%
MTM	8,967	74.8%	0.9%	17,554	28.6%	54.2%
HTM	742	6.2%	0.1%	1,878	3.1%	0.6%
NCM	-	0.0%	0.0%	-	0.0%	0.2%
Total	11,993	100%	100%	61,410	100%	100%

Sources: Same as for Table 3

Additionally, the results by subsectors (Table 11) show that for Peru, chemicals and compounds are the most important (74%) within the MTM with CAN's PE evidence towards the EU market. This is even more striking when compared to the share of this subsector in total manufactures exported from Peru to the EU (1%). On the other hand, the results obtained for Colombia show as important subsectors with PE evidence to leather and shoes LTM (29%), machinery and equipment MTM (21%) and Other LTM (7%), which are all subsectors that also have shares in Colombian manufacturing exports with PE evidence higher than in total Colombian manufacturing exports to the EU (4%, 2% and 3%, respectively).

Table 11
Subsector Structure in Value of Peru's and Colombia's MX to the EU, with PE evidence and total. 2006-2007

Sector	Subsector	Peru			Colombia		
		MX to EU with PE		Total MX to EU	MX to EU with PE		Total MX to EU
		US$ '000	Share		US$ '000	Share	
NRBM	Agro-based	483	4.0%	10.7%	5,339	8.7%	14.6%
	Other NRBM	118	1.0%	79.8%	7,857	12.8%	20.1%
LTM	Shoes & Leather-based	-	0.0%	0.5%	17,897	29.1%	4.3%
	Textile & Clothing	430	3.6%	6.1%	544	0.9%	3.5%
	Other LTM	1,255	10.5%	1.9%	10,340	16.8%	2.6%
MTM	Transport equipment	-	-	0.0%	-	-	0.0%
	Machinery & Equipment	139	1.2%	0.2%	12,809	20.9%	1.7%
	Chemicals & Compounds	8,827	73.6%	0.6%	4,745	7.7%	52.4%
HTM	Electronic & Electric	460	3.8%	0.1%	1,760	2.9%	0.2%
	Other HTM	282	0	0.1%	118	0.2%	0.4%
NCM	Non-classified	-	-	0.0%	-	-	0.2%
Total		11,993	100%	100%	61,410	100%	100%

Sources: Same as for Table 3

However, MTM from the chemical and compound subsector have an 8% share in Colombian manufacturing exports with PE evidence, which is much lower than the subsector share in total manufactures exported by Colombia to the EU (53%). Here lies the explanation of what was earlier described about the Colombian MTM sector as a whole (Table 10), which has a share in Colombian manufacturing exports with PE evidence (28.6%) much lower than its share in total manufacturing exports by Colombia to the EU (54.2%). From that it can be inferred that Colombian MTM has, as a sector, a relatively consolidated position in the EU market and that the CAN PE is instrumental mostly to diversify by MTM subsectors the products being exported to that developed market.

In summary, like the results towards the US market, those towards the EU market show that the CAN PE, in spite of its modest quantitative magnitude in terms of number of manufacturing subheadings and exported value, has significant qualitative value because of its contribution to facilitating that Peru's and Colombia's manufactures with a higher value added may compete successfully in demanding developed markets such as the EU's. This contribution is even more significant in the case of Peru, as previously explained.

Testing the CAN 'platform effect'

All the findings presented and analyzed above can be considered as reasonably strong because the resulting evidence of a CAN PE was successfully subjected to the tests included in our 'Inference Kit' methodology, as explained below:

Analysis of sensitivity to minimum export value

According to our methodology's guidelines, the results examined earlier correspond to manufacturing subheadings that fulfill the necessary condition that their minimum export value (MEV) to the target market (TM) be US$30,000 as annual average during t_3. Nevertheless, for the sake of the reliability of the resulting CAN's PE evidence, the findings were put through an analysis of their sensitivity to two hypothetical reductions of the MEV threshold, to annual averages of US$20,000 and US$10,000 respectively.

CAN → US case

In this case, when MEV is reduced, the number of manufacturing subheadings with PE evidence increases for Peru from 57 to 76 (Table 12), which represents an increase of only 0.9 percentage points in terms of their share in total Peruvian manufactures exported to the US. Similarly the number of manufacturing subheadings with PE evidence increases for Colombia from 155 to 190, which only represents an increase in 1.5 percentage points in terms of their share in total Colombian manufactures exported to the US.

Table 12
Subheadings Number of Peru's and Colombia's MX to the US with PE evidence by Minimum Export Value threshold. 2004-2007

Minimum Export Value	Peru		Colombia	
	MX to US with PE		MX to US with PE	
	Number	Share	Number	Share
US$ 30,000	57	2.7%	155	6.3%
US$ 20,000	62	2.9%	169	6.9%
US$ 10,000	76	3.6%	190	7.8%

Sources: Same as for Table 3

As expected, these small proportional increments in the number of manufactures with PE evidence do not entail significant changes in the corresponding export values. Table 13 shows that, in the three scenarios, for Peru the exported amount with CAN's PE evidence represent a same 3.4% of total Peruvian manufacturing exports to the US, while Colombia's share also remains unchanged (15.8%).

Table 13
Export Value of Peru's and Colombia's MX to the US with PE evidence by Minimum Export Value threshold. 2004-2007

Minimum Export Value	Peru		Colombia	
	MX to US with PE		MX to US with PE	
	US$ '000	Share	US$ '000	Share
US$ 30,000	72,679	3.4%	440,685	15.8%
US$ 20,000	72,804	3.4%	441,015	15.8%
US$ 10,000	73,003	3.4%	441,319	15.8%

Sources: Same as for Table 3

CAN → EU case

A similar situation is found towards the EU market. In fact, Table 14 shows an increase for Peru, from 24 to 40 manufactures with CAN's PE evidence a result of reducing the MEV threshold, which only represents an increase from 1.5% to 2.5% in terms of their share in total Peruvian manufactures exported to the EU. And for Colombia there is an increase from 46 to 79 manufactures with PE evidence, which implies an increase from 3.1% to 5.3% in terms of their share in total Colombian manufactures exported to the EU.

Table 14
Subheadings Number of Peru's and Colombia's MX to the EU with PE evidence by Minimum Export Value threshold. 2006-2007

Minimum Export Value	Peru		Colombia	
	MX to EU with PE		MX to EU with PE	
	Number	Share	Number	Share
US$ 30,000	24	1.5%	46	3.1%
US$ 20,000	29	1.8%	59	3.9%
US$ 10,000	40	2.5%	79	5.3%

Sources: Same as for Table 3

Again, in view of such small proportional increases in the number of subheadings with PE evidence, it is not surprising that in this case also there were not significant variations in terms of exported value, which in all three scenarios stays at 0.5% for Peru and at 5.0% for Colombia (Table 15).

Table 15
Export Value of Peru's and Colombia's MX to the EU with PE evidence by Minimum Export Value threshold. 2006-2007

Minimum Export Value	Peru		Colombia	
	MX to EU with PE		MX to EU with PE	
	US$ '000	Share	US$ '000	Share
US$ 30,000	11,993	0.5%	61,410	5.0%
US$ 20,000	12,113	0.5%	61,727	5.0%
US$ 10,000	12,255	0.5%	62,010	5.0%

Sources: Same as for Table 3

Thus, we can conclude that, even though lower MEV thresholds result in a larger number of manufacturing subheadings with evidence of a CAN PE towards the US and/or EU markets, what they represent however proportionally –in terms both of the number of manufacturing subheadings and of value exported to those developed markets- remains practically the same as with the initial threshold and, therefore, there is no significant increase in the size of the CAN PE.

Testing for unilateral programs of tariff preferences

Because of the reasons explained in Section III, it was necessary to verify if Peruvian and Colombian manufactures showed evidence of a CAN PE according to our methodology, or whether they have also benefitted from unilateral programs from the US and/or the EU granting tariff preferences to the entry to their markets –such as the ATPDEA and GSP Plus. The rationale behind this is that when manufactures enjoy such unilateral preferences there is a possibility that the good performance of their exports to those developed markets may be attributed, not to the CAN PE, but to the aforementioned unilateral programs.

Acknowledging that possibility, pertinent tests designed as part of our methodology have been applied, which produced the following results:

CAN → US case: ATPDEA test

Out of Peru's 57 manufactures with CAN's PE evidence, 24 benefitted also from ATPDEA during t_3 (Table 16). Out of those, the large majority (18) rank in one of the two upper quartiles with best performances among the manufacturing subheadings included in that unilateral program, which represent 75% of total Peruvian manufacturing exports to the US that both showed evidence of the CAN PE and benefitted from ATPDEA.

Table 16
Peru's and Colombia's MX to the US with CAN's PE evidence and ATPDEA beneficiary

MX subheadings: number & in value %	Peru	Colombia
[1] MX to US w/ PE & ATPDEA, *of which*	24	97
[2] in two top performing quartiles (t_3)	18	70
% [2] / [1] in value terms	75%	78%

Sources: Same as for Table 3

In Colombia's case, out of its 155 manufactures with CAN's PE evidence, 97 were also ATPDEA beneficiaries. From this latter group, a large majority (70) belong to one of the two upper quartiles with best performance among the list manufacturing subheadings included in that unilateral program. They represent 78% of Colombian manufacturing exports to the US showing PE evidence and having benefitted from the ATPDEA.

CAN → EU case: GSP Plus and ATPDEA tests

In the case of Peru, from its 24 manufactures with CAN's PE evidence, 13 and 20 respectively benefitted from ATPDEA and/or the GSP Plus in t_3 (Table 17). Out of these, 9 and 12 respectively ranked in one of the two upper quartiles for best performance among the manufacturing subheadings included in those unilateral programs. They represent 93% and 72% of total Peruvian manufacturing exports to the EU that at the same time showed PE evidence and benefitted from ATPDEA and/or the GSP Plus.

Table 17
Peru's and Colombia's MX to the EU with CAN's PE evidence and GSP Plus and/or ATPDEA beneficiary

	Peru		Colombia	
MX subheadings: number & in value %	ATPDEA	GSP Plus	ATPDEA	GSP Plus
[1] MX to EU w/ PE (t_3), *of which*	13	20	31	41
[2] in two top performing quartiles	9	12	19	26
% [2] / [1] in value terms	93%	72%	65%	74%

Sources: Same as for Table 3

In the case of Colombia, out of its 46 manufactures with evidence of the CAN PE, 31 and 41 respectively benefitted from ATPDEA and/or the GSP Plus in t_3 (Table 18). From these, 19 and 26 ranked in one of the two upper quartiles with best performance among the manufacturing subheadings included in the said unilateral programs. They represent 65% and 74% respectively of total Colombian manufacturing exports to the EU that at the same time show PE evidence and benefit from ATPDEA and/or the GSP Plus.

Consequently, from these test results it follows that, even though it is true that tariff preferences unilaterally granted through ATPDEA and GSP Plus have facilitated exports of some Andean manufactures, it is also true that for the two Andean countries studied it holds that their manufacturing exports with CAN's PE evidence are those that perform better among their manufactures beneficiary from the said unilateral programs. We can therefore conclude that the CAN PE has effectively contributed to a greater dynamism of some Colombian and Peruvian manufacturing exports to the US and /or EU markets, during the final period of our analysis.

Testing for other South-South PTAs with neighboring countries

Also due to the reasons explained in Section III, it was necessary to verify whether in the origin of the PE benefiting some manufacturing exports from Colombia and Peru there was any influence from other PTAs existing between them and neighboring developing countries during the initial period of analysis. For this purpose, a test was applied by replicating the processing of our 'Inference Kit' methodology including Chile and the MERCOSUR members as possible complementary incubation markets, with the following results:

Towards the US market

In this case, the results of the test show little evidence of a PE incubation process shared by the CAN and such other South American markets (Table 18). For Peru, only two manufacturing subheadings with exports to the US show evidence –yet a weak one- of a PE shared with the Chilean market and none with the MERCOSUR sub regional market. For Colombia, there is no evidence of a shared PE with the Chilean market, and only in two of the manufactures exported to the US there is evidence –one medium and strong the other- of a shared PE with the MERCOSUR market.

Table 18
Subheadings number of Peru's and Colombia's MX to the US with evidence of PE shared by CAN and Chile or MERCOSUR markets. 2004-2007

	Peru		Colombia	
PE's level of evidence	Chile	MERCOSUR	Chile	MERCOSUR
Low Evidence	2	0	0	0
Medium Evidence	0	0	0	1
High Evidence	0	0	0	1
Total	2	0	0	2

Sources: Same as for Table 3

Towards the EU market

Also in this case, the results show very little evidence of a PE incubation process shared between the CAN market and the other South American markets (Table 19). For Peru, only one manufacturing subheading with exports to the EU shows evidence –yet also a weak one- of a shared PE with the Chilean market and none with the MERCOSUR market. For Colombia there is no evidence of a PE shared with Chile, and only one manufacturing subheading showing evidence –though a strong one– of a PE shared with the MERCOSUR sub regional market.

Table 19
Subheadings number of Peru's and Colombia's MX to the EU with evidence of PE shared by CAN and Chile or MERCOSUR markets. 2006-2007

	Peru		Colombia	
PE's level of evidence	Chile	MERCOSUR	Chile	MERCOSUR
Low Evidence	1	0	0	0
Medium Evidence	0	0	0	0
High Evidence	0	0	0	1
Total	1	0	0	1

Sources: Same as for Table 3

In consequence, the results obtained allow us to conclude that the PTAs with Chile and with MERCOSUR members had very little influence as incubation markets complement CAN's, with regard to manufacturing exports from Peru and Colombia to the US and/or the EU. Thus the possibility that our methodology attributes to the CAN a PE from another comparable source can be ruled out.

Summary and Concluding Remarks

This research has found that the main trade benefits of CAN's free trade area are not the well-known diversification of exports from its member countries towards non-traditional manufactures at the intra-CAN level, but also the generation of a 'Platform Effect' (PE) propelling non-traditional Andean manufacturing exports towards markets outside the CAN, including those of developed countries. CAN's extended market plays an incubation role of new export capacities, which materialize at first within the Andean sub-regional market but later leading to similar exports with more value added to successfully reach other markets, included the larger and more demanding markets of the developed world.

Our research was focused on measuring and analyzing the PE for three interrelated academic reasons. First, due to the importance of studying whether PTAs between developing countries (or South-South PTAs, such as the CAN) fulfill one of their key specific objectives, namely to foster a new type of trade that is more industrial and that has an elastic demand. Second, if the latter is indeed proven, to further enquire whether this role is played only within the extended market of the South-South PTA, which could therefore be attributed to the respective and perhaps trade-distorting tariff preferences, or if it extends to other markets signaling the existence of a PE that drives the development of genuine exporting competences that are realized even in developed country markets.

Third, because in spite of the relevance of the contemporary debate on whether there is trade compatibility between South-South PTAs and the fashionable North-South PTAs, there are few empirical studies aimed at verifying the existence of a PE sourced in a specific South-South PTA. The existence of such an effect would explain the interest of some of the member countries of such a PTA in signing North-South PTAs, in order to consolidate and improve the access for their non-traditional exports in developed markets.

The latter explains why this research was focused on formulating a methodology meant to rigorously identify the PE, and also on applying the new methodology to enquire if there is a PE from the CAN in favor of manufacturing exports from Colombia and Peru to the US and/or EU, having in mind the PTAs of last generation –also known as North-South FTAs- negotiated by those two CAN members with such developed countries.

From a general perspective, an innovative dimension of this study has been the methodology which can be applied to other similar cases between South-South PTAs and North-South PTAs. It consists (as fully explained in Section III) of an 'Inference Kit' including a set of trade indicators that are jointly processed following some strict criteria and technical rules, alongside a number of pertinent tests to ensure robust and reliable results.

The results obtained from the application of our methodology have identified the existence of CAN's PE benefiting non-traditional manufacturing exports from Colombia and Peru to the US and the EU. This PE is apparently small in quantitative terms –that is, in a number of manufacturing subheadings with PE evidence as well as in the corresponding export value. Nevertheless, it is worth mentioning that the quantitative size of the PE was reduced by our strict methodology, and also that the number of manufacturing subheadings with PE evidence is fairly comparable to the number of subheadings of primary goods and traditional manufactures which account for the most part for the exports of the two Andean countries to markets outside the CAN.

In fact, the most outstanding feature of CAN's PE is its qualitative importance, due to its role of fostering manufacturing exports with a greater technological intensity. Such exports correspond to non-traditional Peruvian and Colombian manufactures that, at the beginning of CAN's free trade area, were unable to successfully compete in large and demanding developed markets such as the US' and the EU's.

The results obtained with our methodology also show that there is a difference in the level of effective use of CAN's PE made by Colombia and Peru. In particular, Colombia's gains from the PE are quantitatively higher than Peru's, both in terms of the number of manufactures as well as concerning the exported value to the US and the EU markets. This can partly be explained by Peru's delayed and slow entry into the CAN's free trade area especially in comparison to the early and decisive participation of Colombia not only in this area, but also in all of the Andean main trade integration mechanisms.

The consequences of those two Andean countries' different trade strategies with respect to the CAN are particularly striking when analyzed in relation to the US market. In this case, out of the non-traditional manufacturing exports that benefitted from CAN's PE, the most important ones for Colombia are manufactures with medium and high technological level (MTM and HTM), whereas for Peru low technology manufactures (LTM) are important. This means that Colombia shows a better use of the PE in its exports to the US not only in quantitative terms but also qualitatively.

However, the qualitative strength of CAN's PE is evidenced in quite a singular way in the results towards the EU market. In fact, out of the non-traditional manufacturing exports to the EU with PE evidence, for Colombia the most important ones are LTM, while for Peru, MTM stand out more than LTM. This means that Peru made a better qualitative use of the PE towards the EU market, in spite of its inconsistent trade strategy with respect to the CAN, although that strategy took its toll in quantitative terms when compared to Colombia's, as has already been stated.

Concerning the tests applied in order to verify that the better performance of Colombia's and Peru's manufacturing exports to the US and/or the EU markets can be attributed to CAN's PE to a larger extent than to other preferential tariffs, the results confirm that for both Andean countries, the majority of their manufacturing exports with such PE evidence display a more dynamic performance in those developed markets than their total manufacturing exports that benefitted from the ATPDEA and/or GSP Plus. Additionally, the results confirm that the markets of Chile and of MERCOSUR members (neighboring developing countries that participate in South-South PTAs with Colombia and with Peru) have had very little influence as PE incubation markets are complementary to the CAN's. Thus, we can rule out the possibility of our 'Inference Kit' attributing to the CAN a PE that may have been generated elsewhere.

In synthesis, the results obtained objectively demonstrate the qualitative importance of the Andean free trade area as well as the trade compatibility between CAN and the North-South FTAs of Colombia and Peru with the US and the EU. The former because that free trade area promotes an industrial export pattern based more in products with a higher technological value added, not only within the CAN but also for Andean exports to markets outside the CAN, including those of the developed world. It is due to the PE evidenced with this research that we can conclude that the CAN is a valuable free trade area with industrializing trade effects open towards the world market –which confirms the CAN as a good example of 'open regionalism'.

The second result regarding the trade compatibility between the CAN and the aforementioned North-South FTAs relates to the fact that both aim to promote exports with higher technological value added. In this sense, there is no doubt that CAN's PE has fostered Colombia's and Peru's interest to go beyond the ATPDEA and the GSP Plus in order to secure, in a permanent and binding manner, the preferential access to their non-traditional manufactures exported to the US and the EU markets.

For all the reasons above, this research disproves the alleged trade incompatibility between the CAN and the FTAs of some of its member countries with developed countries, as it refutes the notion of a lack of

economic value in Andean integration. From both we can infer the need not only to rescue the CAN sunk into lethargy by the political differences visible in recent years, but also to strengthen it with the help of contemporary and even futuristic contributions contained in some of the last generation FTAs. Today, the smart trade policy for Andean countries is one that is capable of optimizing the benefits from both the CAN and the last generation FTAs with other countries –particularly for those with first-class and complementary economies.

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