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Suggested Citation: Páez, Laura (2008) : Regional Trade Agreements and Foreign Direct Investment: Impact of existing RTAs on FDI and trade flows in the Andean Community and implications of a hemispheric RTA in the Americas, Aussenwirtschaft, ISSN 0004-8216, Universität St.Gallen, Schweizerisches Institut für Aussenwirtschaft und Angewandte Wirtschaftsforschung (SIAW-HSG), St.Gallen, Vol. 63, Iss. 3, pp. 231-261

This Version is available at:
https://hdl.handle.net/10419/231152

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Regional Trade Agreements and Foreign Direct Investment: Impact of ...
Páez, Laura
Aussenwirtschaft; Sep 2008; 63, 3; ABI/INFORM Collection
pg. 231

Aussenwirtschaft, 63. Jahrgang (2008), Heft III, Zürich: Rüegger, S. 231–261

Regional Trade Agreements and Foreign Direct Investment: Impact of existing RTAs on FDI and trade flows in the Andean Community and implications of a hemispheric RTA in the Americas

Laura Páez
Centre for Socio-Economic Development

This paper discusses the possible impact of RTAs on FDI and trade flows in the Americas. First, it briefly looks at selected RTAs with investment protection, namely the North American Free Trade Agreement (NAFTA), the Group of Three (G-3) and the Andean Community of Nations (ACN). It then analyses the effect of RTA membership on FDI flows in the Andean subregion by constructing, running and testing a gravity model with data for the period 1992–2001. The evidence suggests that RTAs in the region foster trade and divert FDI in the ACN despite investment protection. The study finalizes by considering the implications of the Free Trade Area of the Americas (FTAA), a hemispheric RTA with investment protection, on FDI flows.

JEL Codes: F14, F15, F21, F36, K33
Keywords: FDI, RTAs, investment protection, trade creation

1 Introduction

Regional trade agreements (RTAs) are popular instruments of partial trade liberalisation among groups of countries worldwide. They are viewed as "stepping-stones" towards achieving full liberalisation, a compromise solution when the multilateral trade negotiations context fails to provide the desired objectives. The past 10 years have evidenced a spectacular rise in the number of such agreements worldwide. However, it is not clear whether these RTAs contribute to greater trade. In particular, what happens if RTAs also promote FDI through investment protection? Will there be greater investment flows between the countries part to the agreements? Could this occur at the expense of trade flows? In trade theory, trade and FDI flows are often assumed to be substitutes, though no empirical consensus exists in this respect.

The present paper tries to approach these questions by studying three RTAs promoting both trade and FDI in the Americas. The first section introduces the origins and motivations for incorporating investment in the regional integration agenda of the Americas, before briefly focusing on a selected

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group of RTAs with investment protection. These agreements are the North American Free Trade Agreement (NAFTA), the Group of Three (G-3), the Andean Community of Nations (ACN), and, finally, the proposed Free Trade Area of the Americas (FTAA). In the second section the study first reviews the empirical literature on the relation between trade and FDI, and then discusses gravity models as a popular method for studying such flows. The discussion serves as a theoretical foundation for the empirical contribution of this study, where the effect of RTA membership on FDI flows in the Andean subregion is analysed. By constructing, running and testing a gravity model with FDI data for the period 1992–2001, this paper seeks to contribute to the discussion on how investment protection may affect both investment and trade flows. Based on the empirical results, the third section finalises by discussing the findings and considering the implications for these flows of the Free Trade Area of the Americas, a hemispheric RTA incorporating investment rules.

2 Regionalism in the Americas

2.1 The Role of FDI in Integration: background and motivations

The 1980s and 1990s evidenced a proliferation of both bilateral and regional integration efforts in the Americas, paired with economic restructuring and reform. Rapid changes on the international scene due to globalisation, the experience of a debt crisis and the failed success of adopted development models, contributed to a reshaping of political, economic and social objectives in the region.

A new approach towards development translated into export-oriented growth strategies and trade liberalisation, and, consequently, increased need for foreign capital. South American countries deepened integration by reforming the now extinct Latin American Association of Free Trade (ALALC)[1] as well as ACN, and by creating new RTAs, such as the G-3 and MERCOSUR (Common Market of the South), among others. Furthermore, RTAs with developed partners, notably the North American Free Trade Agreement (NAFTA) were also undertaken.

1 ALALC was the predecessor of the American Association of Integration (ALADI), a framework institution for the promotion of integration of the whole Latin American region.

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In the field of attracting foreign capital, debt refinancing with the multilateral lending institutions and a "loss of trust" from international lenders, reduced the possibility of foreign financing. These financial constraints together with an increased awareness of the role of long-term investments in fostering growth and development, promoted countries in the region to increase investment protection by including investment provisions in regional trade agreements, reviving existing investment agreements and enacting investment laws.

The region experienced some important trade growth in the decade of the 1990s due to progress of integration and reform. More importantly, investment flows expanded (either directly or indirectly) because of numerous investment agreements, trade growth and other positive economic signals. This benefited the economies, though arguably not to the extent it could have been desirable, as inherent shortcomings arising from the former "lost decade" impeded full capturing of profits and positive spillovers.

2.2 Selected RTAs in the Americas

After having introduced the background, regional context and motivations underlying FDI protection in RTAs in the Americas, the present section briefly discusses selected RTAs, which contain legal provisions governing FDI. These are the ACN, NAFTA, G-3, and the FTAA draft chapter on investment.[2]

The Andean Community of Nations (ACN)

The Andean Pact originated from the Agreement of Cartagena (1969), under the auspices of ALALC, integrating the Andean countries into a common market. In 1982 it became the Andean Community of Nations, a subregional customs union between 5 Andean countries, namely Bolivia, Colombia, Ecuador, Peru and Venezuela. The creation of the ACN was mostly driven by disparities among members of ALALC.

The ACN attempted to reduce its dependency on the rest of the world, aiming at increasing its competitiveness on world markets, full employment and

2 For a thorough discussion on the investment provisions of these RTAs, the author refers to previous work in PÁEZ (2003, 2004).

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improving welfare. Its main achievements are the creation of a common external tariff (CET), a common tariff classification (NABANDINA) and a system of the rules of origin. Current objectives of the ACN include: (i) physical, communication and transport integration, (ii) perfecting the Andean Price Band system; (iii) liberalising services, (iv) harmonising macroeconomic policies, (v) setting common safeguards vis-à-vis third countries, and (vi) amplifying and deepening foreign relations.

The ACN has three legal instruments regulating foreign investment, namely Decisions No. 291, 292 and 486.[3] These have been adopted at the community level and form a part of national legislation of the member states. Decision No. 291 is the Andean Community Regime for Common Treatment of Foreign Capital and Trademarks, Patents, Licensing Agreements and Royalties. Adopted in 1991, it is the main legal instrument covering foreign investment at subregional level. Decision No. 292 establishes a special Regime of Uniform Provisions for Andean Multinational Enterprises (AMEs). As opposed to Decision No. 291, it deals more specifically with investments in the form of affiliate presence in the member countries and offers a series of incentives to multinationals, upon the fulfilment of specific requirements. In doing so, it indirectly promotes the association of investors of the ACN members, giving the advantages of equal treatment, access to sectors reserved to State-owned or national companies, tax-free profit transfers and capital repatriation.

Finally, Decision No. 486 establishes the Common Intellectual Property Regime regulating trademarks and patents, protecting industrial secrets and denominations of origin, among others. With its adoption, members adjusted their internal laws to international standards, such as those contained in TRIPS and the Paris Convention. The decision also goes beyond international provisions by including protection with regards to food and beverages, microorganisms, biotechnology procedures and animal and plant varieties.

The North American Free Trade Area (NAFTA)

NAFTA was created in 1995 as an RTA between the United States, Canada and Mexico. The agreement includes a comprehensive set of measures concerning goods, trade and tariffs; market access; a system of rules of origin

3 These decisions are available from CAN, Internet: http://www.comunidadandina.org (as of 26 May 2008).

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and technical standards; health and phytosanitary standards, and common safeguards. Further, services, investment, telecommunication, public procurement, competition rules, intellectual property rights and dispute settlement are also regulated. Increased trade volumes and investment among its members, which has more than doubled in the last 9 years can be regarded as successes of NAFTA. Further, the flows with the rest of the world have also significantly increased.[4]

Mexico, as part of this initiative, has benefited from its membership, improved its economic situation through a series of reforms targeting inflation, stable interest and exchange rates, sustained growth, higher employment rate and a more efficient public sector. For the first time, a developing country joined developed partners on equal terms in an RTA. NAFTA also allowed to lock-in reforms and institutionalize change. However, the initiative is far from complete. Some issues are still pending, such as internal affairs, poverty and social inclusion, tax system, and energy and telecommunication sector.

NAFTA Agreement includes a whole chapter on foreign investment. Chapter 11 deals with investment, dispute settlement and definitions. Its more contentious rules are those of dispute settlement, which allows private parties (investors) to sue states if their rights provided under the agreement are being violated. Other provisions focus on such aspects of investment as financial services (Chapter 14), competition, monopolies and state enterprises (Chapter 15).

The Group of 3 (G-3)

The G-3 is an RTA between Colombia, Mexico and Venezuela, created in 1995. Its origins date back to the former "Contadora Group", which gave rise to this permanent agreement, during the 5th Ministerial Conference of the Central American Countries, the European Community and the Contadora Group in 1989.

The agreement is of broad character, governing trade, science and technology, energy, telecommunications, transport, finance, tourism, culture, environment, fishing and aquaculture, cooperation with Central America and the Caribbean, education and prevention of disasters and calamities. It seeks

4 For empirical evidence on the effects of NAFTA see for instance Levi Yeyati, Stein and Daude (2001).

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reliable and ample market access through gradual elimination of tariffs, taking due regard of the sensitive sectors of each country. It further establishes disciplines for country measures seeking to protect health and human, plant and animal life, without raising barriers to trade. Furthermore, it also contains a dispute settlement mechanism and covers non-competitive practices.

The G-3 has very "NAFTA-like" investment provisions, offering higher level of protection than ACN Decisions No. 291 and 292. These are contained in Chapter XVII of the G-3 agreement, which consists of two sections, one on "Investments" and the other on "Investor-to-State Dispute Resolution" and also includes two Annexes on reservations by the Parties and rules to be applied in junction with the dispute settlement mechanism.[5]

The FTAA

Finally, the main integration project in the Americas is the FTAA. Envisioned in the Miami Declaration of 1994 of the first Summit of the Americas, it was projected as a hemispheric free trade area among 34 countries. The agreement seeks to regulate diverse areas such as market access, services, public sector purchases, dispute settlement, agriculture, intellectual property, subsidies, antidumping, compensatory rights and competition, and notably investment.

Section on investment in the FTAA, occupies the third chapter of the second Draft Agreement, and tentatively focuses on: scope of application, various standards of treatment, performance requirements, key personnel, transfers, expropriation and compensation, general exceptions and reservations, dispute settlement, basic definitions, transparency and labour and environmental standards, investment in relationship with other chapters, extraterritorial application of laws on investment-related issues and special formalities and information requirements.

The draft agreement has been under negotiations since 1994 However, considerable political opposition from several countries, together with the difficulties linked to reaching consensus on the draft text, have stalled the process of launching the FTAA. If approved, it is probable that the FTAA will absorb the existing RTAs in Latin America and the Caribbean. The biggest

5 Chapter XVII of the G-3, Internet: http://www.economia.gob.mx/?P=2123 (as of 26 May 2008).

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challenge lies in converging towards an agreement, which would be consistent with existing obligations of the different members at a multilateral and regional level, and which would reflect the individual objectives of the member states.

3 The impact of RTAs on trade and FDI flows

In the former section, we observed that several RTAs in the Americas have incorporated investment protection in their regulation scope. Keeping this *in mind*, this section tries to answer the question whether there is also an economic case for FDI rules in RTAs. *Specifically*, how do these rules impact FDI flows? What influence do these rules have on trade and FDI? Will both trade and FDI be fostered or will either of them increase at the expense of the other as result of investment protection?

Empirical evidence on causality between trade and FDI is mixed. Part of the literature points to trade promoting FDI. Assuming this was the case, trade liberalisation in an RTA which includes investment rules would increase trade and FDI jointly. Hence there would be "complementarity" between these flows. Another part of the empirical literature argues and that if trade barriers are eliminated, firms will no longer invest in foreign locations, preferring to serve a foreign market through export. Here, trade and FDI flows are assumed to be related through "substitution".

What follows is a general review of the empirical research concentrating on the relation between trade and FDI. The main problems and limitations encountered in the empirics of trade and FDI are discussed and this discussion serves as a basis for the empirical analysis conducted in section 4 of this chapter.

3.1 Evidence on the causal relation of trade and FDI: Literature Review

There has been a very rich development of empirical evidence documenting the relationship between international trade and FDI. Most of the literature in the field focuses on FDI of multinational enterprises (MNEs) present in foreign markets. It discusses the relationship between trade and investment based on the evidence provided by the international operations of such MNEs, arguing either in favour of substitution or complementarity.

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Substitution

Firms that have traditionally exported and then decided to locate production abroad by investing in a plant to supply their foreign markets are said to be substituting exports for FDI. "Substitution" may take place when firms seek to circumvent foreign trade barriers. For example when import tariffs raise the cost of exporting this channel of supply may no longer be profitable for a firm. In such a case, the firm can avoid the tariff if it locates a production plant in its market of export with FDI.[6] Traditional internalisation theory[7] assumes substitution based on transaction costs such as trade barriers.

Several authors have undertaken empirical testing for substitution. WILLIAMSON (1975), for example, in a study on internalisation defines the level of export costs as a decisive factor for MNEs to choose between exporting and investing in a plant abroad. In contrast, BELDERBOS and SLEUWAEGEN (1998) see changes in the level of trade barriers and protection as determinants, where firms facing an actual or threat of import protection in the destination market would substitute trade and locate production in their export market.

Another study conducted by SVENSSON (1996) argues that a "displacing effect" (that is substitution) on exports will depend on the level of scale economies in the host country, the volume of exports and affiliate sales. Finally, HEAD (2001) develops a model for measuring substitution, which considers intermediate products and the level of vertical integration of MNEs, among other decisive factors. Results reveal that finished (exports) goods from the parent company are being replaced through production in foreign plants, which would in turn import parts for their manufactures from the parent company through "intrafirm substitution".

Complementarity

Contrary to the main assumption of substitution, firms may decide to source a foreign market through a combination of channels, rather than solely

6 This type of FDI follows the "tariff jumping" argument of circumventing a tariff through local presence.

7 Internalisation theory was originally developed by COASE (1937). He argues that firms will coordinate the allocation of resources and factors for production when transaction costs in the market are too high. Thus, firms substitute the market when conducting the same coordinatory operations instead of the price mechanism, and are said to be "internalising" costs.

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through exports or FDI. For instance, they may invest in a subsidiary to source foreign market (and also third markets), and even import some of their foreign production back home to the parent company. Thus, trade and investment flows are considered "complementary" when a firm conducts both operations jointly.

As with substitution, empirical research on complementarity is rich. LIPSEY and WEISS (1984) find complementarity when firms producing one good in a given market experience an increase in demand for all of their products. This occurs due to advantages related to local presence, such as providing sales and after-sales services, a "commitment to the market effect" on consumers, or the efficient and quick delivery and distribution. The level of vertical integration also plays a role for complementarity, since it accounts for intrafirm exports of intermediate goods. Similarly, SWENSON (1997) focuses on vertical production as driver of complementarity, when looking at the Japanese and American car production. She observes that the foreign sourcing of parts in firms is also determined by national identity considerations. Therefore, even though Japanese firms in the United States may have increased the local content of their car manufactures, exports (that is imports of car parts stemming from Japan) have not been totally eliminated and the elasticity of substitution of these imports is much lower than that of US firms.

BRAINARD (1993) also identifies that firm presence in foreign markets provides proximity advantages. He establishes that lower transport cost and trade barriers, together with higher levels of scale economies (relative to the home market) are determinants of complementarity. This is particularly the case when home and foreign markets are similar.

3.2 Limitations and Problems encountered in Empirical Analysis

Intertemporal Sequence

In some of these studies, there appears to be an intertemporal link between FDI and trade. In the case of substitution, trade occurs first, and is later "substituted" by local production in the foreign market, by FDI in the form of a subsidiary. Although the opposite may be possible, most of the studies assume trade occurs prior to the investment. In other words, trade is an ex ante condition for investment to take place.

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For complementarity, it is assumed that a firm is present in the host country before any trade occurs. As a result of such presence, trade in intermediate goods (for example through vertical integration), or the export of other goods and services from the firm (or the parent company) becomes effective at a later stage. Thus, the sequence of trade and FDI has been an important element of empirical scrutiny. Authors such as BLONIGEN (2000) have accounted for this by lagging the data of trade (and FDI) flows in time, in order to neutralize any intertemporal bias affecting the evidence on causality.

In other words, most empirical models assume that trade and investment occur in a two-stage sequence, where the dependent variable (be it trade or FDI) takes place in the second period of the sequence, and is therefore lagged with the aid of a logarithmic formulation such as log (FDI + 1).

Independent Variables

Another important element of many studies on trade and FDI is controlling for endogeneity. Given the nature trade and investment, both flows often share the same determinants, and may thus be "explained" by the same variables. For example, it is argued that greater economic growth spurs trade. The same is true for FDI. Generally, GDP is used as a variable to account for such growth. Thus, in empirical testing on the causality of trade and FDI, such a variable may affect the explanatory power of either. This complicates an assessment of the impact of trade and FDI on each other (that is complementarity or substitution) if both react to the presence of a common factor.

According to RIES (2001), the underlying problem of ensuring independent variables is that the firm that sees a country as an attractive location for its FDI will probably also want to export its products due to the country's features and market. This is especially the case if the firm is competitive in (diverse) products or production methods. It provokes an "endogeneity bias", which is not accounted for if it is not controlled with an exogenous variable, which may only possible with firm-level data.

GRUBERT and MUTTI (1991) control for endogeneity by using exogenous indicators on the relative attractiveness for investment of American MNEs. Using data on intrafirm exports of intermediates, tariff levels, taxes on FDI and average employee compensation, they find net complementarity be-

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tween investments and exports. In a comparable study, HEAD and RIES (1997) also find strong complementarity in the Japanese car industry.

BLOMSTROM et al. (1987) control for endogeneity by using data on changes in export levels to each of the destinations, instead of total US and Swedish exports at industry level. Evidence shows complementarity, since affiliate presence abroad does not reduce exports, and tends to increase export levels, destinies, and products over time.

In conclusion, since complementarity is likely to occur in the absence of a control for endogeneity, identifying exogenous variables, which have a direct effect on FDI and not on trade, is needed to eliminate the bias, and can generally only be considered if sufficiently disaggregated data (such as firm-level data) is available.

Aggregation

Another problem often encountered in empirical analysis of trade and FDI is aggregation. Similar to the endogeneity bias, aggregation can affect causality of these international flows. For example, if an unforeseen event such as financial crises has a disruptive effect on international business activities of a country, it will naturally affect trade and investment, as these flows are linked through the balance of payments. Some researchers use firm-level data to control for aggregation when studying complementarity or substitution. For example, HEAD (2001) uses firm-level data, considering it is effective for eliminating this bias, whilst BLONIGEN (2001) controls for aggregation by taking more specific product-level data in his study of the Japanese car industry. However, as it often is the case with empirical analysis, microlevel data is difficult to obtain.

3.3 Theoretical Foundations of Gravity Models and Empirical Evidence

In the past years, gravity equations were one of the most frequently used empirical tools to analyze goods and factor movement across national barriers. Originally introduced by ANDERSON (1979) for the purpose of studying international trade, these equations relate bilateral trade flows with variables such as GDP, distance, transport costs and trade barriers to infer how these flows may be affected under the presence of customs unions or free trade areas such as RTAs.

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The development of gravity models can be viewed as an empirical response to Viner's study of RTAs. VINER (1950) observed that certain agreements could be trade diverting, an undesired outcome of preferential trade. RTA barriers such as tariffs will raise the price of competitive imports, compared to products which are exempted from tariffs under the preferential arrangement. As a result, RTA goods that are "artificially" cheaper will substitute these imports. This phenomenon is known as "trade diversion" since no new trade is created by the RTA, and original trade with previous partners are simply diverted to new RTA members. This situation is undesirable as the resulting price increases are borne by consumers, whilst firms based in the regional market capture gains from liberalisation in the RTA. Foreign non-RTA firms may overcome this barrier by supplying their export markets, lost to the new RTA members, with local production (that is "tariff jumping" FDI).

In contrast, "trade creation" occurs when costly domestic goods produced by indigenous firms are replaced by cheaper imports from RTA members. The resulting lower prices favour consumers and an increase in consumption and consumer surplus is observed. Uncompetitive firms will exit the market and production will be relocated based on the differences in comparative advantages, as new trade is created between the partners of an RTA.[8]

ANDERSON (1979) was the first to develop a theoretical foundation of gravity models for international trade. In his study, he departs from an ordinary gravity equation:

$$(1) \quad M_{ijk} = \alpha_k Y_i^{\varphi k} Y_j^{\delta k} N_j^{\varsigma k} N_i^{\eta k} d_{ij}^{\mu k} U_{ijk}$$

Where, M_{ijk} represents the dollar flow stemming from a good or factor k from one country (or region) i to another country (region) j. Y_i e Y_j reflects income of countries i and j, respectively, whilst N_i y N_j quantify their population. The distance between a pair of countries (or regions) is given by d_{ij}, and U_{ijk} is the log of the normally distributed error term, where $E(lnU_{ijk})=0$.[9]

ANDERSON assumes that the preferences in all regions are homogenous and that products are differentiated according to their place of origin. He applies

8 For a thorough explanation of trade creation and diversion, see GAGE (2004).

9 A gravity equation is normally run with aggregate flows data of goods and results are interpreted as elasticities. Results typically reflect income elasticities will are not significantly different from 1 and are significantly different from 0, whilst population elasticities usually oscillate around –4, and are significantly different from 0.

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properties of national expenditure systems in the gravity equation, by specifying that the share of national expenditure destined for the purchase tradable goods can be expressed as a function of population and income.

In turn, the portion of the total expenses on tradable goods is a function of transport costs. This interpretation facilitates a quantification of the distance, and allows obtaining an estimation coefficient. However, by assuming that structures across countries (regions) are identical, equal cost structures are also presumed and variability in transport costs ignored. This may generate an estimation bias that may be corrected for, if variations in the total expense proportion for the purchase of tradable goods are considered, even if consumption patterns between countries (regions) are similar. To correct the bias, linear regressions that explain such expense proportions of tradable goods according to population and income levels are used.

Starting off with equation (1), ANDERSON (1979) develops a gravity model that considers trade in many goods, distance and tariff barriers to observe elasticities in tariffs and correct the mentioned biases in the estimation. He establishes that the value of consumption goods of the type k, imported to country j from country i, is $M_{IJK}\tau_{IJK}$, where M_{ijk} represents the value of k goods in the foreign port, and τ_{ijk} stands for the transit cost factor (that is transport costs and border adjustments). Assuming there are similar and homogenous preferences for tradable goods, the expenditure shares of traded goods are identical functions $\theta_{ik}(\tau_j)$, where τ_j is the vector τ_{ijk} for country j. As such, demand of the imported good ik is:

$$(2 \quad M_{ijk} = \frac{1}{\tau_{ijk}} \theta_{ik}(\tau_j) \phi_j Y_j$$

Correspondingly, the summation equation reflecting aggregate trade flows between i and j is:

$$(3) \quad M_{ij} = \sum_k M_{ijk} = \phi Y_j \sum_k \frac{1}{\tau_{ijk}} \theta_{ik}(\tau_j)$$

And the trade balance relation is:

$$(4) \quad m_i \phi_j Y_i = \sum_j M_{ij} = \sum_j \phi_j Y_j \sum_k \frac{1}{\tau_{ijk}} \theta_{ik}(\tau_j)$$

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By equaling all factor costs to 1 ($\tau_{ijk} = 1$) and dividing both sides of the equation (4) by $\sum_j \theta_j Y_j$, ANDERSON obtains the aggregate share parameter for goods of country i on the right side: $\sum_k \theta_{ik}$, the left side is then introduced in (3) to obtain:

$$(5) \quad M_{ij} = \frac{m_i \phi_i Y_i \theta_j Y_j}{\sum_j \theta_j Y_j}$$

Under the presence of many tradable goods, only the aggregate equation (5) is valid. If τ_{ijk} is departs from its unit value, by dividing both sides of (4) by $\sum_j \theta_j Y_j$, the following gravity equation is obtained:

$$(6) \quad \frac{m_i \phi_i Y_i}{\sum_j \phi_j Y_j} = \sum_j \frac{\phi_j Y_j}{\sum_j \phi_j Y_j} \cdot \sum_k \frac{1}{\tau_{ijk}} \theta_{ik}(\tau_j)$$

Only recently have gravity models been used to assess international investment flows. Despite the recognised limitations stemming from the lack of theoretical basis and microfoundations, several scholars have found in gravity models a useful tool, given the data constraints and other empirical limitations when dealing with FDI. For instance, authors, such as GRUBERT and MUTTI (1991) and BRAINARD (1997) take ANDERSON's approach, differing only in the choice of parameters for variables, such as source and host countries, industry sector and periods of study.

Other scholars, notably EATON and TAMURA (1994) have based their research on factor endowments when studying trade and FDI flows between Japan and the United States. They incorporate measures of country features such as levels of education, land-labour ratios, income and regions in their gravity model, and find evidence for complementarity the between trade and FDI. Alternatively, BLONIGEN and DAVIS (2000) develop a model to assess the impact of bilateral tax treaties on FDI. They include typically used variables such as GDP, GDP per capita, trade and investment frictions (that is barriers), but also incorporate variables reflecting characteristics of tax treaties, such as treaty existence and treaty age, and observe a positive correlation between such treaties and FDI.

In particular, LEVY YEYATI, STEIN and DAUDE (2003, 2002) study FDI flows in the Americas, by developing a gravity specification to observe how membership of RTAs can influence FDI. They use a dataset of 20 source coun-

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tries (OECD members) and 60 host countries. In their gravity specification, GDP of source and host are included as a proxy for size, and a time fixed effect controls for unexpected FDI growth. They also include proximity dummies and expect these to be positively related to FDI. Among the dummies there are three integration variables, namely "Same FTA", "Extended Market Host" and "Extended Market Source". "Same FTA" registers country pairs under an FTA[10] with the value of "1" if this is the case, and "0" if countries are not members. This captures tariff jumping, vertical integration and investment provisions as channels for FDI. The "Extended Market Host" measures aggregate GDP of all FTA members to which the host country has zero tariff access, and is expected to have a positive coefficient.

The third integration variable is "Extended Market Source" and reflects the dilution (that is diversion) effects of FDI, when the source country has partners in other FTAs, to which the host country is not member. As with the former variable, it measures the log of aggregate GDP of all FTA partners to the source. It is expected to be negative; reflecting that FDI to the host country will shrink as the number of FTA partners to the source country increase. The value of the dummy capturing this effect is also –1 whenever the source country has FTA partners other than the host.

Considering all of these variables, the authors develop the following specification:

$$Log(1+FDI_{ijt}) = \alpha + \beta_1 lGDPhost_{ij} + \beta_2 lGDPsource_{ijt} + \gamma samefta_{ijt} + \delta_1 EMhost_{ijt} + \delta_2 EMsource_{ijt} + \phi D_{ij} + \varphi Y_t + \varepsilon_{ijt}$$

Where FDI_{ij} stands for investment stock from country i to country j; $lGDP$ stands for log of GDP and EM is for the extended market effect in either host or source country. D_{ij} represents the country pair fixed effects; Y_t stands for time fixed effects, and ε_{ijt} is the error term. Further, they add controls to capture possible complementarities stemming from trade and FDI (that is distance and trade flows) and a proxy for relative factor endowment in source and host country (capital in labour ratio).

Log specification problems with observations having zero value are eliminated by adding "1" to the log (that is log(1+FDI)). Thus, zero values, which may contain important information, are not concealed through the log and

10 Free Trade Areas (FTAs) and RTAs are considered synonyms in the present discussion.

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a possible estimation bias is avoided. In running the equation, results reveal that FTA partnership has a positive and substantial effect on bilateral FDI, having a coefficient of 0.18 if it is not logged (that is all "0" observations are discarded", and of 0.77 when logged. This renders an implied effect of common partnership of 116% (that is exp (0.77) – 1 = 1.16). Without this control there is effectively a calculation bias, if zero observations are not included. In all cases the relation is positive, meaning that a decrease in FDI provoked by the elimination of tariff-jumping incentives through the presence of an FTA, is more than offset by other effects in the regression working in the opposite direction.

In turn, results on the effect of new partnerships of the source country in another FTA to which the host is not a member, corroborate that FDI will partly be redirected to this new partner. Hence, if the extended market doubles for the source, then bilateral FDI will decrease by 27%. New partnerships of the host has a positive extended market effect on FDI flows, increasing by 6% if the extended market effect of the host doubles.

The authors test the model by looking at the interaction between the FTA dummy and a ratio of source-host GDP, and corroborate that greater income differences between host and source provoke an increase in vertical FDI. In particular, the effect of openness is positive and significant, making the case for complementarity, rather than substitution between trade and FDI. Finally, by calculating the relative attractiveness of host countries as a propensity measure and relating it to the FTA dummy, FTAs have positive and significant effects on FDI, favouring hosts that are more attractive or investment-friendly. These will be net gainers, whilst the less attractive ones will experience a net FDI loss.

4 Empirical Analysis

The relation between trade and investment can be explained in terms of complementarity, substituibility or a combination of both, as noted in previous section 2. Determining the nature of the relation is necessary, if we are to find an economic rationale for RTAs' protection of FDI. The central question in present research is whether trade and FDI flows complement or substitute each other in a subregion of the Americas under an RTA. Intuitively, if they are substitutable, this may shed some light on the possible impact a hemispheric RTA may have on these flows. If by extension such an RTA promotes trade and negatively impacts FDI, investment protection in

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the FTAA may not have much pertinence. On the other hand, if the relation were of complementarity, further trade would also promote FDI, making the inclusion of investment rules in the FTAA relevant, in particular for countries seeking to attract greater FDI.

In order to address these questions, what follows is the construction of a gravity model equation to assess what happens with FDI directed to ACN members, the Andean subregion of the Americas. The model will be run and tested with relevant FDI data for the region to see if the evidence is supportive of the assumptions above.

4.1 Data Limitations and Description of Variables

Intra-regional FDI in South America has either not been recorded or has been too insignificant and random to indicate any clear trend. Reliable data has mainly been subject to disclosure, making empirical research difficult. However, in the last decade, advances in registering and monitoring investment can be recorded. The collection of data by regional institutions, such as the Inter-American Development Bank (IADB) and ACN, and further compilation into statistical series by the International Monetary Fund (IMF) and the United Nation Conference on Trade and Development (UNCTAD), has significantly contributed to the study of these flows from traditional sources, such as the United States and Europe, but most significantly from countries in the region.

In the present study, data availability also shapes the empirical approach. The sources available only provide for FDI by region, countries or economic activities.[11] There is no industry or firm-specific country data readily available or complete for the whole region, complicating intra-industry studies, such as those reviewed in section 2.2.

In the light of the constraints, we propose a gravity model for studying FDI in the region. An adaptation of the specification presented by LEVY et al. (2001) has been made to best bridge data limitations. The study looks at bilateral flows between 31 source countries (including ACN members themselves), and 5 ACN hosts for a 10-year period.

11 The most comprehensive official source for the Andean countries is the ACN, which collects and serves as depository of official individual FDI data.

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The model considers FDI flows, distance, GDP, and oil prices. Further, a series of dummies account for RTAs membership. To test for robustness, variables are dropped alternately, whilst new ones are included. A final specification check is conducted with a subset of the ACN countries, namely Bolivia and Peru. Here, the explanatory power of the model is tested by including a variable accounting for political instability and controlling for possible price fluctuations affecting FDI.

Considering the above, the following is a description of the available data to be used in the model:

FDI flows

These are taken from the registers compiled by the General Secretariat of the Andean Community and are presented as current flows measured in millions of US dollars.[12] The data is available for 1992 to 2001, a 10-year period relevant for the study as it reflects the entry into force of Decisions No. 291 and 292, the G-3 and NAFTA.

The data registries have been compiled by official statistical bodies in each of the member countries, in most cases either the central banks or the official investment authority. The statistics may differ considerably in their presentation. In the case of Ecuador and Peru, for instance, inflows from the UK and the Netherlands also include FDI from their offshore dependencies, such as the Dutch Antilles, whereas the other Andean countries have disaggregated them into separate registries. Further, some Andean countries do not have comprehensive data on inflows stemming from Central America, presumably because these investments do no exist or are minor. Despite the absence, we have decided to include the existing data on Panama and Costa Rica, since some investment data from these countries to the five host countries does exist.

The Andean Community does not have a harmonised system for data collection and reporting. Each country has its own methodology, hence, some only require the registry of investments above a certain threshold, or demand a notification before the investment takes place, whilst other will only register effective investments.

12 General Secretariat of the Andean Community. Internet: http://www.comunidadandina.org/estadisticas.asp (as of 26 May 2008).

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GDP

GDP of both the source and host country in current US dollars have been taken from World Development Indicators (WDI) database of the World Bank, as well as the current GDP per capita of the source countries. The US consumer price index with 1995 as base year has also been obtained from the same database, and is used as a deflator for calculating the FDI and GDP variables in constant terms. The same deflator is also used for the test variables, namely oil and zinc prices.

Distance

The Haveman distance measure between the country pairs is used, which provides the Great Circle distance between capital cities of two countries in kilometers.[13]

FTA membership

Three dummies representing subregional FTAs in the Americas have been selected, namely NAFTA, ACN, and G-3. These dummies reflect extended market effect resulting from FTA membership, investment protection and tariff jumping incentive, which appear due to the elimination of tariffs among FTA members.

Oil Price

The oil price is the nominal annual OPEC spot Reference Basket Price. This price was introduced in 1987, and is the arithmetic average of seven selected crudes, namely: Saharan Blend (Algerian), Minas (Indonesian), Bonny Light (Nigerian), Arab Light (Saudi Arabian), Dubai (from the United Arab Emirates), Tia Juana Light (Venezuelan), and Isthmus (Mexican).

International crude spot prices would be a less precise indicator, since they generally comprise other types of crude sold in world markets[14], discarding the effect the OPEC basket has on determining the oil price in the Andean

13 See JON HAVEMAN's International Trade Data, Internet: http://www.macalester.edu/research/economics/PAGE/HAVEMAN/Trade.Resources/TradeData.html (as of 26 May 2008).

14 Typically, Dubai, Brent and WTI spot crude prices are considered, as is the case of the IEA.

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countries, considering Venezuela is the main oil producer. The variable also serves as an indirect proxy for natural gas prices, since all ACN countries, except Colombia, produce natural gas, thus controlling for possible variations due to price fluctuations.

Strikes and Lockouts

An important determinant of FDI in Andean countries is political stability. The number of reported days of strikes and lockouts serves as a measure. The International Labour Office database on labour statistics operated by the International Labour Organisation (ILO) Bureau of Statistics[15] is a relevant source. However, complete registries for the period of 1992–2001 only exist for Bolivia and Peru, which limits the testing of the gravity specification to this subset of ACN countries.

Zinc Price

Bolivia is the only ACN country that is not and oil producer. Since it is heavily dependent on its mineral production, zinc prices have been included as a secondary specification for observing if there is any impact on FDI in the event of international price fluctuations. These are quantified in cents per pound of zinc in current terms, and have been taken from the Bolivian National Institute of Statistics.[16]

As with oil, zinc prices are presumed to reflect volatility with regard to international markets and exchange rates, since investments to ACN countries have traditionally been resource driven. We include this as another proxy for international vulnerability in the case of Bolivia and Peru to test the specification since both are the main zinc exporters of the ACN region.

4.2 The Model

The gravity model specification to be used in the present study is the following:

$$ln(FDI_{ij}+1) = \alpha + lrGDPh_j + lrGDPs_i + lrGDPspc_i + lDist_{ij} + lroil + ACN + G3 + NAFTA + \varepsilon_{ij}$$

15 Available at: http://laborsta.ilo.org (as of 26 May 2008).
16 Bolivian National Institute of Statistics, Internet: http://www.ine.gov.bo (as of 26 May 2008).

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Where FDI_{ij} stands for investment flows from country i to the ACN host country j; α is defined as fixed effects of ACN host country j; $lrGDPh_j$ stands for log of GDP of ACN host country j, whilst $lrGDPs_i$ and $lrGDPspc_i$ capture the log of GDP and GDP per capita of source country i, respectively. The distance between source country i and host j is expressed as $lDist_{ij}$ and *lroil* is the log of real oil prices. Finally, *ACN, NAFTA* and *G-3* are three RTA dummies reflecting ACN, NAFTA and G-3 membership of source country i, and ε_{ij} is the standard error term.

The specification used is log of FDI + 1 as a function of a set of variables in order to account for all the FDI registries which record zero values. Since this is the case for many country pairs, adding 1 to the log, allows observing the impact these registries may have on results. This eliminates an estimation bias if simple FDI values are logged, since any "0" value is automatically left out, causing the loss of important information. Further, the three source dummies representing membership either to NAFTA, ACN or the G-3 receive the value of "1" if the source country is member to these FTAs, and "0" if it is a non-member.

A dataset of 31 FDI source countries (including ACN members) and 5 host countries (only ACN members) is used. This gives 155 country pairs, providing a total of 1550 observations for a 10-year period (1992–2001) for the specification.

After running the specification, a robustness check will be undertaken. First, each of the three FTA dummies and then the oil price will be alternatively dropped to observe their impact on the base results once they are omitted. Second, a year dummy controlling for time fixed effects will be included, accounting for possible spectacular changes in investment flows caused by financial crises or other unforeseen events. Finally, the same specification is run for a subgroup of ACN host countries, namely Bolivia and Peru. Here, a further validation is done, by including two additional variables, namely one for days lost through strikes and lockouts, and a second capturing the log of inflation-adjusted zinc prices. The aim once again is to test for robustness – this time bringing in a political risk consideration and a further control for external price shocks. The check is only conducted on two countries due to data limitations. Despite this limitation, it allows observing possible nuances in the results through an alternative proxy for external vulnerability to international prices, since these two countries are mineral exporters.

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5 Results

Before running the regression, the data was estimated to provide 1550 observations. Some registries are inexistent, leaving a total of 1431 estimations. Further, since the model requires logs to account for numerous zero values, all negative FDI registries (that is disinvestments) are also dropped, which results in a total of 1391 observations.

Table 1: Gravity model estimation

Dependent Variable ln(*FDI+1*)	(1) Base reg.	(2) Drop AP	(3) Drop NAFTA	(4) Drop G3	(5) Drop Oil	(6) Year dummy
GDP Host	-0.0330	-0.0597	-0.0461	-0.0336	0.0100	0.5837
	(0.19)	(0.34)	(0.26)	(0.19)	(0.06)	(4.81)***
GDP Source	0.1373	0.2809	0.1557	0.1291	0.1853	0.0506
	(0.45)	(0.9)	(0.51)	-0.43	(0.61)	(0.16)
GDP per capita of Source	2.4023	2.2215	2.3084	2.4102	2.3588	2.5122
	(7.43)***	(6.73)***	(7.22)***	(7.55)***	(7.31)***	(7.57)***
Distance	-5.7535	-4.3632	-5.5945	-5.7488	-5.7695	-5.8995
	(17.49)***	(15.12)***	(17.57)***	(17.56)***	(17.54)***	(17.54)***
Oil prices	-1.5092	-1.5068	-1.5303	-1.5107		-1.0759
	(1.74)*	(1.7)*	(1.76)*	(1.74)*		(1.21)
ACN Dummy	-5.4334		-5.0810	-5.4650	-5.4330	-5.6328
	(8.2)***		(7.98)***	(8.66)***	(8.2)***	(8.29)***
NAFTA Dummy	-1.4075	0.2909		-1.4484	-1.4240	-1.5797
	(1.9)*	(0.4)		(2.09)**	(1.92)*	(2.08)**
G3 Dummy	-0.1255	-2.1238	-0.6634		-0.1410	-0.2818
	(-0.16)	(2.72)***	(0.88)		(0.18)	(0.34)
Observations	1391	1391	1391	1391	1391	1391
R-squared	0.3597	0.3284	0.358	0.3597	0.3583	0.321
F-STAT	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Absolute values of t-statistics in brackets, where *** significant at 1%, ** significant at 5%, * significant at 10%.

The results are presented in two tables. The first (1) column of Table 1 portrays the base regression results, whilst the specification checks can be appreciated in columns (2), (3), (4), (5), and (6). Table 2 displays the regression for the subgroup of host countries chosen, with the base regression results in column (1), followed by the robustness check with political stability and zinc prices variables in columns (2) and (3), respectively.

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As expected, the estimated effect of FTA membership on FDI is negative and significant. The R^2 reveal that 35.97% of the variations in FDI to the ACN are explained through the specification. This is considerable, taking into account the data limitation and numerous zeros.[17] Further, the F-statistic shows that it is significant. It is noteworthy that even if simple FDI is used instead of logged FDI, though more observations are included (1431 versus 1391), the explanatory power is only 16.25%,[18] which is less than half of the logged specification, though it is still significant. This indicates the need for controlling biases of an unlogged specification.

The results in Table 1 (1), display the individual contribution of each specification variables to explaining FDI. First, the relationship between FDI flows and host GDP is negative with a coefficient of –0.033 and insignificant, as the t-statistics points out (–0.19). By contrast, the coefficient of the source GDP is positive, signaling an implicit increase of FDI by 14.7%[19], though still insignificant. The source GDP per capita has a very meaningful explanatory power, with a coefficient of 2.4; translating into a spectacular ten-fold increase in FDI (1002.3%)[20], and considerable t-stat significance. This suggests that FDI to ACN countries is highly determined by the level of income of source countries.

As expected, the distance between source and host has an important impact on FDI, given the magnitude of the point estimate (-5.75). The t-statistics reveals that this coefficient is highly significant, also indicating that the greater the distance, the more prone investors will substitute investment for trade.[21] On the other hand, oil prices, have a negative effect on FDI, of an estimated decrease of 77.89%[22], though hardly significant.

With regard to the RTA dummies, the coefficients of ACN, NAFTA and G-3 are all negative, pointing to an inverse relation between RTA membership and FDI. In other words, if a source country is a member to the same RTA as the host, it has more incentives to trade than to invest. In the case of ACN membership, for example, the coefficient of –5.4334 translates into an indirect decrease of investments by –99.56%.[23] These results probably show that tariff-jumping absence due to common membership offsets the rela-

17 Of the 1431 observations 443 are equal to zero.
18 This calculation is derived from running the specification without logs and is not depicted in the Table.
19 Exp(0.1372)-1=0.1470
20 Exp(2.4)-1=10.0231
21 Exp(-5.7534)-1=-0.9968
22 Exp(-1.5091)-1=-0.7789
23 Exp(-5.4334)-1=-0.9956

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tive attractiveness of investments, promoting export in almost perfect substitution. Prior the creation of the ACN, members were more prone to invest due to high tariff and non-tariff barriers, which were eliminated or significantly reduced.

NAFTA also has a significant negative relation, though with less explanatory power than the ACN dummy.[24] In this case however, substitution affects extra regional FDI, since NAFTA members are not part of the ACN. The explanation for substitution therefore must be slightly different than the tariff jumping argument. Prior the creation of NAFTA in 1995, the drive for substitution could have been relative attractiveness of *uniformly reduced* barriers to trade versus investment transactional costs under the ACN. After 1995, substitution may be also have been due to investment diversion to the new NAFTA partners.[25] Further, though the G-3 was also effective as of 1995, and could have partly offset investment diversion, the extended market effect of NAFTA is greater than that of G-3, given the relative size of both FTAs, resulting in net substitution.

Finally, the G-3 dummy, though insignificant, also reveals a negative coefficient, which is correspondent with the former dummy results, since it is a subset combination of both ACN and NAFTA membership.

In order to eliminate possible biases in the explanatory power of the FTA membership dummies, each one has been dropped in turn, as a first specification check. Results for ACN, NAFTA and G-3 are shown in columns (2), (3) and (4) of Table 3, respectively. As can be appreciated, the explanatory power of the specification decreases slightly, but remains significant. R-squares are 32.84%, 35.80% and 35.97% when dropping ACN, NAFTA and G-3, respectively, versus 35.97% of the base regression.

Dropping the ACN dummy weakens the specification results, whilst leaving NAFTA out does so in a lesser extent. Leaving G-3 out does not alter the explanatory power *whatsoever*. The actual R^2 and F remains the same as in the base regression, whilst the predictability of the other two dummies is highly improved (that is both have significant t-stats and greater coefficients), possibly indicating that including G-3 does not improve the specification because of the overlap of the ACN and NAFTA dummies.

24 t-statistics of (1.9) versus (8.2).

25 This argument has been empirically tested in LEVY et al. (2001), where FDI diversion reduces investments by 15.5% to non-FTA members, when the source country joins a new RTA.

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When dropping the oil prices as the next specification check, the explanatory power of the regression remains significant. Further, column (5) shows the coefficients of the variables that have weight in the base regression remain significant, as the t-stat of distance; GDP per capita and ACN are still relevant. This implies that oil prices are not relevant in explaining FDI in the present base regression.

A control for time variations is accounted for by including a year dummy in the specification. Results in column (6) reveal that R^2 remains significant, with 32.1% of explanatory power. Further, all the significant variables in the base specification remain relevant and experience an increase in their coefficients, except for oil prices, which become insignificant.

Another important change occurs with the host GDP. When including the year dummy, this variable becomes positive and significant, having an estimated effect of raising investments by 79.26%.[26] This change in results has several implications. First, the fact that the other variables remained more or less the same, seem to point out that income growth in the source countries is not the only determinant for attracting investment. Probably time effects influence long-term investment decisions, also based on economic performance of host countries, as the positive and significant coefficient of host GDP signals.

The results of a second specification test on a subset of ACN countries are displayed in Table 2. Here, R^2 is considerably lower, reporting 28.09% versus the 35.97% of the base regression with all ACN countries (see Table 1 Column (1) for a comparison). The signs and variables with explanatory power in the base regression remain significant in the subgroup, though results are slightly weaker. This is the particular case of the GDP per capita, the distance and the ACN dummy variables. When controlling for political stability by including a strike and lockouts variable, column (2) reveals important changes in the results. First, source GDP per capita becomes insignificant. A possible explanation is that both political instability and economic growth defined by source GDP, determine investments better and capture the effect a change in income may have on FDI. This may be the case, since the strikes and lockouts variable is highly significant and source GDP becomes relevant, whilst other significant variables such as distance and ACN are not affected.

26 Exp(0.5837)-1=0.7926

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Table 2: Subgroup specification test for Bolivia and Peru

	(1) Base reg.	(2) Strikes	(3) Zinc prices
GDP Host	-0.1823	0.0374	0.0416
	(0.95)	(0.19)	(0.21)
GDP Source	0.5457	1.1382	1.1514
	(0.97)	(1.92)*	(1.94)*
GDP per capita of Source	1.5185	0.9278	0.9224
	(2.49)**	(1.45)	(1.44)
Distance	-6.1390	-6.3330	-6.3441
	(10.98)***	(10.96)***	(10.96)***
Oil prices	-2.7248	-4.4410	-4.1815
	(1.81)*	(2.64)**	(2.38)**
ACN Dummy	-3.9042	-3.7053	-3.6948
	(3.17)***	(2.91)***	(2.9)***
NAFTA Dummy	0.1067	0.0272	-0.0086
	(0.08)	(0.02)	(0.01)
G3 Dummy	-1.8941	-1.5901	-1.6264
	(1.43)	(1.15)	(1.17)
Strikes and Lockouts		1.6186	1.6644
		(3.27)***	(3.31)***
Zinc prices			-1.2459
			(0.52)
Observations	522	466	466
R-squared	0.2809	0.3392	0.3396
Prob > F	0.0000	0.0000	0.0000

Absolute values of t-statistics in brackets, where *** significant at 1%, ** significant at 5%, * significant at 10%

Second, when including the strike and lockout variable, the oil price determinant becomes significant. This has a indirect effect of decreasing investments by 98.82%.[27] This change is particularly important, since oil prices were hardly significant and had weaker coefficients in the base regression and specification checks. This reveals that vulnerability to international oil markets is also a determinant of investment attraction in the region, if a measure for political risk is part of the specification.

27 Exp(-4.4409)-1=0.9882

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Finally, the last robustness test which includes zinc prices in the specification looks at whether such prices may cause nuanced changes in the case of mineral exporters (Bolivia and Peru). Including this variable does not generate an important increase in R^2 or any of the specification variables. In itself, the zinc price variable is not significant, as shown in Table 2, Column (3).

6 Discussion

6.1 Main Findings

The main finding of the empirical study in this paper reveals that although tighter investment provisions have been adopted since the 1990s in the Andean region, actual membership to the ACN, NAFTA and G-3 had a negative impact on FDI. Investment flows decreased in the region, as Andean members countries joined these FTAs.

These findings also shed some light on the type of FDI that has been attracted. The increased membership of FTAs, the relative attractiveness of exporting as compared to investing, has promoted the substitution of FDI in the Andean countries. In other words, integration seems to favour the supply to these markets through trade rather than FDI, since tariffs and possibly other trade barriers are reduced through RTAs. Therefore, even though FDI incentives, such as those contained in the ACN, might be attractive, these are offset by partial trade liberalisation in the RTAs, and become net costs for countries maintaining policies of FDI incentives. Other important determinants of FDI in the ACN are income differences between source and host countries. FDI is positively related to changes in GDP per capita of source countries, meaning increases in income positively affects investment flows to the region.

The specification tested in this paper shows high significance of F-statistic and good explanatory power of R^2. In particular, eliminating the ACN and NAFTA dummies or the oil price dooes not increase the explanatory power of the specification, as opposed to dropping of G-3, which does improve the coefficient and t-statistics of NAFTA and ACN. Further, GDP of host country changes its sign from negative to positive, and becomes highly significant when controlling for time invariant effects. It also improves the t-statistics and explanatory power of other significant variables, such as distance, GDP per capita, and the ACN and NAFTA dummies. Considering these results, the base regression is fairly robust. However, a more accurate specification

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should include a year dummy, and a variable accounting for political instability, such as days lost on strikes and lockouts, and the overlapping dummy (which accounts for G-3 membership) should be eliminated.

The subgroup specification check also shows similar results, when compared with the base regression. If data on strikes and lockouts are included, these improve the predictability of other variables, namely source GDP and oil prices. Zinc prices, as opposed to oil prices, are not significant; indicating that vulnerability to international zinc prices does not determine FDI. However, in conjunction with the political risk determinant (that is strikes and lockouts), these do contribute to raising the relevance of the source GDP, a strong determinant of FDI.

Finally, even though the specification test on the subgroup of countries improved predictability of the model by raising the explanatory power of some variables, the number of observations was limited. Ideally, data on strikes and lockouts for all countries would have made the test more robust. Considering the zinc variable had a low significance, a basket of mineral prices, such as the OPEC crude basket in the case of the oil price variable, could provide more precise results for the subgroup.

As is often observed in the study of FDI, data limitations determined the empirical analysis presented in this paper. Future research in the field may deal with these shortcomings, especially as micro-data and parameters, which may account for exogenous factors affecting the decision to invest in a foreign location, such as political risk or external (price) vulnerabilities, become available.

6.2 Implications for an FTAA with Investment Protection

The last two decades have evidenced a proliferation of bilateral and regional trade and investment agreements, liberalising markets, protecting and promoting capital flows. Together with the creation of a multilateral trading system under the auspices of the WTO, the legal framework for investment has gradually shaped itself on a regional and multilateral axis. However, since this multilateral regime only offers a minimum provisions on trade-related investment measures based on existing GATT commitments, regionalism appears to have advanced more in setting a regulatory framework for FDI, especially in the light of agreements such as the NAFTA, the CAN and the G-3.

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In this context, the debate centers on whether investment provisions in a hemispheric undertaking, such as the FTAA, may impact FDI through deeper integration in the future. Since all of the FTAA members are developing countries – except for the United States and Canada – income differences will not be as stark as they were for Mexico when it was joining NAFTA. It is probable that investments from the two developed members will be "diluted" because of the dimensions of the FTAA, where more than one country will compete for FDI. Thus, even though the GDP per capita of a source country is positively related to FDI in the ACN, it may not account for spectacular FDI flows. In fact, there is a possibility of FDI diversion of traditional flows to the ACN, if we consider the impact of harmonisation of FDI rules across 34 members and its effect on relative attractiveness.

To conclude, though from a legal standpoint the creation of FTAs may favour FDI protection in the particular case of the Andean countries, the evidence presented in this paper does not suggest that increased FDI will be attracted. Thus, countries seeking to attract greater investment via the FTAA should rather focus on how well they may be equipped to maintain and improve the conditions, which determine their relative attractiveness for FDI.

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