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Analysis of the Economic Impact of Investment Provisions in Regional Trade Agreements

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ANALYSIS OF THE ECONOMIC IMPACT OF INVESTMENT PROVISIONS IN REGIONAL TRADE AGREEMENTS

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ABSTRACT

As countries turn more to regionalism as a means of forwarding co-operation on trade rules and other areas of policymaking, rules on investment are increasingly being incorporated into regional trade agreements (RTAs). We analyse the economic consequences of including investment provisions in trade agreements by creating an index of the extensiveness of investment provisions in RTAs and then using that index in a gravity model framework of trade and investment. The results indicate that investment provisions are positively associated with trade and, to an even greater extent, investment flows. Further, we observe an insignificant effect of bilateral investment treaties on investment flows, suggesting either that substantive investment provisions in RTAs impact trade and FDI flows more profoundly, or that the combination of substantive investment rules and provisions liberalising other parts of the economy jointly impact trade and investment more significantly. The report also includes case studies that confirm that the relationship between investment and other provisions in trade agreements is complex and depends on many factors.

Keywords: Investment, regional trade agreement, gravity model, trade policy, foreign direct investment, bilateral investment treaty, NAFTA, ANZSCEP.

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TABLE OF CONTENTS

I. Introduction 6
1. Background 6
2. The drivers of trade and investment under new regionalism 8
II. Designing an index of investment provisions in RTAs 9
1. Analysis and classification of investment provisions 9
Index methodology 15
III. Quantitative Analysis 20
1. Background 20
2. The base models 21
3. The RTA variables 23
4. The results 25
IV. Case Studies 29
1. The North American Free Trade Agreement 29
2. The Agreement between New Zealand and Singapore on a Closer Economic ..... Partnership 33
V. Conclusion 37

REFERENCES 40

ANNEX I – Matrix of investment-related provisions 44
ANNEX II – Countries in the dataset 49
ANNEX III – North-North and South-South RTAs with investment provisions 50
ANNEX IV – Technical aspects of the estimates provided in the quantitative analysis 53
The variables 53
The mathematical specifications of the models 55
Alternative model specifications 58
Alternative regression techniques 59
Analysis of the impact of different categories of investment provisions 61

Tables

Table 1. Coding of investment provisions 16
Table 2. Index of investment provisions 19
Table 3. Summary of the regression results - Trade & FDI models 26
Table 4. Matrix of investment-related provisions in North-South RTAs (Part 1) 44
Table 5. Matrix of investment-related provisions in North-South RTAs (Part 2) 45
Table 6. Encoded matrix of investment-related provisions (Part 1) 46
Table 7. Encoded matrix of investment-related provisions (Part 2) 47
Table 8. Encoded matrix of investment-related provisions in North-North and South-South RTAs ..... (Part 1) 50

Table 9. Encoded matrix of investment-related provisions in North-North and South-South RTAs ..... (Part 2) 51
Table 10. Index of investment provisions in North-North and South-South RTAs..... 52
Table 11. Results from the third regression (individual RTAs)..... 57
Table 12. Alternative model specifications..... 60
Table 13. Economic analysis of the impact of different categories of investment provisions..... 62
Table 14. Analysis of the investment index and dummy coefficients according to the year of reference 63

Figures

Figure 1. RTAs in force and RTAs with substantive investment provisions 7
Figure 2. Imports in the NAFTA Region 31
Figure 3. FDI in Mexico..... 32
Figure 4. FDI flows between New Zealand and Singapore (1991-2004)..... 36
Figure 5. Trade flows between New Zealand and Singapore..... 37
Figure 6. Index of investment provisions in 24 North-South RTAs 48

Boxes

Box 1. Panel data and fixed effects 23
Box 2. Does the year of entry into force matter? 28

EXECUTIVE SUMMARY

As countries turn more to regionalism as a means of forwarding co-operation on trade rules and other areas of policymaking, rules on investment are increasingly being incorporated into regional trade agreements (RTAs). The inclusion of rules on policies beyond trade in RTAs is one characteristic of what some call "new regionalism", a trend that has increased both the complexity and coverage of RTAs in recent years. As a result, it is becoming difficult for policymakers to distinguish the trade effects of RTAs from the effects of other types of provisions on their economies. The relationship between trade and foreign direct investment (FDI) is particularly complex to analyse in the context of RTAs since trade liberalisation can either increase or decrease intra- and extra-bloc FDI depending on country characteristics and firms' motives for investment.

This report analyses the economic consequences of including investment provisions in trade agreements. First, the paper classifies provisions in all North-South RTAs that contain substantive investment-related rules. Next, the information is used to create an index of the extensiveness of investment provisions in the 24 North-South agreements included in the study. This index does not represent a qualitative assessment of the liberalisation of investment in each RTA, but rather ranks the agreements according to the depth and extensiveness of their investment provisions. We aggregate the different provisions for each RTA with an equal weight to avoid subjectivity in the analysis.

Quantitative analysis is then performed using a gravity model framework of trade and investment to test the impact of investment-related provisions contained in RTAs. The results indicate that investment provisions are positively associated with trade and, to an even greater extent, investment flows. Further, we observe an insignificant result for the variable that represents the existence of a bilateral investment treaty between the country pairs. This suggests either that substantive investment provisions in RTAs impact trade and FDI flows more profoundly, or that the combination of substantive investment rules and provisions liberalising other parts of the economy come together to more significantly impact trade and investment flows. The results are robust to different specifications and estimation methods.

The report also includes case studies that assess on a more detailed level the investment-related provisions in two RTAs representative of "new regionalism". The analysis of the North American Free Trade Agreement and the Agreement between New Zealand and Singapore on a Closer Economic Partnership presents a more nuanced picture of the investment provisions in these agreements, and helps provide context to the empirical analysis presented in the study. The case studies tend to confirm that the relationship between investment provisions and other provisions in trade agreements is complex and depends on many factors.

ANALYSIS OF THE ECONOMIC IMPACT OF INVESTMENT PROVISIONS IN REGIONAL TRADE AGREEMENTS

I. Introduction

1. Today, almost 40% of all trade can be attributed to international exchanges among members of regional trade agreements (RTAs) (World Bank, 2005). In the last ten years, almost 200 RTAs have been notified to the World Trade Organisation (WTO). Thirty-three new agreements were notified in 2004 alone and 20 more in the first six months of 2005[1]. Taking into account the RTAs currently under negotiation or in the process of ratification, analysts expect the number of RTAs in force to grow from 139 in mid-2005 to around 300 in 2008 (Crawford and Fiorentino, 2005).

2. One distinguishing feature of recent RTAs is their wide-ranging coverage and complexity. Tariff reductions are accompanied by provisions on non-tariff barriers (NTBs), customs procedures, sanitary and phytosanitary measures and intellectual property protection. Most of the new agreements cover trade in services and a number of regulatory issues that go beyond multilaterally agreed disciplines – such as government procurement, competition policy and the environment – are also frequently addressed. The proliferation of RTAs between developing and developed countries and their coverage of new policy areas beyond trade is one characteristic of what some call "new regionalism" (Ethier, 1998; Crawford and Fiorentino, 2005).

3. Countries are increasingly incorporating investment, which has traditionally been covered via separate bilateral investment treaties (BITs), in many recent RTAs. Thus, it is not surprising that the number of new BITs has been receding since the mid-1990s, while at the same time the number of RTAs with substantive investment provisions has been rising (Figure 1). Since WTO Members removed investment from the Doha Round negotiating agenda, it is important for policymakers to understand the consequences of including "new" provisions – such as investment – at the regional level. What drives trade and investment flows under new regionalism? How can one classify the investment provisions in North-South RTAs? What are the effects of substantive investment provisions on trade and investment flows? This paper contributes to the existing literature by exploring these questions.

1. Background

4. This paper analyses investment provisions in RTAs between developed and developing countries[2]. The definition of "developing country" used in this paper is derived from how countries define themselves in the context of the WTO, leading to the inclusion of a wide array of agreements between countries at different levels of development[3]. To our knowledge, this study is one of the first to present a

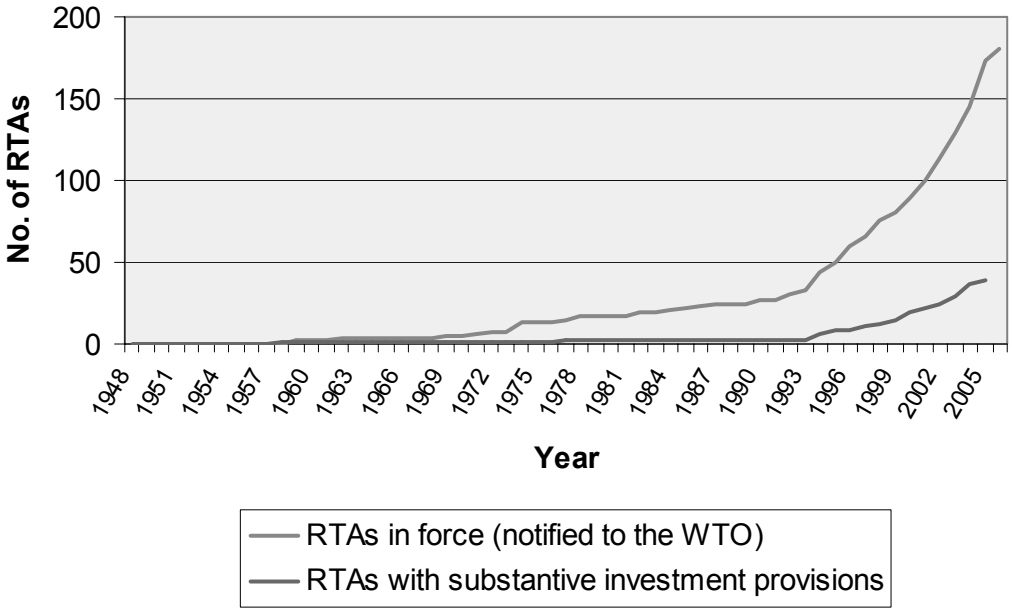
1. A complete list of RTAs notified to the GATT/WTO under GATT Article XXIV, GATS Article V and the enabling clause can be found at www.wto.org/english/tratop_e/region_e/region_e.htm.

2 . Additional OECD analysis on investment agreements can be found in "Overview and Novel Features in Recent OECD Investment Agreements" (OECD, 2006).

3 . While EC-Romania and EC-Bulgaria would fall under this rubric, they have been moved to the "North-North" category because Romania and Bulgaria are EC accession countries.

metric assessing the extent and depth of investment provisions in all RTAs that have entered into force as of November 2005 and quantitative analysis using such a measure to study the impact of investment-related provisions in RTAs on trade and flows of foreign direct investment (FDI).

Figure 1. RTAs in force and RTAs with substantive investment provisions



Source : WTO and OECD Secretariat.

5. Both North-North and South-South RTAs have been included in the database built for this study and are used in the quantitative analysis in Part III. While only the 24 North-South RTAs identified in Tables 4 and 5 of Annex I have been fully described in Part II, the provisions of all RTAs have been analysed. There are, however, very few North-North trade agreements that include investment provisions[4]. For developed countries, investment provisions are more likely to be found in other international instruments, such as the OECD Code of Liberalisation of Capital Movements or in BITs. And while South-South RTAs increasingly include investment provisions (see Annex III), they are either very recent, currently under negotiation or their investment/services chapters are not yet complete. A scarcity of data also complicates the analysis of South-South investment.

6. Part II focuses on North-South RTAs because it is more consistent to propose a taxonomy of investment provisions in agreements of the same type. With the exception of PATCRA (the free trade agreement between Papua New Guinea and Australia, which is to some degree a precursor to more recent RTAs), all North-South RTAs with investment provisions have been signed within the last ten years, starting with the North American Free Trade Agreement (NAFTA) (1994).

7. Second, since the trade and FDI relationship is ambiguous, the North-South angle lets us assume that these RTAs were signed with an expectation of higher FDI flows from the Northern country to the

4 . The Treaty of Rome (founding the European Community), the European Economic Agreement, the European Free Trade Association (EFTA) convention (as updated by the Vaduz Convention in 2001), the Australia-New Zealand Closer Economic Relations agreement (for services only) and the recent bilateral trade agreement between the United States and Australia (AUSFTA).

Southern partner, a hypothesis that we test empirically. A positive relationship can *a priori* be expected between the entry into force of a North-South RTA and trade and FDI flows. The relationship between a rather large developed country and a small developing country can also diminish the role of market-seeking FDI that would increase FDI but adversely affect trade.

8. Only trade agreements with "substantive" investment provisions have been included in the study. While it is difficult to qualitatively judge the degree to which various investment provisions are substantive, there are two cases in which investment provisions were not considered substantive in the context of this study. First, it is common to find a general objective to increase investment in the preamble of many trade agreements. In addition, some RTAs state that they cover investment, but then do not include rules or commitments on investment (for instance, some RTAs state that rules on investment and services will be included at a later stage). These agreements have been excluded from the scope of the study. Alternatively, in the case of an agreement with provisions on investment co-operation and promotion, the inclusion of mechanisms to organise co-operation and promotion meets the "substantive" criteria for including the agreement in the analysis.

2. The drivers of trade and investment under new regionalism

9. Trade and investment represent two sides of market access. Yet, while they share many determining factors – such as macroeconomic conditions, factor endowments and the like – there is a complex relationship between trade and FDI in the context of regional trade agreements (Blömstrom and Kokko, 1997).

10. Whether or not trade and investment are substitutes or complements depends on a firm's market access motive. On one hand, the removal of trade barriers between countries can lower intra-regional FDI when investment is mainly market-seeking or "tariff jumping". Since RTAs also imply greater regional economic integration, companies with high fixed costs may concentrate their activity in one country and develop trade flows with partner countries rather than open plants in each country. In this sense, one can say that trade substitutes for investment and that the RTA has had a redistributive effect on intra-regional investment patterns. On the other hand, efficiency-seeking investment may increase because freer trade of goods and services enables companies with low fixed costs to localise their activity in different countries and then trade intermediate inputs. In this instance, investment complements trade.

11. The entry into force of a RTA can also affect extra-regional FDI in opposing ways. Higher regional trade barriers may encourage extra-regional market-seeking FDI while discouraging efficiency-seeking FDI. On the other hand, a RTA that does not significantly differentiate between intra- and extra-regional trade barriers should not affect FDI much. Moreover, these relationships may be influenced by differences in the level of development among countries, loose or strict rules of origin, regulatory issues beyond trade policy and the investment climate in each country.

12. While studies on regionalism have flourished, few have attempted to assess the economic impact of new provisions found in a wide range of RTAs. This is in part because agreements are not only numerous, but also because they take a very different approach to incorporating "new" non-trade provisions. Moreover, there are few indicators available that distinguish the different types of agreements, a necessary step for quantitative analysis. Thus, much of the previous work on trade and investment in RTAs has focused either on a description of the investment provisions found in trade agreements (UNCTAD, 2004a; OECD, 2006) or on the econometric analysis of determinants of FDI in which RTAs are included as a dummy variable[5] (*e.g.*, World Bank, 2005; te Velde and Bezemer, 2004).

5 . The "dummy variable" takes the value of 1 if there is a trade agreement between the home and host country and 0 otherwise.

13. Only a handful of studies have investigated the impact of RTAs on trade and investment flows, and even fewer have focused on the impact of investment-related provisions in RTAs. A notable exception is Jeon and Stone (2000), who study the impact of the Association of Southeast Asian Nations (ASEAN) on trade and investment in the Asia-Pacific economies. They find that intra-bloc trade flows increased as a result of ASEAN, but that ASEAN's effect on intra-bloc investment was insignificant. In Stein and Duade's important work (2001), they use a gravity model approach to assess how RTAs and various institutional factors affect investment flows. While Stein and Duade do indeed find a positive effect, the coefficient was also insignificant.

14. These studies set the stage for Adams *et al*. (2003), who also employ a version of the gravity model to analyse whether certain RTAs are associated with net investment creation or diversion. They construct an index of liberalisation to measure the breadth and depth of RTAs. Their "Member Liberalisation Index" includes a category for investment rules. Although its weight in the overall index is quite low (0.05), the category indicates whether a RTA includes provisions prohibiting restrictions on investment (1, highest score), national treatment for investment (0.75), initiatives to reduce restrictions and facilitate investment (0.25) or no provisions (0, lowest score). The index is then used in a gravity model to assess the role of some of the new provisions typical of new regionalism – including investment – in RTAs. Their study shows that non-trade provisions significantly impact investment flows. They also test for creation and diversion effects.

15. Another study by te Velde and Bezemer (2004) uses a similar index and focuses on investment. Their index takes the following values: 0 if no provisions, 1 with some investment provisions in the region (*e.g*., the Common Market for Eastern and Southern Africa (COMESA), the Southern African Development Community (SADC)), 2 with advanced investment provisions in the region (*e.g*., ASEAN), 3 with complete investment provisions in the region (*e.g*., NAFTA), or -1 if more restrictive provisions (*e.g*., the Andean Community in the 1970s). The authors find a positive relationship between membership in one of the seven regions covered in their study and extra-regional FDI flows.

II. Designing an index of investment provisions in RTAs

1. Analysis and classification of investment provisions

16. The first step in the analysis is to collect all relevant information on substantive investment provisions – for both goods and services – contained in all North-South RTAs in force as of November 2005. Tables 4 and 5 (in Annex I) present the results of the analysis for the 24 agreements that include substantive investment provisions based on six broad categories.

1. Right of establishment and non-discrimination in the pre-establishment phase (national treatment (NT) and most-favoured-nation treatment (MFN));

2. Non-discrimination for post-establishment (NT, MFN);

3. Investment in services (specific provisions on establishment, NT and MFN in services sectors);

4. Investment regulation and protection (provisions on performance requirements, ownership requirements, expropriation, fair and equitable treatment, free transfer of funds and temporary entry and stay for key personnel);

5. Dispute settlement (State-State and State-Investor dispute settlement); and

6. Investment promotion and co-operation (co-operation mechanisms, harmonisation of rules, asymmetries and future liberalisation).

17. These categories cover all types of investment provisions to ensure that we include the relevant RTAs in the analysis. Moreover, the typology used in Tables 4 and 5 builds upon the binary approach taken in most other studies to create a more detailed matrix of investment provisions. The additional detail allows for a more accurate quantitative assessment of the impact of individual provisions as well as their combined effect on trade and investment flows.

18. Many studies in the literature have analysed the different formulations of investment provisions in international agreements (OECD, 2003; OECD, 2006; UNCTAD, 2004a). The following taxonomy draws upon this work and applies it to investment provisions in RTAs. The purpose of this analysis is not to provide a full analysis of the provisions, but rather to lay the foundation for the study of the impact of these provisions on trade and FDI flows.

(i) Provisions on establishment and non-discrimination in the pre-establishment phase (non-services sectors)

19. The pre-establishment treatment of investors clearly represents one of the key issues in the investment section of the RTAs considered. The right of establishment provides foreign investors with the most critical market access component – the right to invest in the host country. This right to invest, however, is never absolute. It is limited by the definitions of "investor" and "investment" as well as by a series of exceptions and derogations. To be effective, the right of establishment must be married with provisions on the treatment of foreign investments *after* the investment has been made (post-establishment). Finally, the effectiveness of establishment provisions depends on the existence of remedies to address violations of the pre-establishment principle by the host state.

20. In the first column of the section dedicated to establishment in Table 4, the right of establishment is described through the typology presented below.

- "No" means that no provision in the RTA provides investors with a generic right to set up a permanent presence in the host country. Both parties reserve full control of entry and establishment, which are regulated by domestic laws and regulations. National measures restricting access and establishment can take a variety of forms, such as the screening of FDI, quantitative restrictions, conditional entry or measures relating to ownership and control. But it should also be kept in mind that Table 4 reports only provisions contained in the RTAs analysed and the existence of a "right" of establishment. It does not describe the actual conditions potential investors face in the host country. And, although no commitment is made in the text of the trade agreement, parties could have a fairly liberal investment regime through their domestic regulation or another international investment agreement, as is the case in the US-Jordan RTA and the Euro-Mediterranean Partnership agreements in which several EC Member States have signed BITs with the countries concerned. The absence of pre-establishment provisions also characterises agreements focused on investment promotion and co-operation rather than on investment liberalisation (for example, EC-Tunisia, EFTA-Mexico or US-Jordan).

- "NT" indicates that pre-establishment national treatment is granted to investors. Most RTAs address the right of establishment in the context of the non-discrimination provisions (national treatment and most-favoured-nation). There is often a single national treatment article covering both pre- and post-establishment. The information reported in Column 1 of Table 4 only covers the right of establishment (entry). The concession of national treatment is

particularly effective in liberalising investment as foreign investors can set up operations on an equal footing with domestic investors. It can also represent part of a strategy to deepen economic integration in the future, or to underline the importance of existing investment flows (*e.g.*, Singapore-Japan). This approach is also evident in the EFTA-Chile RTA and on an asymmetrical basis in the Singapore-Australia RTA.

– "MFN+NT" signifies that both national and most-favoured-nation treatment are granted to investors. This approach limits the discretion of the host country to regulate the entry of investment the most. Foreign investors benefit from a right of establishment on the same basis as national investors or, if better, that faced by other investors from countries that have been granted more desirable treatment. Assuming that exceptions are not extensive, this approach allows decisions on investment to be made on purely commercial terms, thus contributing to a more efficient allocation of resources between the two countries. While NAFTA was the first RTA to adopt this model, this type of provision can now be found in several agreements (*e.g.*, Canada-Chile, EC-the Former Yugoslav Republic of Macedonia (FYROM), EFTA-Singapore, US-Singapore, US-Chile, Mexico-Japan, New Zealand-Singapore and EC-Jordan, although in the latter with asymmetric provisions).

21. Given the importance of the right to regulate investment, governments usually circumscribe the right of establishment with a series of exceptions and derogations. General exceptions are often present, including measures relating to the general public interest, such as national security, public health, order and morals. Some agreements also limit the right of establishment to certain industries and specify a positive list together with industry-specific limitations. Other agreements take the approach of liberalising in principle all industries, and then excluding through recourse to a negative list certain sectors from the establishment provisions or applying sector-specific limitations. Column 2 in Table 4 reports information on the type of limitations found in each agreement that contain pre-establishment provisions. The typology used is simple; the column indicates whether there is a positive list of limitations, a negative list or no limitations ("none").

22. A negative list approach often characterises situations in which few sectors are excluded or only a few limitations are reported, and allows for the automatic inclusion of new sectors in the agreement. A positive list approach can be seen as a first step toward further investment liberalisation by adding sectors to the positive list. Indeed, positive lists are often associated with a clause foreseeing future liberalisation of investment (see Column 27 in Table 5). The EC-Chile RTA follows this model of liberalisation, as does Thailand in its two RTAs with Australia and New Zealand.

23. However, the exact content of the list is important in determining the effects of liberalisation. Depending on which industries are open to foreign competition, distortions in both economies may arise, which could offset the benefits of liberalisation. Table 4 does not report enough information to assess the content of the list of limitations and, technically speaking, the same level of concessions or the same limitations can be identically described by a positive or negative list. Thus, an equal score has been given to positive and negative lists in the index.

(ii) Provisions on non-discrimination post-establishment (in non-services sectors)

24. Standards on treatment relating to the post-establishment phase complement the provisions on the right of establishment (entry) of foreign investments. While the extension of national and most-favoured-nation treatment to the pre-establishment of foreign investment is relatively recent, most of the RTAs studied apply these standards to both the pre- and post-establishment phases. The only exceptions to this trend include the EC-Chile and EFTA-Chile agreements, where national treatment is limited to pre-establishment, perhaps because of the existence of bilateral investment agreements between Chile and

some of the EC and EFTA Member States. It is sometimes specified that national or most-favoured-nation treatment applies only "in like circumstances" (as is the case in U.S. agreements).

25. *National treatment*. While the definition of national treatment and the actual situations to which it applies can differ, the underlying principle of national treatment grants foreign investors treatment not less favourable than the treatment granted to domestic investors. Column 3 in Table 4 indicates whether such a clause is included in each RTA. The concession of national treatment is usually qualified by general exceptions and by a negative list of industry-specific exceptions. Only the agreement between the EC and FYROM has no limitations on national treatment[6]. In all of the other agreements – with the exception of Thailand-Australia – a negative list of limitations is provided. The Thailand-Australia RTA adopts a more restrictive approach by applying national treatment only in relation to a positive list of sectors.

26. *Most-favoured-nation treatment.* By granting MFN treatment, the host country commits to according to investors or investments of the other country treatment no less favourable than the treatment granted to investors or investments of any third country. The function of the MFN standard is two-fold; it removes economic distortions by treating all investments in the same way and strengthens the liberalisation process by automatically extending the most liberal treatment to foreign investments covered by agreements containing the MFN clause. Because MFN treatment liberalises investment with a group of countries, it represents an efficient and rapid way to increase FDI. However, MFN clauses at the multilateral level ensure the same treatment for all countries that are party to the multilateral agreement, while at the regional level MFN provisions extend to the bilateral partner only the better treatment that is accorded to a non-party.

27. Among the agreements with post-establishment non-discrimination provisions, more than half include both MFN and national treatment (Column 5 in Table 4). If included, exceptions to the MFN principle are often provided in a negative list [7] (Column 6).

(iii) Investment in services sectors

28. There is only one agreement in Table 4 that excludes investment in services and it is a relatively old agreement. Indeed, most RTAs today include rules on trade in services and, in particular, Mode 3 (commercial presence). Further, since Table 4 presents only agreements with substantive investment provisions, this suggests that provisions on investment are rarely limited to goods and that services liberalisation often embodies both cross-border trade and commercial presence. If an agreement includes a section on trade in services, it is also likely to cover investment.

29. It is not uncommon for the provisions on trade in services via commercial presence (Mode 3) and investment in goods to differ. Column 7 indicates whether the provisions on trade in services through commercial presence are incorporated in the investment section of the agreement – in which case the rules are the same for both goods and services – or whether they are included in a specific services chapter. Seven agreements incorporate investment in services in the investment chapter (*e.g.*, NAFTA), and limit the services chapter to cross-border trade in services. All of the other agreements, with the exception of PATCRA, which does not cover services, treat Mode 3 services trade (commercial presence) in the same section as the other modes of services supply.

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6 . While this agreement carves out several sectors from the investment chapter (*e.g.*, air transport services, inland waterway transport services and maritime cabotage services), this limited list of exclusions is often found in RTAs that contain investment provisions.

7. The regional economic integration organisation (REIO) exception represents an important and frequent exception to MFN treatment in RTAs. The purpose of this exception is to preserve the preferential treatment inside the regional organisation and avoid problems of free riding.

30. Columns 8 to 13 in Table 4 describe the non-discrimination provisions on pre- and post-establishment. "GATS" indicates that the agreement refers to the WTO's General Agreement on Trade in Services (GATS). This reference implies that market access and national treatment are granted to services included in a schedule of commitments (positive list) with a general obligation of MFN treatment (and exemptions). The reference to GATS clearly highlights that the RTA does not go further than the multilateral commitments made in the GATS. When there is a positive list of limitations to market access and national treatment, and thus a schedule of commitments specific to the RTA, it is unclear whether the same commitments have been included in the RTA or whether the multilateral and regional commitments differ.

31. A clear pattern emerges in the services section of the table. In RTAs in which investment in services is not distinguished from investment in goods, the negative list approach is the most common. On the other hand, agreements that contain a specific services chapter that covers all modes of services supply are clearly modelled after the GATS with a positive list of commitments for market access and national treatment.

(iv) Investment regulation and protection

32. While this category includes provisions of a different nature, they are still clearly relevant to the rights of investors. These provisions limit the ability of governments to impose particular measures on investment, restrict the activities of investors or expropriate their investments. In this section of Table 5, a yes/no approach is adopted in which "yes" generally corresponds to the highest standard. For example, in Column 16 (ownership requirements), only a clear provision prohibiting any type of ownership restrictions takes a "yes" value. If a RTA contains an article on ownership requirements without a general principle of prohibition, the value is coded "no". These provisions can positively influence the investment climate as, for instance, certain investments have hinged on provisions such as ownership restrictions. Provisions on investment regulation and protection can be found as a package in a small number of agreements, with NAFTA, Canada-Chile and Mexico-Japan including the most extensive "package" of these provisions.

33. *Provisions prohibiting performance requirements* (Column 14). Performance requirements, which are often negotiated during the pre-establishment phase, are requirements imposed on investors that can have trade-restrictive and distorting effects. For example, local content requirements can limit the ability of investing companies to import intermediate goods, which forces them to source locally and could impact productivity and competitiveness. Column 15 indicates whether the RTA goes beyond the WTO Agreement on Trade-Related Investment Measures (TRIMs) in prohibiting performance requirements which are not listed in the agreement[8]. In the table, 7 out of the 24 RTAs prohibit performance requirements and, when they do so, they generally go beyond the TRIMs agreement (6 out of 7).

34. *Specific provision prohibiting ownership requirements* (Column 16). Again, only eight agreements contain such a prohibition (although there is not a perfect match with the eight RTAs prohibiting performance requirements). The rule is, however, limited to investment in services in four agreements.

35. *Free transfer of funds* (Column 17). The free flow of all investment-related transactions and capital movements is a core provision in any investment agreement. Not surprisingly, all RTAs in Table 5 include a provision on the free transfer of funds except PATCRA and US-Jordan. Sometimes, there are

8. The list includes measures that require particular levels of local procurement by an enterprise ("local content requirements") or that restrict the volume or value of imports that such an enterprise can purchase or use by an amount related to the level of its exports ("trade balancing requirements").

exceptions or limitations to the rule which are not reported in the table, but which are standard across international investment agreements.

36. *Temporary entry and stay for key personnel* (Column 18). This provision is important because any investment generally implies the movement of key personnel. However, the removal of barriers on the temporary entry and stay of key personnel can be controversial because it touches upon sensitivities in migration law. In some limited cases, a RTA states that the free movement of people and the temporary entry and stay for key personnel derives from this general rule. But in most cases, this provision is specific to investment-related temporary migrations. Half of the agreements in Table 5 include a provision on the temporary entry and stay for key personnel.

37. *Provisions on expropriation* (Column 19). The potential threat of expropriation or nationalisation can discourage investors. As a result, this provision represents a core rule in many investment treaties by providing guidelines that indicate that expropriation can only take place on a non-discriminatory basis and with adequate compensation. In Table 5, 11 out of the 24 RTAs contain such a provision, although provisions on expropriation may exist in other agreements, such as BITs. Rules on expropriation are often included in agreements with the most substantive investment provisions.

38. *Fair and equitable treatment* (Column 20). In contrast to national treatment and most-favoured-nation treatment, which are contingent standards based on the treatment afforded to other groups of investors, the fair and equitable treatment standard is an absolute standard drawn from customary international law. When provided for in the investment regimes of RTAs, fair and equitable treatment is meant to be extended to investments regardless of the treatment afforded to national investments.

(v) Dispute settlement

39. This category distinguishes between State-State dispute settlement (Column 21) and State-Investor dispute settlement (Column 22). All RTAs include a mechanism to resolve disputes between States concerning the interpretation and implementation of the agreement, but this mechanism is not specific to investment disputes. Column 21 reports whether State-State dispute settlement is limited to consultations, involves ad hoc arbitration or is resolved through a political body formed by the parties to the agreement.

40. State-Investor dispute settlement may provide a more effective way of implementing investment provisions in a RTA by enabling investors to make claims and defend their interests directly. Column 22 indicates the type of dispute settlement provided. The categories include "*ad-hoc* arbitration", which involves an independent international arbitrator generally under the rules of the United Nations Commission on International Trade Law (UNCITRAL) and "permanent arbitration", which generally refers to the International Centre for the Settlement of Investment Disputes (ICSID). State-Investor dispute settlement is provided in 11 of the 24 agreements in Table 5, generally through both UNCITRAL and ICSID but, in two cases, only one option is available.

(iv) Investment promotion and co-operation

41. The last category in Table 5 includes investment provisions of a different type. RTAs often include provisions on investment promotion and co-operation if they do not contain provisions on establishment or non-discrimination. These provisions focus on the promotion of investment between partner countries and the harmonisation of certain rules.

42. *Investment promotion* (Column 23). Provisions on investment promotion are common across the RTAs in Table 5 (15 out of the 24 RTAs). These provisions are not limited to RTAs that do not include provisions liberalising investment flows or protecting investors. However, agreements like NAFTA, which

contain relatively extensive provisions in all of the previous categories, do not contain measures on investment promotion (or co-operation).

43. *Investment co-operation mechanisms* (Column 24). The value "yes" in this column indicates that not only have the partner countries agreed to co-operate, but they also detail the kinds of actions they intend to take to organise this co-operation. For example, RTAs sometimes stipulate that the signatories will exchange information or create a specific body or commission.

44. *Harmonisation of rules* (Column 25). Some agreements focusing on co-operation include a general objective to harmonise investment rules and policies. These provisions are generally not very specific about how this harmonisation should occur or the types of rules that should be harmonised.

45. *Any type of asymmetries?* (Column 26). As the RTAs covered are North-South RTAs, one can expect asymmetries in the investment provisions to provide differential treatment in favour of the developing country or to take into account its specific needs. Curiously, when asymmetries exist, the direction of the preferred treatment benefits the developed – rather than the developing – country partner more concretely. In contrast, "soft" asymmetries tend to benefit the developing country.

46. An example of "substantive" asymmetry can be found in the EC-Jordan RTA, in which the EC grants pre-establishment MFN access to Jordanian non-services investment, while Jordan grants MFN and national treatment pre-establishment access to EC investors in non-services sectors. Alternatively, there are examples of "soft" asymmetries that benefit the developing country. In the EC-Tunisia RTA, for instance, the agreement specifies that the EC Member States "attach importance to boosting the flow of direct investment to Tunisia. They agree to expand Tunisia's access to Community investment promotion instruments in accordance with the relevant Community provisions". There is no corollary for boosting investment in EC Member States.

47. *Clause foreseeing the future liberalisation of investment* (Column 27). Particularly in agreements with few or no provisions on pre-establishment and non-discrimination, it is common to find a clause on future liberalisation, although it is sometimes limited to Mode 3 services trade. In many cases, it is difficult to determine how these clauses have been implemented, if at all.

2. Index methodology

(i) Numerical values

48. Based on the information provided in Tables 4 and 5, the elements of each sub-category were coded numerically. The coding was done in the most neutral way possible by normalising the information on a zero-to-one scale, where zero indicates the absence of a given provision and one represents the most FDI-friendly provision in the list of possible options[9]. For example, to assess limitations on establishment, one begins with the universe of possibilities. Table 4 indicates that there are three options: (1) "no" (when no right of establishment is granted), (2) "NT" (when the agreement provides for establishment on a national treatment basis), and (3) "MFN+NT" (when the agreement provides for establishment on a national treatment and most-favoured-nation basis). Using this methodology, the "no" option takes the value of zero (no right of establishment) while the right of establishment on a national treatment and most-favoured-nation basis takes the highest value, which is one. The other option rests at the centre of the zero-to-one interval, and takes a value of 0.50.

9 . There is, of course, some approximation in this process because not all agreements perfectly fit the taxonomy described in Table A1. In addition, provisions are sometimes subject to interpretative notes or exceptions which are not fully taken into account in Table A1.

49. For some categories, such as establishment, in which the options include "No", "NT", "MFN+NT", the result with this methodology is not numerically different than if we had used two columns for national treatment and MFN (with a yes/no answer taking the value of zero or one). An agreement with only national treatment (NT) would result in 1 in the first column and 0 in the second. The simple average of the two columns is 0.5, which is precisely the value given to "NT" in the coding system. Since the aggregate index is computed on the basis of a simple arithmetic average, such a choice has no bearing on the results. The subjectivity in the analysis is limited to the number and choice of the different categories in Tables 4 and 5.

50. The entire coding system is presented in Table 1 below, while Tables 6 and 7 (in Annex I) shows the results for the 24 North-South RTAs in the dataset.

Table 1. Coding of investment provisions

Category	Score
Establishment (non-services sectors)	
Right of establishment	
No	0.00
NT	0.50
MFN+NT	1.00
Pre-establishment limitations	
(n/a)	0.00
Positive or negative list	0.50
None	1.00
Non-discrimination (non-services sectors)	
National treatment	
No	0.00
Yes	1.00
Limitations to national treatment	
(n/a)	0.00
Positive or negative list	0.50
None	1.00
Most-favoured-nation	
No	0.00
Yes	1.00

Category	Score
Limitations to most-favoured-nation	
(n/a)	0.00
Positive or negative list	0.50
None	1.00
Investment in services sectors	
Investment in services covered by the RTA	
No	0.00
Yes	1.00
Provisions on establishment	
None	0.00
NT	0.50
MFN+NT / Market access	1.00
Pre-establishment limitations in services	
(n/a)	0.00
Positive or negative list	0.50
None	1.00
National treatment	
No	0.00
Yes	1.00
Limitations to national treatment in services	
(n/a)	0.00
Positive or negative list	0.50
None	1.00
Most-favoured-nation	
No	0.00
Yes	1.00
Exceptions to most-favoured-nation	
(n/a)	0.00
List of exceptions	0.50
None	1.00
Investment regulation and protection	
Provisions prohibiting performance requirements	
No	0.00
Yes	0.50
Yes, beyond TRIMS	1.00
Specific provision prohibiting ownership requirements	
No	0.00
Yes	1.00
Free transfer of funds	
No	0.00
Yes	1.00
Temporary entry and stay for key personnel	
No	0.00
Yes	1.00
Provisions on expropriation	
No	0.00
Yes	1.00

Category	Score
Specific reference to fair and equitable treatment	
No	0.00
Yes	1.00
Investment protection and dispute settlement	
State-Investor dispute settlement	
No	0.00
Ad hoc or permanent arbitration (only one)	0.50
Ad hoc & permanent arbitration	1.00
Investment promotion and co-operation	
Investment promotion	
No	0.00
Yes	1.00
Co-operation mechanisms	
No	0.00
Yes	1.00
Harmonisation of rules	
No	0.00
Yes	1.00
Any type of asymmetries (in favour of the developing economy)	
No	0.00
Yes	1.00
Clause foreseeing the future liberalisation of investment	
No	0.00
Yes	1.00
(Services only)	0.50

(ii) Creating the final index

51. After assigning a numerical value to each type of investment provision (Tables 6 and 7), it is necessary to weight them to build an aggregate index. After experimenting with several methods of weighting, a simple average proved to be the most neutral and effective in the empirical analysis[10]. The advantage of this methodology is that it represents a simple measure of the extensiveness of investment provisions in the various RTAs. Moreover, we do not impose an *a priori* and subjective view of how various investment provisions should affect trade and investment flows by assigning different weights[11].

52. This approach is in line with other composite indexes that include variables in which it is either unclear how to evaluate one of the variable options relative to the others, or if there is no reason to think that equal weights for several variable options do not apply. It should also be kept in mind that the exercise is not a qualitative assessment of the value of each provision per se, but rather a ranking exercise used to obtain an index clearly separating different types of RTAs with investment provisions. Thus, the index is designed to be used in subsequent quantitative analysis and not to assess the quality of each agreement.

10 . In particular, we also used principal component analysis, a type of factor analysis in which each category is weighted according to its contribution to the overall variance in the data, to create an aggregate index score. However, this method was neither the most robust nor transparent.

11 . In light of the importance that some countries place on particular variables, such as national treatment, the Secretariat also experimented with alternative weighting schemes. One such method involves "overweighting" national treatment relative to most-favoured national treatment. These approaches did not improve the results of the index in the models.

The final index is presented in Table 2 and visually in Figure 6 (Annex I), providing a representation of the ranking of the RTAs according to the depth and extensiveness of their investment provisions.

Table 2. Index of investment provisions

RTA	Year into force	Index
Mexico - Japan	2005	**0.760**
Canada - Chile	1997	**0.720**
EC - FYROM	2001	**0.720**
NAFTA	1994	**0.680**
EC - Jordan	2002	**0.640**
Thailand - Australia	2005	**0.640**
United States - Chile	2004	**0.640**
United States - Singapore	2004	**0.640**
EFTA - Singapore	2003	**0.600**
Japan - Singapore	2002	**0.580**
Thailand - New Zealand	2005	**0.580**
New Zealand - Singapore	2001	**0.500**
EFTA - Mexico	2001	**0.480**
EC - Chile	2003	**0.460**
Singapore - Australia	2003	**0.460**
EC - Mexico	2000	**0.440**
EC - Morocco	2000	**0.420**
EC - South Africa	2000	**0.420**
EC - Tunisia	1998	**0.420**
EC - Egypt	2004	**0.380**
EFTA - Chile	2004	**0.380**
EC - Israel	2000	**0.360**
United States - Jordan	2001	**0.260**
PATCRA	1977	**0.200**
Average		*0.516*

53. The RTA with the highest score is Mexico-Japan (0.760), followed by Canada-Chile and EC-FYROM (0.720), while the lowest score went to PATCRA (0.200). These results simply mean that the trade agreement between Papua New Guinea and Australia has fewer of the investment provisions listed in Tables 4 and 5 than the other agreements, and that the agreement between Mexico and Japan has more of the provisions contained in the tables than the other agreements. If we compare the results from the analysis of North-North and South-South RTAs (see Annex III), the agreement with the highest score is the European Community (Treaty of Rome) with a score of 0.780. On average, North-North and South-South RTAs with investment provisions score lower (0.506 and 0.495, respectively) than North-South RTAs (0.516). It is also worth mentioning that when South-South RTAs include an investment chapter, they contain relatively extensive investment provisions, as evidenced by the small difference between the average index scores in North-North and South-South RTAs.

54. Several interesting patterns emerge from Table 2. For one, all of the agreements signed by the United States are clustered together and score quite high with the exception of US-Jordan, perhaps in part because the United States and Jordan had already concluded negotiations on a bilateral investment treaty prior to the conclusion of the RTA negotiations. In general, NAFTA members have tended to perpetuate the approach to investment set forth in NAFTA, which incorporates substantial provisions on pre- and post-establishment, services and State-Investor dispute settlement (see NAFTA case study in Section IV).

55. The EC agreements are also grouped together, apart from the EC agreements with FYROM, Jordan and Chile. These agreements may be unique for various reasons. For instance, FYROM is an EC accession country candidate, and it makes sense that provisions of all types would be deeper as they represent a step toward closer economic relations. In addition, the EC-Jordan agreement was negotiated within the context of Jordan's accession to the WTO, so other considerations may have played a role in determining the overall framework of the agreement. Chile can also be viewed as a special case as it represents the first time that the EC included provisions on pre-establishment in a RTA with a non-EC accession country.

56. The majority of the EC agreements exclude the right of pre- or post-establishment, which is often included in EC country BITs, and focus significantly on services, using a positive list approach to schedule the liberalisation of services. They also tend to include the same types of provisions, such as rules providing for the free transfer of funds, and exclude investment-specific rules on dispute settlement (investment is covered in the general section on the settlement of disputes).

57. Several of the countries that have concluded RTAs with developed countries, such as Singapore and Chile, tend to conclude agreements with fairly extensive investment provisions (*i.e.*, they tend to fall in the top half of the index chart). In addition, it appears that the more RTAs that a country has signed, the higher the score. This could be a function of the fact that once a country has negotiated a RTA with extensive investment provisions and it has implemented the necessary domestic regulations to accommodate that agreement, it is easier to replicate the provisions with other countries.

58. Further, geography does not appear to determine the extensiveness of investment provisions since, for example, EC-Jordan and EC-Egypt have very different index scores. These patterns tend to suggest that while there is a diversity of provisions on investment in RTAs, many countries seem to follow a loose model that evolves over time. Further, it appears that investment provisions in RTAs are a combination of past experience as well as how far "new" countries are willing to go in following the approach favoured by the larger developed partner.

III. Quantitative Analysis

59. The use of the index of investment provisions in empirical work represents an important next step in the analysis of the relationship between RTAs with substantive investment provisions and trade and investment flows. The quantitative analysis in this section uses both a dummy variable that indicates if the country pairs are party to a RTA with substantive investment provisions as well as the index of investment provisions to build upon the existing gravity model literature. To correctly run the gravity model, the index of investment provisions has also been calculated for North-North and South-South RTAs. The purpose of the quantitative analysis is to assess the relationship between substantive investment provisions and trade and investment flows.

1. Background

60. The gravity model has proven a useful tool in evaluating the determinants of bilateral trade flows between countries. The core of the gravity model rests on the assumption that trade flows between two countries are determined by size (economic mass) and trade-related friction (distance). GDP often serves as a proxy for size, and geographical distance and cultural characteristics, such as sharing a common language, often represent friction.

61. Recently, researchers have sought to fine-tune the gravity model by including additional variables to control for other determining factors of trade flows between countries. The gravity model was first used to study the effects of RTAs on bilateral trade flows in Aitken's (1973) seminal study. Since

then, most studies have included one or more dummy variables to assess the impact of RTAs on trade flows (see, for example, Soloaga and Winters, 1999).

62. However, the gravity model has had a somewhat chequered history. In the past, many researchers voiced concerns about the lack of a theoretical foundation for the gravity model. In addition, scholars questioned the usefulness of using distance as a proxy for trade-related friction given that the trade costs associated with transporting a good over a particular distance are much greater in poor countries than in rich ones (World Bank, 2005). More recent research has shown that a version of the gravity model can be derived from economic theory, and that relative price considerations can be incorporated in a gravity model framework (see Anderson and van Wincoop, 2004). Baldwin and Taglioni (2005) also argue that the gravity model has a more solid theoretical foundation than any other available trade model. Moreover, it remains the most empirically robust model available to describe bilateral trade flows between countries.

63. The empirical significance of the gravity model, coupled with the ability of economists to derive a version of the gravity equation from standard trade theory, has led to something of the model's rebirth among researchers. And because trade and investment flows are determined by many of the same factors, scholars have begun to apply the gravity model to investment flows (see Adams *et. al*., 2003; Daude *et. al*. 2003; Stone and Jeon, 2000). The quantitative analysis in this section relies upon the gravity model to analyse the determinants of bilateral trade and investment flows between countries in the RTA context, but refines the dummy variable methodology used previously in the literature by extending it to particular provisions in the agreement.

2. The base models

64. The versions of the gravity model used in this paper draw upon both the trade and investment literature, but go a step further in the study of the gravity model in the RTA context. Two of the models outlined in this paper include an index that quantifies the extensiveness of investment provisions in various RTAs to try to assess how well investment provisions in RTAs explain trade and investment flows. The paper also seeks to analyse the extent of trade and investment creation and diversion in all North-South RTAs containing investment provisions, borrowing from the approach used by Adams *et. al*. (2003).

65. The base trade model tests the effects of joint GDP, distance, joint GDP per capita, exchange rates (both nominal rates and volatility), bilateral tariffs and various geographical and cultural factors – such as whether or not the two countries share a border, a common official language and a colonial past – on bilateral exports[12]. The base investment model uses the same explanatory variables to test their effects on net positive outward FDI flows. According to theory, one expects trade flows – and, in our extension, FDI flows – to be a positive function of joint GDP and cultural factors and a negative function of distance, tariff rates and fluctuations in the exchange rate. We expect joint GDP per capita to be ambiguous as shown in the literature.

66. Joint GDP should associate positively with trade and investment because countries with relatively large markets trade more and are more attractive to investors than countries with small markets. Sharing a border, common language and past colonial relationship should also positively relate with trade and FDI. For one, sharing a border implies less trade friction between countries. Moreover, sharing a common language and a past colonial relationship implies that various cultural factors make certain country pairs more likely to engage in trade and investment. Distance, tariffs[13] and bilateral exchange rates should act as

12 . Joint GDP and joint GDP per capita are used rather than individual GDP because the dataset is based on bilateral pairs (see Box 1). Some specifications presented in Annex IV allow for the inclusion of the GDP of the reporter and partner countries separately.

13 . While this is true for trade flows, tariffs have an ambiguous effect on FDI flows.

negative forces on trade and FDI flows. Why? Because tariffs and exchange rate volatility increase trade costs and the farther away two countries are, the more difficult – and often more costly – it is to trade goods and services.

67. Regarding joint GDP per capita, a larger value may indicate a smaller combined population for a given level of GDP and, since a lower population can be expected to exert a dampening effect on trade, the variable could have a negative coefficient (see De Rosa and Gilbert, 2006). However, as an indication of the level of development of the country pairs, the joint GDP per capita can also be expected to have a positive coefficient because wealthier countries tend to trade and invest more than poorer countries. As a result, the combined effect is ambiguous. Annex IV includes a complete description of the variables and the mathematical expressions of each of the models.

68. All of the gravity models specified in this paper use unbalanced bilateral panel data for the period 1990-2004. In line with current conventions, the data on FDI flows is calculated on a net, rather than a gross, basis. (Data on FDI flows from all of the major international sources – OECD, IMF, UNCTAD and the World Bank – are calculated on a net basis because the data is constructed from balance of payments schedules.) This formulation is somewhat problematic in the gravity model framework because negative net flows are "lost" when transformed into natural logarithms. To help alleviate this data problem, we use a Tobit regression approach which allows us to account for the censored nature of the data. A Tobit specification estimates the regression coefficients under the assumption that the dependent variable and the distribution of the residuals are truncated.

69. The trade models are estimated using ordinary least squares (OLS) regression techniques and robust standard errors that are consistent with heteroskedastic conditions. The FDI models are estimated using a Tobit specification. Further, time and country fixed effects are included in both models to control for omitted variables that vary both across time and country[14]. The dataset includes country pair data for which more than one observation exists. Annex IV presents alternative regression methodologies to test the robustness of the results.

14 . Many scholars suggest that the inclusion of country fixed effects with a time dimension appropriately account for the price resistance terms derived by Anderson and van Wincoop (2004). However, if some of the independent variables also vary by country and by period, the use of time-varying country fixed effects can "overcorrect" for the price resistance terms (see IMF, 2004).

Box 1. Panel data and fixed effects

Panel datasets, such as the one used in the quantitative analysis in this paper, are constructed by collecting cross-country data on a particular variable for more than one period. Our panel dataset is driven by country pair data on trade and FDI flows in 15 different periods (1990-2004). One advantage of using panel data rather than cross-sectional data, which is often used in partial equilibrium models, is that the estimates are much less sensitive to omitted variable bias because they do not assume that one year of data is representative of the long-run equilibrium (Blonigen, 2005).

Fixed effects terms can be used as a powerful econometric technique in panel data models. Fixed effects, also called "unobserved effects", control for variables that are specific to the variable of interest (in this case, exports and FDI flows). For example, in the model presented in this paper, fixed effects allow us to create one variable specific to each year in the dataset as well as each reporter and partner country. Thus, we include one fixed effect for the year 1997 that controls for any variables particular to that year, such as the East Asian financial crisis. We also include a fixed effect term for each reporter and partner country. Variables such as a measure of the level of investment protection present in an individual country's investment regime or the amount of red tape required to operate a business is captured in each individual reporter and partner country's unique fixed effect term.

These "unobserved variables" can be expected to directly affect the dependent variables (exports and FDI flows), so it is important to control for them in the models. A consequence of including these fixed effects terms is that only data that is related to a country pair – such as how far away a given country is from its trading partner – can be included. Other data that is country-specific, such as a measurement of the area of a country, cannot be included because it will be perfectly correlated with the fixed effects terms.

However, researchers should be cautious when using fixed effects terms in gravity models. In a recent paper, Cheng and Wall (2005) show that how researchers specify fixed effects terms in the gravity model can significantly impact the results. They test alternative specifications, including country fixed effects with a time dimension and bilateral pair fixed effects. As a robustness check, the models presented in this paper are also run using these alternative specifications, the results of which are presented in Annex IV.

3. The RTA variables

70. The two base models are supplemented with other, RTA-specific variables to analyse the extent to which investment provisions in RTAs can help explain trade (exports) and investment (FDI) flows. Almost all RTA studies that use the gravity model framework employ a dummy variable to analyse the effects of the RTA on trade and, to a lesser extent, FDI flows. This "black box" method, while useful, is also somewhat imprecise. A key value-added of this study is the addition of a dummy variable for agreements with substantive investment provisions and an index of the extensiveness of these investment provisions in RTAs.

71. On an intra-bloc level, a RTA that sets lower tariffs among the signatories should discourage market-seeking or tariff-jumping FDI, leading to an increase in trade and a decrease in investment. But, lower trade barriers may also encourage efficiency-seeking FDI as firms with low fixed costs find it profitable to locate in multiple countries in the bloc and trade intermediate inputs. On an extra-bloc level, if a RTA contains trade preferences that are relatively different *vis-à-vis* the rest of the world, then lower intra-bloc trade barriers may discourage extra-bloc market-seeking FDI in favour of extra-bloc efficiency-seeking FDI. On the investment side, investment provisions should, in theory, positively impact intra-bloc investment and, to the extent that those provisions are applicable to "foreign" firms that establish in one of the RTA signatories, investment from countries located outside of the RTA area. These complex inter-relationships compel researchers to analyse the effects of lower trade barriers and investment liberalisation, protection and promotion via a RTA on both trade and investment to provide a comprehensive analysis.

Regression no. 1: Dummy variables for RTAs with substantive investment provisions and BITs

72. The first dummy variable created indicates whether the country pairs in the dataset belong to a RTA with substantive investment provisions. This method represents a departure from the literature in the sense that this model adds the stipulation that the RTA must contain substantive investment provisions (most studies include a dummy variable that indicates whether a RTA exists between the country pairs). All RTAs – both WTO-notified and un-notified between countries at all levels of development – were analysed across the sample. This variable helps determine, at the most general level, the degree to which RTAs that contain investment provisions can explain trade and investment flows.

73. In addition, since some country pairs have also entered into a BIT, which may include various post-establishment protection and promotion rules, a dummy variable that indicates if the country pairs are party to a BIT is also included. Further, we test whether the combination of a RTA with investment provisions and a BIT affects FDI flows. This variable takes the value of 1 if the country pair is party to both a RTA with investment provisions as well as a BIT and 0 otherwise. In theory, a BIT should be expected to associate positively with FDI. However, the empirical literature is ambiguous, as both small positive and insignificant effects have been reported (see UNCTAD, 1998; Hallward-Driemeier, 2003; Egger and Pfaffermayr, 2004).

74. One expects that the relationships among the variables in the base model will continue to hold – that is, that the distance, border, language, colonial relationship, tariff, joint GDP, joint GDP per capita and exchange rate variables should continue to interact with trade and investment flows in the same way. If RTAs that contain investment provisions are positively associated with trade and investment flows, then we can conclude that additional market access and investor protection are likely related to higher levels of trade and investment. In addition, positive coefficients would indicate that trade complements, more than it substitutes for, investment in the context of RTAs that contain substantive investment provisions. The models are specified mathematically in Annex IV.

Regression no. 2: The index of investment provisions

75. The index of investment provisions transforms the binary nature of the dummy variable created in the first model by first replacing the 1s of the dummy variable with the aggregate index created in the Part II of the paper and then taking the natural log. Because the index measures the relative depth or extensiveness of investment provisions across RTAs, this variable provides more nuanced estimates of the degree to which trade and investment flows can be explained by RTAs that include substantive investment provisions. What matters in the regression is not the actual score of the index, but the relative ranking across agreements. All RTAs with investment provisions – regardless of the level of development of the partner countries involved – are analysed.

76. As with the previous regression, one expects that the relationships among the variables in the base model will continue to hold. In addition, if the index of investment provisions positively relates with trade and investment flows, then we can conclude that additional market access and investor protection are probably related to higher levels of trade and investment. Similarly, a positive coefficient suggests that trade complements investment more than it substitutes for investment in the context of RTAs that contain substantive investment provisions. The models are specified mathematically in Annex IV.

Regression no. 3: Individual RTA dummy variables that measure investment/trade creation and diversion

77. In the third regression, we try to assess trade and investment creation and diversion resulting from the entry into force of the North-South RTAs of interest in this paper. To assess creation and diversion, three variables are created for each of the RTAs in the dataset, which are then included in one

trade and one investment regression. The first RTA variable takes the value of the aggregate index when both the reporter and the partner country are party to the RTA. The second variable takes the value of the aggregate index when the reporter country is party to the RTA, but the partner country is not. The third variable takes the value of the aggregate index when the partner country is party to the RTA, but the reporter country is not. Through this methodology, the model attempts to show if trade and investment creation and diversion are occurring as a result of the entry into force of the North-South RTAs in the dataset.

78. Again, the relationships among the variables in the base model should continue to hold. The variable that takes the value of the index of investment provisions when both the reporter and partner countries are party to the RTA ($\Sigma_{ij}RTA_{ijt}$) will show a positive coefficient if there is a positive relationship between the variable and trade and investment flows (*i.e.*, an increase in intra-bloc trade or investment) and a negative coefficient if the RTA is negatively associated with trade and investment flows (*i.e.*, a decrease in intra-bloc trade or investment). The same logic applies to the variables that represent the reporter's trade with the rest of the world ($\Sigma_{i}RTA_{ijt}$) and the partner's trade with the rest of the world ($\Sigma_{j}RTA_{ijt}$). The literature in this area is sparse, and the few studies that exist do not show strong, significant results for the creation and diversion variables. The models are specified mathematically in Annex IV.

4. The results

79. The results from the trade models (first half of Table 3) show that about 91% of the variation in the data can be explained by the variables in the equation (that is, the "goodness of fit" is high). This is unsurprising given the proven robustness of the gravity model in explaining bilateral trade flows between countries and the inclusion of fixed effects. Because the investment models were run under a Tobit specification, we report a pseudo-r2[15] as a corresponding measure of "goodness of fit". This measure indicates that about 68% of the investment flows in our model are accounted for by variables in the equation. As a robustness check, the investment models were run in the OLS framework used for the trade models reported here (see Annex IV).

80. Further, the traditional gravity model explanatory variables in both models – distance, language and colonial relationship – are all significant and have coefficients within the established range in the literature[16]. The exchange rate volatility measure is also negative and significant, as expected, and the joint GDP per capita variable takes a positive and significant coefficient in both the trade and investment models.

81. In the base models, the tariff variable is negative and significant in the trade model, but it is insignificant in the investment model. This result is intuitive – tariffs should negatively affect trade flows, but they have an ambiguous effect on investment flows. Whether the net impact of tariffs on investment is positive or negative depends in part on the motivation of investors – that is, whether trade complements investment more than it substitutes for investment. In this sample, the tariff-related effect is ambiguous.

82. The coefficient for the sum of the logs of GDP did not result as one would expect. The joint market size measure (sumlngdp) is negative and significant in the trade model and insignificant in the investment model (we would expect a positive coefficient). However, in specifications that allow for the

15 . We estimate the pseudo-r2 value by calculating the r2 between the predicted and observed values, a better measure of fit for a Tobit specification than the McFadden pseudo-r2 that is generated automatically in many statistical packages.

16 . The border variable was insignificant in the investment model. This is not unsurprising, however, as the literature suggests that the border variable is often highly correlated with some of the other gravity dummy variables, such as colonial relationship.

inclusion of the reporter and partner country GDPs separately, we find the expected sign for the coefficient (see Annex IV). The nominal exchange rate variable is insignificant in both models.

83. It is likely that the country fixed effects are picking up some of the effect of the exchange rate and joint GDP variables. This is because while nominal exchange rates, GDP and population do indeed fluctuate yearly, for some countries, the year-to-year changes are not substantial. In these cases, at least some of the effect of nominal exchange rates, GDP and GDP per capita would be captured in the country fixed effects terms. For a robustness check, the results of models using alternative fixed effects specifications are reported in Annex IV. For all of the other specifications, the nominal exchange rate and joint market size variables are significant and take the expected signs and magnitudes.

Table 3. Summary of the regression results - Trade & FDI models

	Dependent variable: Exports			Dependent variable: FDI					
	Base model	Investment index	Investment dummy	Base model	Investment index	Dummy BIT	Investment dummy & dummy BIT	Investment index & dummy BIT	Interaction dummy bit & rta
Distance	-0.964***	-0.936***	-0.936***	-0.956***	-0.886***	-0.957***	-0.886***	-0.887***	-0.896***
	(-63.85)	(-57.83)	(-57.84)	(-24.67)	(-21.43)	(-24.56)	(-21.37)	(-21.35)	(-21.48)
Border	0.225***	0.234***	0.234***	0.145	0.158	0.145	0.159	0.159	0.169
	(4.66)	(4.88)	(4.89)	(1.29)	(1.42)	(1.30)	(1.43)	(1.42)	(1.51)
Colonial relationship	1.213***	1.221***	1.221***	1.088***	1.104***	1.088***	1.103***	1.104***	1.102***
	(24.75)	(24.95)	(24.96)	(8.58)	(8.72)	(8.58)	(8.71)	(8.72)	(8.71)
Common official language	0.420***	0.429***	0.429***	0.502***	0.525***	0.501***	0.524***	0.525***	0.517***
	(15.19)	(15.54)	(15.54)	(6.79)	(7.10)	(6.78)	(7.08)	(7.09)	(6.97)
Tariff	-0.183***	-0.151***	-0.151***	0.003	0.086	0.003	0.085	0.085	0.074
	(-10.42)	(-7.88)	(-7.90)	(0.06)	(1.81)	(0.06)	(1.80)	(1.81)	(1.56)
Joint market size	-0.583**	-0.555**	-0.555**	-0.704	-0.642	-0.709	-0.650	-0.648	-0.640
	(-3.11)	(-2.96)	(-2.96)	(-1.38)	(-1.26)	(-1.39)	(-1.27)	(-1.27)	(-1.25)
Sum of GDP per capita	1.217***	1.196***	1.196***	1.153*	1.119*	1.158*	1.126*	1.124*	1.120*
	(6.32)	(6.22)	(6.23)	(2.20)	(2.13)	(2.20)	(2.15)	(2.14)	(2.13)
Nominal exchange rate	-0.017	-0.019	-0.018	-0.019	-0.024	-0.019	-0.024	-0.024	-0.023
	(-1.66)	(-1.84)	(-1.85)	(-0.72)	(-0.91)	(-0.71)	(-0.90)	(-0.90)	(-0.84)
Exchange rate volatility	-0.314**	-0.315**	-0.315**	-0.798**	-0.810**	-0.796**	-0.808**	-0.807**	-0.814**
	(-2.73)	(-2.73)	(-2.74)	(-2.91)	(-2.96)	(-2.90)	(-2.94)	(-2.94)	(-2.97)
Dummy variable for BITs						0.011	0.011	0.012	-0.028
						(0.18)	(0.19)	(0.20)	(-0.44)
Dummy variable for investment provisions			0.190***				0.456***		0.358***
			(5.36)				(4.83)		(3.41)
Index of investment provisions		0.014***			0.034***			0.034***	
		(5.24)			(4.76)			(4.76)	
Interaction between BIT and RTA									0.341*
									(2.16)
Number of obs.	9027	9027	9027	7258	7258	7258	7258	7258	7258
Adjusted R-squared	0.915	0.915	0.915						
Pseudo R-squared				0.684	0.684	0.684	0.684	0.684	0.684
Log likelihood				-14120.9	-14109.6	-14120.9	-14109.3	-14109.6	-14107.0

Notes: Time and country fixed effects are not reported. All trade regressions were run with robust standard errors under heteroskedastic conditions. Values of t-statistics are in parentheses. Values marked (***), (**), and (*) are significant at the 0.1%, 1% and 5% levels, respectively.

84. The estimates for the BIT dummy variable in the investment models are all insignificant. While this result is not out of line with the literature (see, for example, Hallward-Driemeier, 2003), this study departs from previous ones by testing the effects of RTAs and BITs concurrently. In part, the insignificance of the result could be due to the nature of the provisions. BITs focus on investment protection rather than investment liberalisation, and the empirical analysis presented in Table 13 (Annex IV) suggests that the category of provisions falling under the investment protection umbrella in Table 5 are not significantly associated with FDI flows.

85. The insignificance of the BIT variable could also be a function of coverage. RTAs with substantive investment provisions usually include provisions on services, including Mode 3 services trade. And new investment rules may matter more for services than for goods. The World Bank's (2005) recent study on regionalism notes that a majority of the remaining restrictions on investment may be found in services and natural resources, rather than in goods. As a result, RTAs that include liberalisation mechanisms in services may be the most effective at boosting FDI.

86. Interestingly, the RTA dummy variables behave very similarly in both the trade and investment models. When the dummy variable that indicates the existence of a RTA with substantive investment provisions is added to the trade and investment equations, the percentage of variation explained by the data stays about the same, but the RTA dummy variables are statistically significant with positive coefficients. Thus, one could say that in this sample, the entry into force of a RTA with substantive investment provisions is positively related to trade and net positive FDI flows. The coefficient is higher in the FDI model (0.456) than it is in the trade model (0.190), which is intuitive as one would expect that investment provisions more profoundly affect investment flows than trade flows.

87. Since a dummy variable cannot by itself be interpreted in percentage terms, we use the method of transformation suggested by Kennedy (1981)[17]. With this transformation, we estimate that the entry into force of a RTA with substantive investment provisions is associated with a 57.1% increase in FDI flows and a 20.8% increase in exports. To be sure, these estimates need to be treated with caution as dummy variables can also pick up some of the effect of other variables. But the sign and magnitude of these values tends to suggest that substantive investment provisions matter for both trade and investment, and that trade complements, more than it substitutes for, investment in the context of RTAs that contain substantive investment provisions.

88. In both the trade and investment models, the index of investment provisions variable was also positive and significant (0.014 and 0.034, respectively). These coefficients cannot be compared with those obtained for the dummy RTA index variables because the index has been transformed into a continuous variable that has been logged. The coefficient on the RTA index variable is also determined in some measure by the scale of the index (which takes values between 0 and 1), but this does not affect the significance of the results. The model with the investment index shows no change in the pseudo-r2 or log-likelihood statistics, providing some degree of comfort that the dummy variable in the previous regression is indeed capturing the impact of investment provisions. The estimates obtained using the more nuanced index approach suggest that agreements with relatively more investment provisions impact FDI flows more profoundly than agreements with fewer provisions.

89. The positive but modest relationship observed between the extensiveness of investment provisions and trade flows is in line with the literature. It indicates that trade and investment are complements rather than substitutes, reflecting more efficiency-seeking than market-seeking FDI. Not surprisingly, the investment index performs better in the investment model. The positive and higher coefficient indicates that RTAs with substantive investment provisions are likely associated with increases in FDI flows. Since the RTA index of investment provisions is a variable that ranks the different agreements, it is difficult to interpret the coefficient directly, and thus it is best to consider the sign and significance of the coefficient (positive and significant at the 0.1% level).

17 . Kennedy notes that the correct transformation of a dummy variable is given by the following formula: $\hat{g} = \exp(\hat{c} - \frac{1}{2}\hat{V}(\hat{c}))-1$, where $\hat{g}$ is the estimated coefficient of the dummy variable on the dependent variable (e.g., exports and FDI), $\hat{c}$ is the coefficient on the dummy variable and $\hat{V}$ is the variance of $\hat{c}$.

Box 2. Does the year of entry into force matter?

In the different regressions presented, the year of entry into force of the RTA determines the change in the value of the index (from zero to the value found in Table 2). But it is difficult to assess when a RTA with substantive investment provisions begins to impact investment and trade flows. Before the agreement enters into force, the publicity surrounding the negotiations and subsequent signature can influence investment decisions. However, it could also be the case that FDI and trade flows will profoundly change only in the years after the entry into force.

To study whether the year of entry into force is relevant in the analysis, we have run two alternative specifications. The first tests the effect of both the dummy RTA index and the RTA index of investment provisions variables using the signature date of the agreement rather than the date of entry into force. One can argue that investors view the date of signature as a sufficient commitment to policy change and thus begin to trade and invest more than they would have absent a RTA with substantive investment provisions. In the FDI model, the coefficients on both the dummy variable and the RTA index perform better (*i.e.*, higher and more significant coefficients) than when using the date of entry into force (see Table 14 in Annex IV). In the trade model, however, the coefficients are smaller, although still positive and significant.

The second alternative specification tests the impact of the dummy variable and the RTA index variable without taking into account the year of the agreement. In this scenario, the index takes the value of the RTA during all of the years available, even before the entry into force of the agreement. One can argue that, at least for those countries that are not simply extending provisions that they have already granted to others (*i.e.*, a genuine deepening), the actual commitment to policy change occurs in the years spent negotiating the agreement (that is, in the period prior to entry into force). In the FDI model, the coefficients on both the dummy variable and the RTA index variable are smaller, although still positive, and have smaller t-statistics (see Table 14 in Annex IV). In the trade model, the coefficients are about the same as those estimated in the models that use the date of entry into force.

In the investment context, the results suggest that the impact of a RTA with substantive investment provisions is a somewhat gradual process that is at least partly the result of investors anticipating policy change. In the trade context, the results indicate that the anticipation effect is less pronounced, perhaps in part because investment decisions require more of a long-term perspective than the decision to trade. In this way, one would only expect to see changes in the behaviour of traders when the agreement enters into force. Further, the results of the second alternative specification suggest that countries tend to sign RTAs with substantive investment provisions with countries with whom they already significantly trade with and invest in. However, this is not true in all cases, as agreements between large developed partners and relatively smaller partners demonstrate (*e.g.*, EC-Jordan).

90. In the third set of equations (*i.e.*, those in which the 24 RTAs are included as separate variables), the results for trade and investment creation and diversion are somewhat mixed (see Table 11 in Annex IV). Most of the individual RTA variables were not significant, and those that were showed a combination of positive and negative signs. For instance, when the three variables for a given RTA were significant in the trade model, the results generally show both trade creation – that is, a positive coefficient on the $\Sigma_{ij}RTA_{ij}$ variable – and trade diversion for both the reporter and partner countries – a negative coefficient on the $\Sigma_{i}RTA_{ij}$ and $\Sigma_{j}RTA_{ij}$ variables, respectively.

91. However, this pattern did not hold completely across the dataset. The results for the investment model are more ambiguous than those for the trade model, as most of the RTA-specific variables are not significant. Yet the coefficients that were significant were more often the reporter variable ($\Sigma_{i}RTA_{ij}$), which represents the reporter's investment with the rest of the world. (This could be because the dataset contains a disproportionate number of reporters from developed countries.) Interestingly, the coefficients for this variable tend to be positive, suggesting that investment agreements are also likely to increase investment flows from third countries (whereas investment diversion is often feared). The variable that represents investment creation ($\Sigma_{ij}RTA_{ij}$) between the two countries party to the RTA showed the expected positive sign when the coefficients were significant, and in fact the coefficient for the investment creation variable for Canada-Chile is 0.129, which is significant at the 1% level.

92. The inconclusiveness of the results for some individual RTAs reflects the fact that many agreements in the dataset have been in effect for a short period, and so even if data are available, only a few years of data would be relevant for this analysis. It could also be the case that agreements are not implemented in the same way, and are sometimes formed to foster foreign policy goals as well as for economic reasons. One should not expect all agreements with substantive investment to significantly alter FDI patterns since the decision to invest is made on economic grounds, and trade agreements play only a part of that determination.

IV. Case Studies

93. The index of investment provisions and the quantitative analysis provide insight into how investment provisions are incorporated in RTAs and how those provisions affect trade and investment flows. Another method of analysing investment provisions in trade agreements is to use a case study approach. This section presents two case studies – NAFTA and New Zealand-Singapore – to analyse investment provisions in RTAs from a different perspective. The purpose of the case studies is not to assess the quantitative relationship between the RTAs and trade and investment flows, but rather to take a more detailed look at the investment provisions.

1. The North American Free Trade Agreement

94. The North American Free Trade Agreement (NAFTA) is one of the most famous of all regional trade agreements. In 1991, Canada, Mexico and the United States began negotiating NAFTA, and the agreement entered into force on 1 January 1994. In one sense, NAFTA extended the provisions of the Canada-U.S. Free Trade Agreement to Mexico, but it also expanded the agreement by further liberalising many trade provisions and including new subject areas. NAFTA inspired passionate debate in all three member countries and, as a result, numerous scholars have studied its effects both on the three member countries as well as the rest of the world. This case study briefly analyses the investment provisions in NAFTA and presents evidence from the literature on the overall effect of NAFTA on trade and FDI flows.

(i) The investment provisions

95. One of Mexico's primary goals in negotiating NAFTA was to increase FDI (Esquivel and Tornell, 1997; World Bank, 2003). Since the United States and Canada also strongly encourage the facilitation and protection of investment, NAFTA contains a relatively comprehensive set of investment rules which are set out principally in Chapter 11. NAFTA's Chapter 11 covers investment in both goods and services (except financial services, which are covered in Chapter 14). This approach represents a marked departure from that used in the WTO, which treats trade in services, including Mode 3 commercial presence, as distinct from investment in goods.

96. The definition of investor and investment are key components of any agreement that contains investment rules and NAFTA's definition, while not the most comprehensive, is still widely acknowledged as far-reaching. NAFTA generally defines "investment" in broad terms – for example, enterprises and any associated equity securities and property such as real estate, among others, are covered. However, the agreement covers only certain types of portfolio investment (*e.g.,* some types of loans, debt securities and commercial contracts are not considered investments).

97. Chapter 11 provides for both national and MFN treatment for investors from all of the NAFTA signatories as well as investments made by investors from non-partner countries that are located within NAFTA territory. National and MFN treatment applies equally to both the pre- and post-establishment phases of an investment project, and Chapter 11 requires that NAFTA members provide the *better* of national or MFN treatment. For example, if one of the NAFTA parties provides more favourable treatment

to a third party through a different agreement, the other NAFTA members can benefit from this more favourable treatment through this clause. However, even given the relatively extensive liberalisation present in NAFTA, exceptions to national and MFN treatment can be found with respect to government procurement as well as in certain non-conforming measures at the national level. Other exceptions at the sub-federal levels of government – such as state or local governments – made prior to the entry into force are grandfathered into the agreement.

98. Countries also scheduled further restrictions and exceptions in individual schedules. The United States, for instance, scheduled exceptions in the telecommunications; nuclear energy; agricultural chemicals; mining; transportation and waster water sectors. Canada included exceptions and reservations in sensitive sectors such as uranium mining; fishing; oil; gas; automobile; business service industries; and air transportation. Canada also indicates that pursuant to the Investment Canada Act, non-Canadians are restricted in buying Canadian business under certain circumstances. In addition, Mexico scheduled reservations and exceptions in sectors such as oil; petrochemicals; electricity and nuclear power; telecommunications; transportation; automobile; postal services; fishing; professional services and mining[18]. Further, Mexico and Canada also established mechanisms to review proposed investment projects over a certain threshold value, but they have historically approved these projects.

99. Chapter 11 also states that NAFTA members must provide "fair and equitable" treatment, an important provision from a legal perspective because many disputes have hinged on the meaning of this rule. In fact, on 31 July 2001, the NAFTA partners issued a Note of Interpretation to Chapter 11 that defines more concretely the notions of "fair and equitable" treatment and "full protection and security" to mean treatment not above that afforded by the customary minimum standard of treatment prescribed by international law. The Note also indicates that none of the investment-related provisions in NAFTA should be construed to imply an obligation of confidentiality on the part of any party in any dispute brought under Chapter 11 arbitration.

100. Moreover, Chapter 11 bans various common types of performance requirements, such as import, export and domestic content targets as well as obligations to transfer technology, many of which go beyond the prohibitions found in TRIMs. For many of the performance requirements that are not prohibited, as well as for some other types of restrictions, such as ownership limitations, NAFTA provides for an incremental phasing out over a 10-year period. Chapter 11 also includes rules mandating the free transfer of funds among the NAFTA parties, as well as rules prohibiting expropriation of investments, except under circumstances in the public interest and on a non-discriminatory basis pursuant to due process of the law and adequate compensation.

101. Section B of NAFTA's Chapter 11 sets out the rules governing the resolution of investment-related disputes under the agreement. NAFTA was one of the first RTAs to provide for investor-state dispute resolution. Under these provisions, individual investors may bring a dispute under Chapter 11 first by consultations and negotiations and, if these talks fail, through arbitration under the ICSID Convention, NAFTA's Additional Facility Rules or the UNCITRAL Arbitration Rules. Articles 1121-1138 stipulate detailed rules governing the facets of investment-related dispute settlement under NAFTA. NAFTA also contains provisions for State-State dispute settlement.

18 . Other sectors in which Mexico scheduled limitations include construction; education services; retail establishments selling firearms and ammunition; maquiladoras; artificial explosives, fireworks, firearms, and cartridges; printing and editing and certain categories of land services.

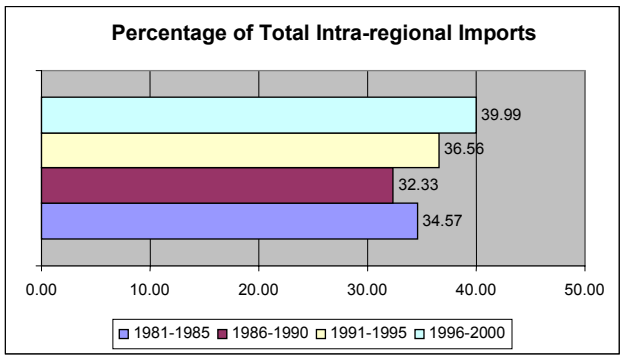
102. The Investor-State component of Chapter 11 has caused much controversy, especially in the United States and Canada. To date, 13 cases have been decided under NAFTA's Chapter 11[19], 9 of which were decided in favour of NAFTA member governments and 4 partially in favour of individual investors. In the cases won by individual investors, a much smaller sum was awarded than was initially petitioned (Brock, 2005).

103. While not included in Chapter 11, NAFTA's provisions on rules of origin (RoO) also affect the locational decisions of investors. The NAFTA RoOs differ across goods, and offer incentives for firms to establish investments or source inputs in the NAFTA region and, in particular, in Mexico (World Bank, 2003). Rules of origin apply in a vertical model of multi-processing manufacturing that are conducted in the same country or, if applicable, in a country party to the regional trade agreement. These rules can negatively affect prospective investors who must invest in manufacturing goods that are either unprofitable or in which the firm does not have a competitive advantage to comply with particular rules of origin (Inama, 2002).

(ii) Economic analysis

104. Scholars have studied the economic effects of NAFTA almost since its inception and, on balance, most studies have shown a modest positive effect. For instance, a study commissioned on NAFTA's 10-year anniversary finds that intra-NAFTA trade and FDI increased significantly after the entry into force of NAFTA (Economist, 2004). The import values in Figure 2 support this view, as do the results in the quantitative analysis presented in Section III, which show trade creation among the NAFTA parties. Research by Sen (2003) also finds that NAFTA appears to have contributed to an increase in goods trade among NAFTA members, but that it has had little or no impact on services trade. Sen suggests that the disappointing services numbers could stem from other regulatory barriers to services trade, which are often set at the sub-federal level (*e.g.,* standards established by professional bodies).

Figure 2. Imports in the NAFTA Region



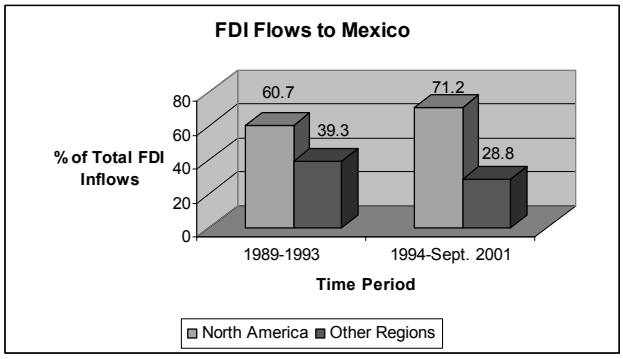
* *Source:* Adapted from World Bank (2003).

105. Most of the research surveyed shows no significant trade diversion on an aggregate level, although this result contrasts to the results obtained in the gravity model described in this paper (see, for instance, Krueger, 1999; Soloaga and Winters, 2001; Gould, 1998; World Bank, 2003). However, at a disaggregated level, some studies find trade diversion in the textile and apparel sector (see ITC, 1997; Fukao, Okubo and Stern, 2003).

19 . There are two cases of *Waste Management, Inc. v. United Mexican States* registered at ICSID; these cases are counted separately for purposes of this paragraph.

106. On a country level, many scholars have studied NAFTA's effects on Mexico in particular. Waldkirch (2003), for instance, uses a firm-level econometric model to study NAFTA's effects on FDI in Mexico during the period 1980-1998. He finds a clear positive effect of NAFTA on FDI in Mexico, and suggests that this positive effect has come almost exclusively from raising investment from Canada and the United States, rather than from other countries wishing to access the NAFTA market. He estimates that between 1994-1998, U.S. and Canadian FDI to Mexico would have been around 42% lower without NAFTA, a substantial figure given that Canada and the United States accounted for two-thirds of all FDI flows to Mexico during this time period. Waldkirch also suggests that vertical specialisation among firms may have contributed to the higher FDI flows to Mexico.

Figure 3. FDI in Mexico



* *Source:* Adapted from World Bank (2003).

107. The World Bank (2003) also uses econometric analysis to study the effects of NAFTA on FDI in Mexico. They use a 45-country sample during the period 1980-2000 to estimate the effect of a RTA variable on FDI flows in general, and then test how well the estimates fit the actual FDI data for Mexico (they achieve an 85% correlation). They then decompose the variables used in the general econometric model and use the coefficients to determine the share of Mexican FDI that can be attributed to NAFTA. While the authors note that the results need to be taken as illustrative, they estimate that on average, NAFTA increased FDI in Mexico by around 40% a year since 1994, which is very similar to the 42% estimate obtained by Waldkirch (2003). Further, the World Bank suggests that this figure likely underestimates the actual effect of NAFTA because the agreement is probably correlated with the openness variable present in their model.

108. The World Bank then uses a gravity model to test the effects of NAFTA on trade flows among the NAFTA partners. They estimate that without NAFTA, Mexican exports and imports would have been 25-30% and 50% lower, respectively (World Bank, 2003). Alternatively, Krueger (1999) uses a gravity model approach on trade data for the period 1987 to 1997 and finds that other factors, such as exchange rates movements and, in particular, Mexico's unilateral trade liberalisation, had a much more significant impact on trade flows in Mexico than NAFTA.

109. Krueger's research highlights how difficult it is to disentangle the effects of NAFTA with other changes in the domestic and global marketplace. The devaluation of the *peso* during the Mexican financial crisis, among other factors, such as strong growth in the United States, are also likely to have significantly contributed to higher trade flows in the post-NAFTA period. Moreover, Mexico significantly reformed its investment regulations in 1989, followed by further reviews of foreign investments in 1993 and 2001, which removed many barriers to foreign investment. These regulatory changes are likely to have had an important impact on investors.

2. The Agreement between New Zealand and Singapore on a Closer Economic Partnership

110. The importance given to investment in the Agreement between New Zealand and Singapore on a Closer Economic Partnership (ANZSCEP) is already visible in the preamble where "trade and investment" are closely associated and quoted together in the list of reasons that motivated the agreement. Defined as a "closer economic partnership", the agreement is fairly comprehensive and is a good example of "new regionalism" with provisions beyond trade liberalisation on topics such as investment. "Trade and investment" are mentioned five times in the preamble and three times in Article 1, which defines the objectives of the closer economic partnership.

(i) The investment provisions

111. Part 5 of the agreement sets the rules for investment in services. The supply of a service through commercial presence is included in the definition of trade in services (art. 16). Market access and national treatment are granted to sectors where specific commitments are made (art. 17 and 18). Following the GATS approach of a positive list with limitations on market access and national treatment, each party has a schedule of commitments (in Annex 2) listing the sectors where commitments are undertaken and limitations or conditions that apply. Part 5 has also GATS-like provisions on domestic regulation and professional qualifications. But contrary to the GATS, there is no MFN clause. However, the role of the MFN clause in a multilateral agreement such as the GATS differs from that found in many bilateral or regional agreements. The MFN clause in GATS ensures that all WTO members are treated equally. A bilateral MFN works differently by extending just to the bilateral partner any better treatment that is accorded to a non-party.

112. Looking at Annex 2, there is a difference in the way the two countries have listed their commitments in services. While Singapore's list is in the same format as a GATS schedule of commitments (with limitations according to the mode of supply with different columns for market access and national treatment), the New Zealand schedule innovates by adopting a "*sui generis* plain language approach". Horizontal limitations (that apply to all sectors) are first listed and then follows the list of sector-specific commitments, where a sentence will indicate the absence of limitations rather than the traditional "none" that can be found in a GATS schedule (which can be ambiguous). The objective of this "*sui generic* plain language" approach seems to be to facilitate the understanding of the schedule. For both countries the commitments in the ANZSCEP go beyond their GATS commitments.

113. In addition, the agreement foresees future liberalisation in services and provides for a review of the commitments at least every two years. The APEC objective of "free and open trade in services by 2010" is also clearly stated in article 20. The article even allows for a meeting to review the case of services sectors not fully liberalised by 2010 to find solutions beyond this date. It is clear that both New Zealand and Singapore crafted the services provisions with a liberalisation objective in mind.

114. It is in Part 6 of the agreement that the main provisions on investment can be found. Part 6 applies to all investments, including investment in services. However, art. 26 states that the definition of investment and provisions on MFN, national treatment and standard of treatment of Part 6 do not apply to the supply of services through commercial presence, as specific provisions for services are included in Part 5 described above. The provisions for non-services sectors are not limited to national treatment as in Part 5. Article 28 and 29 allow for, respectively, MFN and national treatment, both pre- and post-establishment. Investors can benefit from the better of MFN or national treatment as the standard of treatment (art. 30). The rest of the provisions contained in Part 6 apply to investment in services as well as in goods. It includes in particular a state-investor dispute settlement by conciliation or by ICSID arbitration.

115. Annex 3 of the agreement contains a list of limitations to MFN and national treatment. The limitations are related in the case of New Zealand to the acquisition of farm land, fishing quotas, the existence of marketing boards or state enterprises in some sectors (and also the Overseas Investment Regime – see below). In addition to the same kind of limitations related to land ownership or sectors with state enterprises, Singapore lists a few sectors in which domestic companies can have more favourable treatment (economic incentives) and requires companies from all sectors to employ a local manager. An important point is that these limitations apply also to investment in services (Mode 3). Annex 3 specifies that "Where a services sector is scheduled under Part 5, the terms, limitations, conditions and qualifications stated therein shall apply to investments in that sector." For investment in services, the investment chapter thus adds a negative list to the positive list of sectors liberalised[20]. As in the case of services, the parties agree to review at least every two years the status of their limitations on investment in a view to reducing or removing them.

116. An interesting example of a limitation to national treatment listed by New Zealand in Annex 3 is related to the Overseas Investment Regime. Above a certain threshold, any foreign investment has to be approved by New Zealand. The Overseas Investment Office (formerly called the Overseas Investment Commission) reviews investments under a criterion of "national interest". This restriction sheds light on the limitations of the index created in this study. As any agreement granting national treatment and MFN pre-establishment with a list of limitations, New Zealand-Singapore obtained 1.0 + 0.5 points in Columns 1 and 2 of Table 6. However, the index does not assess how limiting the restrictions described in the negative lists of the agreements are. The fact that any investment above a certain threshold has to be authorized by the New Zealand Overseas Investment Office could be an important limitation if this institution, for example, was very strict in its decisions or very protective of the New Zealand market. To improve the index, it could be suggested to apply a similar methodology to quantitatively assess to what extent the list of reservations is a barrier to FDI (it could be done in the present case by looking at the threshold that requires an authorisation). But the example of the New Zealand-Singapore agreement shows that this methodology would have not only to look at the provisions but also their implementation (the practice of the Overseas Investment Commission in this case). A much simpler and maybe stronger approach is to avoid any judgement on the content of the lists of reservations (or the positive lists of commitments) as it was done in Part I, with 0.5 points given to establishment with a positive or negative list of limitations.

117. In the case of New Zealand, the Overseas Investment Office does not seem to have a policy aimed at restricting investment. Only 3.7% of total applications were refused in 2004[21], none from Singapore and none related to non-land investment. The office has been instituted to protect sensitive land (like foreshore, seabed, beds or rivers and lakes) and fishing quotas. No non-land investment application has been declined in the past 20 years. Reports from other countries on the investment climate in New Zealand indicate that the authorisation from the Overseas Investment Office is not a major obstacle to

20 . It is interesting to note that agreements where investment in services is covered in a separate chapter on services and have in addition provisions on investment protection, are not agreements with two separate sets of investment rules for goods and services (another example of such an agreement is Thailand-Australia). The architecture adopted is that the investment chapter covers all investments. Only provisions on market access and national treatment, as well as provisions specific to trade in services (like domestic regulation and professional qualifications) are in the services chapter. Provisions on investment protection or state-investor dispute settlement, for example, are in the investment chapter, even when market access and national treatment for investment in services are dealt with in the services chapter. This can be understood as a consequence of the GATS approach taken in services. The GATS is an agreement on trade liberalisation; it has no provisions on investment protection or promotion.

21. Overseas Investment Commission (2005).

FDI[22]. Singapore has also restrictions regarding the foreign ownership of land, state enterprises and in certain sectors listed in Annex 3 of the RTA.

118. One benefit for Singapore in signing a trade and investment agreement with New Zealand is that by binding the investment regime the threshold requiring consent from New Zealand cannot be reduced. However, the threshold has been augmented following the reform of the foreign investment regime in New Zealand last year. The Overseas Investment Act of 2005 has increased the threshold for acquisition of non-land business assets from NZD 50 millions to 100 millions for all countries.

119. In the index of investment provisions presented in Part 1, the New Zealand-Singapore agreement obtained a score of 1.638. The agreement is among the most extensive in terms of investment liberalisation, with pre- and post-establishment national treatment for goods and services. The absence of a MFN clause in the services chapter is the reason why the agreement lies a little behind NAFTA. Provisions that are absent from the agreement are in the "investment regulation and protection" category. The New Zealand-Singapore RTA has no provisions prohibiting performance requirements[23], no temporary entry and stay for key personnel and no reference to "fair and equitable treatment". The other agreement signed by New Zealand in Tables 4 and 5, with Thailand, also lacks these three types of rules. However, these provisions can be found in more recent agreements signed by Singapore with other partners, for example in US-Singapore or Japan-Singapore.

(ii) Economic analysis

120. As a small but dynamic city-state economy building on free trade, Singapore has signed many RTAs inside and outside of Asia. Not only the number of agreements signed by Singapore is impressive, but also their scope is noticeable, as most of them include provisions on services and investment liberalisation. Investment seems to be a determining factor in Singapore's RTA strategy. It is not surprising as the economic success and rapid development of Singapore has been based on private foreign investment. Singapore and its small population may not offer an important market for foreign investors, but the country is seen as a hub to serve Asian economies. The country has excellent port infrastructure, and good financial and business services making it the "gateway to Asia". As a consequence, Singapore has attracted many investments and ranked fifth last year in UNCTAD's Inward FDI Potential Index. Outward investment is as important for a country with limited land and resources and Singapore outward FDI has increased in Asia (in particular in China).

121. Singapore is negotiating free trade agreements with countries with whom it has very limited trade flows, such as Jordan and Egypt (Reiter, 2004). The rationale for such RTAs could be in investment opportunities, not only from Singaporean firms, but more likely for subsidiaries of multinationals established in Singapore. This is also the case in the ANZSCEP. The New Zealand-Singapore bilateral trade and investment relationship is of a different nature than the other "North-South agreements" listed in Tables 4 and 5. While under the WTO definition we have classified Singapore as a "South country", the ANZSCEP sets rules for a real two-way investment relationship. Investment flows from the two countries are of the same range but FDI flows from Singapore to New Zealand tend to be higher, as seen in Figure 4, where there are only two years where the investment flows from New Zealand to Singapore are higher.

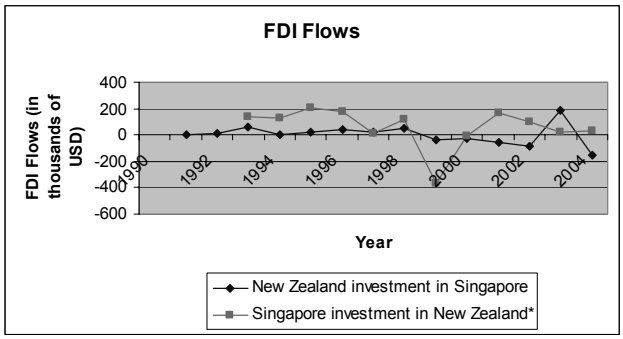
122. FDI flows show no major break after the signature or the entry in force of the ANZSCEP. As FDI determinants are various, Figure 4 cannot give a clear account of the impact of the RTA on investment

22. For example, "Doing Business in New Zealand: A Country Commercial Guide for US Companies", US & Foreign Commercial Service and US Department of State, 2006.

23 . The New Zealand-Singapore agreement thus relies on other international agreements, such as TRIMs, to circumscribe rules related to performance requirements.

flows, especially for a relatively recent agreement. Moreover, 2002-2004 was a period of world decline in FDI flows. The quantitative analysis presented in Part II includes variables and fixed effects that can isolate the impact of the RTA on FDI flows. Although not significant, the coefficient reported in Table 11 for New Zealand-Singapore (variable nzsin1) is positive and quite high. It suggests that the agreement has increased FDI flows but this result is not confirmed in the absence of significance of the coefficient. The two negative coefficients for nzsin2 and nzsin3 also hint at investment diversion. But again the coefficients are not significantly different from zero. As Singapore is likely to be a "hub" or a "platform" for New Zealand investments in Asia, investment diversion would be the expected outcome (negative nzsin2). New Zealand companies investing in Singapore can benefit from the broad network of trade agreements signed by Singapore and export (or invest) through their Singaporean subsidiaries.

Figure 4. FDI flows between New Zealand and Singapore (1991-2004)



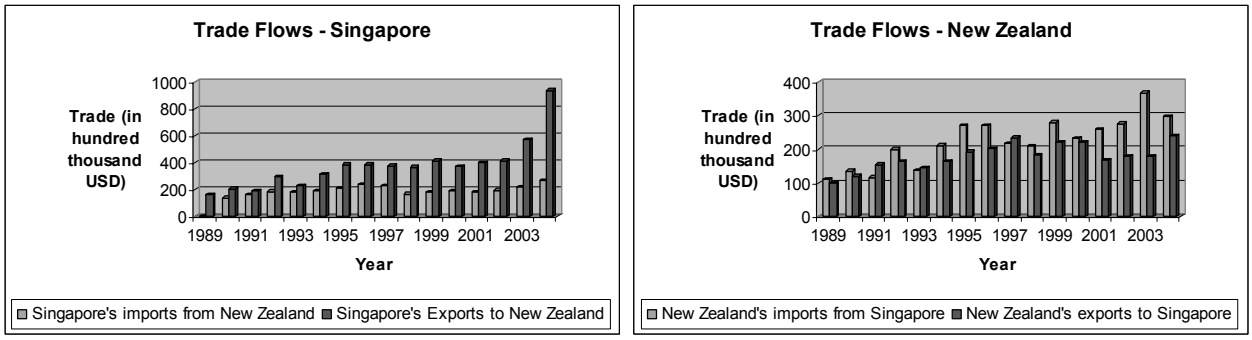
Source : UNCTAD (2005). Mirror data reported by New Zealand to UNCTAD.

123. While there is no significant impact of the ANZSCEP on investment flows between the two countries, it should be mentioned that the quantity of investment is not the only interesting variable. For New Zealand, investment in Singapore is also about productivity growth and technology enhancement. New Zealand has established in Singapore its first overseas technology centre in 2002. The mission of the New Zealand Technology Centre (NZTC) is to assist companies in commercialising their technologies and doing business internationally. It is another dimension of the "hubbing strategy" that would be reflected in a "qualitative" assessment of FDI flows rather than a quantitative study as proposed here.

124. Singapore's exports to New Zealand have notably increased since the entry into force of the trade agreement (Figure 5). Data are less conclusive for New Zealand's exports. In the econometric analysis of Part II, there is a significant result for the trade impact of the New Zealand-Singapore RTA. In Table 11, the agreement has a significant trade diverting impact. As investment from New Zealand to Singapore is likely to be of the efficiency-seeking type rather than market-seeking, this result is surprising. The RTA should create more trade between the two countries in the context of a "hubbing strategy" for New Zealand companies. It is as surprising for Singapore's exports to New Zealand, which have steadily increased as shown in Figure 5. The increase is explained by other determinants than the investment provisions of the RTA. As investment from Singapore in New Zealand is mainly in hotels, house construction, computer retailing and the leisure industry[24], a substitution between trade and investment is a possibility. But it would have to be confirmed by further analysis.

24. Investment New Zealand (2003).

Figure 5. Trade flows between New Zealand and Singapore



Source : COMTRADE.

125. The New Zealand-Singapore trade and investment relationship will take a new turn with the entry into force of the Trans-Pacific Strategic Economic Partnership in 2006. This agreement between four APEC members (Brunei, Chile, New Zealand and Singapore) builds on the ANZSCEP and solidifies the objectives of trade and investment liberalisation in the Asia-Pacific region formulated in the Bogor Declaration (1994). The agreement has an open accession clause and is based on APEC's Best Practices for FTAs/RTAs, which encourage countries to go beyond WTO commitments and to explore commitments in areas not covered by the WTO, such as investment.

126. However, the investment chapter of the Trans-Pacific SEP remains to be negotiated (the agreement foresees the beginning of the negotiation no later than two years after the date of entry into force). The agreement signed on 3 June 2005 only covers investment in services in the services chapter. This chapter confirms the ambition of building on the ANZSCEP and going beyond through a lock-in of the commitments between New Zealand and Singapore (now extended to Chile[25]) and a negative list approach instead of the positive list that was used in ANZSCEP. Exporters (and investors) are free to use either the provisions of the Trans-Pacific SEP or of the ANZSCEP (which remains in force). On services, the Trans-Pacific adds MFN treatment and additional national treatment commitments in sectors not scheduled in the ANZSCEP[26]. As a concrete example of the benefits of the MFN clause, service providers from New Zealand thus obtain the same commitments as those negotiated in the US-Singapore RTA that entered into force in 2004.

127. The Trans-Pacific SEP will offer to investors of New Zealand and Singapore new opportunities to further invest in the Pacific region, including through their respective subsidiaries. In that sense, the signature of the ANZSCEP before the entry into force of other RTAs in the Asia-Pacific region gives a specific role to the two countries as investment platforms.

V. Conclusion

128. Policymakers are increasingly thinking critically about the impact of the wide-ranging and comprehensive RTAs that are being created under the rubric of new regionalism. This paper presents the findings of work on the quantification of investment provisions in RTAs as a means to analysing their relationship with trade and investment flows. The paper classifies the investment provisions that countries have included in North-South RTAs, briefly reviews how other researchers have assessed the economic

25. The chapter does not apply to Brunei, which has two more years to finalise its commitments.

26. Tax-related services, contact lens practitioners, real estate, aircraft repair and maintenance services, selling and marketing of air transport services, specialty air services and a range of international and non-transportation air services.

consequences of investment provisions in RTAs and presents the findings of original empirical work that analyses the relationship between substantive investment provisions and trade and investment flows. Two case studies complement the quantitative work.

129. Several patterns emerge from the analysis of investment provisions in RTAs. In general, it is somewhat surprising that the average index score for North-South RTAs with substantive investment provisions was the highest, above the averages for both North-North and South-South RTAs. Yet the average index score for the South-South category was higher than one might think, with a difference of only 0.021 compared to the average score for North-South RTAs. It also appears that the approach used to incorporate investment provisions in North-South RTAs is a function of past experience as well as how far "new" countries are willing to go in following the model favoured by the Northern partner.

130. Among OECD countries, one observes differences in the extensiveness and purpose of investment provisions in agreements signed by North American countries, Japan, Australia and New Zealand in contrast to European economies (EC and EFTA countries). Agreements that include rules on establishment, non-discrimination for all kinds of investments (not only Mode 3 trade in services), investment regulation and protection, as well as State-Investor dispute settlement, are found more often in the first group. In addition, the case studies suggest that recent agreements signed by the first group of OECD countries were concluded with a firm goal of widely liberalising both trade and investment.

131. The agreements of the second group often limit provisions on investment to services, reiterating GATS commitments and foreseeing further liberalisation in the future. However, not all EC and EFTA agreements follow this pattern, such as EC-FYROM and EFTA-Singapore, which also have a high index score. This is at least partly due to the fact that many EC countries have concluded BITs with many of their RTA partners which may contain some of these provisions. In the case of EFTA, the agreement with Singapore represents a new generation of agreements with more liberal investment provisions, showing a convergence with the first group of OECD countries identified.

132. While other studies have analysed the increase in trade following the entry into force of a RTA, this paper focuses on the impact of investment provisions. The quantitative analysis suggests that investment provisions in RTAs are positively associated with both trade and investment flows. Moreover, the coefficients indicate that they matter more for FDI flows than for trade flows. This dual positive effect indicates that investment may be more efficiency-seeking than market-seeking, thus acting more as a complement to, rather than a substitute for, trade in the context of RTAs.

133. Further, the study incorporates a dummy variable that represents whether the country pairs are party to a BIT. This variable was included in all of the FDI models, and the coefficient was insignificant. This suggests that either the investment provisions in RTAs impact trade and FDI flows more profoundly, or that the combination of substantive investment provisions and provisions liberalising other parts of the economy work together to more significantly impact trade and investment flows. This result indicates that the impact of the same investment provisions may be different in a trade agreement relative to a BIT. However, the variable that assesses the interaction between the BIT and RTA index dummies shows a positive and significant coefficient, suggesting a complementary relationship between BITs and RTAs.

134. As illustrated by the case studies presented in Part IV, investment provisions in RTAs have appeared in very innovative agreements that have strongly influenced the evolution of regionalism. From an investment perspective, these RTAs tend to go beyond commitments in WTO agreements. In a trade context, the case studies show that the content of the schedules, where sectoral coverage is explicitly defined, represents the best way to compare the commitments in the RTAs relative to those made in the WTO. The case studies reinforce that all of the types of investment provisions included in the index matter

for trade and investment, a result also obtained in the regression analysis of the separate categories of provisions.

135. RTAs are complex agreements that coalesce with underlying economic and political conditions to impact the national, regional and global economy. The policy environment in which a RTA operates is a critical component to facilitating, or hindering, the positive effects that a RTA can have on an economy. Effective implementation also matters. Nonetheless, the results presented in this paper have important policy implications for countries at all levels of development. At its core, the results suggest that substantive investment provisions in RTAs matter for trade and, to an even greater extent, FDI flows. This is good news for developing countries, particularly since North-South agreements tend to include the most extensive investment provisions, and FDI can be an important stimulus for development.

REFERENCES

Adams, R., P. Dee, J. Gali and G. McGuire (2003), "The Trade and Investment Effects of Preferential Trading Arrangements – Old and New Evidence", Australian Productivity Commission Staff Working Paper, Canberra, May.

Aitken, N. (1973), "The Effect of EEC and EFT on European Trade: A Temporal Cross-Section Analysis", *American Economic Review*, Vol. 63, pp. 881-92.

Anderson, M. and M. Ferrantino (2004), "Monte Carlo Appraisals of Gravity Model Specifications", United States International Trade Commission (USITC) Office of Economic Working Paper No. 2004-05-A, USITC, Washington, DC, May.

Anderson, J. and E. van Wincoop (2004), "Trade Costs", *Journal of Economic Literature*, Vol. XLII, pp. 691-751.

Baldwin, R. (1997), "The Causes of Regionalism", *The World Economy*, Vol. 20, No. 7, pp. 865-888.

Baldwin, R. (2005), "The Euro's Trade Effects", paper presented at the ECB Workshop "What Effects is EMU Having on the Euro Area and its Member Countries?", Frankfurt, 16 June.

Baldwin, R. and D. Taglioni (2005), "Gravity for Dummies", mimeo.

Bezemer, D. and D.W. te Velde (2004), "Regional Integration and Foreign Direct Investment in Developing Countries", July, (http://www.odi.org.uk/iedg/Projects/ec_prep2.pdf).

Blomström, M. and A. Kokko (1997), "Regional Integration and Foreign Direct Investment", Working Paper Series in Economics and Finance No. 172, Stockholm School of Economics, May.

Blonigen, B. (2005), "A Review of the Empirical Literature on FDI Determinants", paper presented at the annual meeting of the Allied Social Science Association: Expanding the Frontiers of Economics, Philadelphia, PA, 7-9 January.

Brock, Cassels (2005), "NAFTA Disputes Grind Along", Hieros Gamos Legal Directories Communiqué, 5 April.

Cheng, I. and H. Wall (2005), " Controlling for Heterogeneity in Gravity Models of Trade and Integration", *Federal Reserve Bank of St. Louis Review*, Vol. 87 No. 1.

Crawford, J. A. and R. Fiorentino (2005), "The Changing Landscape of Regional Trade Agreements", WTO Discussion Paper No. 8, WTO, Geneva.

Duade, C. and E. Stein (2001), "Institutions, Integration and the Location of Foreign Direct Investment", in *New Horizons for Foreign Direct Investment*, OECD Global Forum on Foreign Direct Investment, OECD, Paris, pp. 101-128.

Duade, C., E. Stein and E. Levy Yeyati (2003), "The FTAA and the Location of FDI", Research Department Working Paper No. 492, Inter-American Development Bank, Washington, DC, July.

Dee, P. and J. Gali (2003), "The Trade and Investment Effects of Preferential Trading Arrangements", National Bureau of Economic Research (NBER) Working Paper No. 10160, NBER, Cambridge, MA.

Economist (2004), "Special Report: Ten Years of NAFTA", *The Economist* , 3 January, pp. 13-15.

Egger, P. (2005). "Alternative Techniques for Estimation of Cross-Section Gravity Models", *Review of International Economics*, Vol. 13, No. 5, pp. 881-891.

Egger, P. and M. Pfaffermayr (2004), "The Impact of Bilateral Investment Treaties on Foreign Direct Investment", *Journal of Comparative Economics*, Vol. 32.

Esquivel, G. and A. Tornell (1997), "The Political Economy of Mexico's Entry into NAFTA", in *Regionalism versus Multilateral Trade Arrangements*, eds. T. Ito and A. Krueger, University of Chicago Press, Chicago.

Ethier, W. (1998), "The New Regionalism", *The Economic Journal*, Vol. 108 (July), pp. 1149-1161.

Fahnbulleh, M. and D.W. te Velde (2003), "Investment Related Provisions in Regional Trade Agreements", Overseas Development Institute, London, October.

Francois, J., M. McQueen and G. Wignaraja (2005), "EU-Developing Country FTA's: Overview and Analysis", paper prepared for the United Nations Trade Taskforce on the Millennium Development Goals.

Frankel, J. and A. Rose (2002), "An Estimate of the Effect of Common Currencies on Trade and Income", *The Quarterly Journal of Economics*, Vol. 117, No. 2, pp. 437-466.

Fukao, K., T. Okubo and R. Stern (2003), "An Econometric Analysis of Trade Diversion under NAFTA", *North American Journal of Economics and Finance*, Vol. 14.

Ghosh, S. and S. Yamarik (2003), "Does Trade Creation Measure up? A Re-examination of the Effects of Regional Trading Arrangements", *Economics Letters*, Vol. 82, pp. 213-219.

Gilbert, J. and D. DeRosa (2006), "Estimates from Gravity and CGE Models", in *The Shape of a Swiss-US FTA*, eds. G. Hufbauer and R. Baldwin, Institute for International Economics, Washington, DC.

Gould, D. (1998), "Has NAFTA Changed North American Trade?", *Economic Review*, The Federal Reserve Bank of Dallas, 1st Quarter.

Hallward-Driemeier, M. (2003), "Do Bilateral Investment Treaties Attract FDI? Only a Bit…and They Could Bite", World Bank Policy Research Paper No. 3121, World Bank, Washington, DC.

Hinkle, L. and M. Schiff (2004), "Economic Partnership Agreements Between Sub-Saharan Africa and the EU: A Development Perspective", *The World Economy*, Vol. 27, No. 9, pp. 1321-1333.

Hoekman, B. (1995), "Assessing the General Agreement on Trade in Services", World Bank Discussion Paper No. 307.

Hoekman, B. and K. Saggi (1999), "Multilateral Disciplines for Investment-Related Policies?", paper presented at the conference Global Regionalism, Instituto Affari Internationali, Rome, 8-9 February 1999.

Inama, S. (2002), "Market Access for LDCs: Issues to be Addressed", *Journal of World Trade*, Vol. 36, No. 1.

International Trade Comission of the United States (1997), The Impact of the North American Free Trade Agreement on the U.S. Economy and Industries: A Three-Year Review, document 3045, USITC, Washington, DC.

International Monetary Fund (IMF) (2004), "Exchange Rate Volatility and Trade Flows – Some New Evidence", IMF, Washington, DC.

Jeon, B.N. and S. F. Stone (2000), "Foreign Direct Investment and Trade in the Asian-Pacific Region: Complementarity, Distance and Regional Economic Integration", *Journal of Economic Integration*, Vol. 15, No. 3, pp. 460-85.

Kennedy, P. (1981), "Estimation with Correctly Interpreted Dummy Variables in Semilogarithmic Equations", *The American Economic Review*, Vol. 71 No.4.

Krueger, A. (1999), "Trade Creation and Trade Diversion under NAFTA", NBER Working Paper No. 7429, December.

Lee, J., I. Park, and K. Shin (2004), "Proliferating Regional Trade Arrangements: Why and Whither?", October 2004, (http://ssrn.com/abstract=604101).

Markusen, J. and A. Veneables (1998), "Multinational Firms and the New Trade Theory", *Journal of International Economics*, Vol. 46, pp. 183-203.

Mátyás, L. (1997), "Proper Econometric Specification of the Gravity Model", *The World Economy*, Vol. 20, No.3.

OECD (2003), *Regionalism and the Multilateral Trading System*, OECD, Paris.

OECD (2005a), *International Investment Law: A Changing Landscape*, OECD, Paris.

OECD (2005b), *International Investment Perspectives 2005*, OECD, Paris.

OECD (2005c), "South-South Trade in Goods: A Gravity Model Approach", TD/TC/WP(2005)34.

OECD (2006), "Overview and Novel Features in OECD Recent Investment Agreements", DAF/INV/WD(2005)10/REV1.

Reiter, J. (2004), "Investment in RTAs", draft presented at a London School of Economics workshop on the interaction between regional and multilateral rulemaking, Brussels, 6 December.

Robert, M. (2001), *Multilateral and Regional Investment Rules: What Comes Next?*, Organisation of American States (OAS), Washington, DC.

Rose, A. (1999), "One Money, One Market: Estimating the Effect of Common Currencies on Trade", NBER Working Paper No. 7432, December.

Santos Silva, J. and S. Tenreyro (2005), "The Log of Gravity", Centre for Economic Performance (CEP) Discussion Paper No. 701, July.

Santos Silva, J. and S. Tenreyro (2003), "Gravity-Defying Trade", mimeo.

Sen, J. (2003), "The North American Free Trade Agreement", in *Regionalism, Multilateralism and Economic Integration: The Recent Experience*, eds. G. Sampson and S. Woolcock, United Nations University Press, Hong Kong.

Soloaga, I. and L.A. Winters (1999), "How Has Regionalism in the 1990s Affected Trade?", World Bank Policy Research Working Paper No. 2156, World Bank, Washington, DC.

Soloaga, I. and L.A. Winters (2001), "Regionalism in the Nineties: What Effect on Trade?", *North American Journal of Finance and Economics*, Vol. 12, No.1.

UNCTAD (United Nations Conference on Trade and Development) (1998), *Bilateral Investment Treaties in the Mid-1990s*, United Nations, New York and Geneva.

UNCTAD (2004a), *International Investment Agreements: Key Issues*, Vols. 1 & 2, UNCTAD Series on Issues on International Investment Agreements, United Nations, New York and Geneva.

UNCTAD (2004b), *The REIO Exception in MFN Treatment Clauses*, UNCTAD Series on International Investment Policies for Development, United Nations, New York and Geneva.

UNCTAD (2004c), *World Investment Report 2004: The Shift Towards Services*, United Nations, New York and Geneva.

UNCTAD (2005), "Recent Developments in International Investment Agreements", UNCTAD Research Note, Geneva, UNCTAD/WEB/ITE/IIT/2005/1.

Waldkirch, A. (2003), "The 'New Regionalism' and Foreign Direct Investment: The Case of Mexico", *Journal of International Trade & Economic Development*, Vol. 12, pp. 151-184.

Westerlund, J., and F. Wilhelmsson (2006), "Estimating the Gravity Model without Gravity Using Panel Data", mimeo.

World Bank (2003), "Lessons from NAFTA for Latin America and the Caribbean Countries: A Summary of Research Findings", World Bank, Washington, DC, December.

World Bank (2005), *Global Economic Prospects: Trade, Regionalism and Development*, World Bank, Washington, DC.

ANNEX I – Matrix of investment-related provisions

Table 4. Matrix of investment-related provisions in North-South RTAs (Part 1 – Columns 1 to 13)

Agreement	Date of entry into force	Establishment (non-services sectors)		Non-discrimination (non-services sectors)				Investment in services sectors						
		Right of establishment?	Pre-establishment limitations	National treatment?	Limitations to national treatment	Most Favoured Nation?	Exceptions to MFN?	Investment in services covered by the RTA?	Provisions on establishment	Pre-establishment limitations in services	National treatment?	Limitations to national treatment in services	MFN?	Exceptions to MFN?
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
PATCRA	1-Feb-77	No	-	No	-	Yes (4)	-	No	-	-	-	-	-	-
NAFTA	1-Jan-94	MFN+NT	Negative list	Yes	Negative list	Yes	Negative list	Investment section	MFN+NT	Negative list	Yes	Negative list	Yes	Negative list
Canada — Chile	5-Jul-97	MFN+NT	Negative list	Yes	Negative list	Yes	Negative list	Investment section	MFN+NT	Negative list	Yes	Negative list	Yes	Negative list
EC — Tunisia	1-Mar-98	No	-	No	-	No	-	Services section	GATS	GATS	GATS	GATS	GATS	GATS
EC — South Africa	1-Jan-00	No	-	No	-	No	-	Services section	GATS	GATS	GATS	GATS	GATS	GATS
EC — Morocco	1-Mar-00	No	-	No	-	No	-	Services section	GATS	GATS	GATS	GATS	GATS	GATS
EC — Israel	1-Jun-00	No	-	No	-	No	-	Services section	GATS	GATS	GATS	GATS	GATS	GATS
EC — Mexico	1-Jul-00	No	-	OECD	-	No	-	Services section	Market access	Positive list (3)	Yes	Positive list (3)	Yes	None
New Zealand - Singapore	1-Jan-01	MFN+NT	Negative list	Yes	Negative List	Yes	Negative list	Services section	Market access	Positive List	Yes	Positive List	No	-
EC — FYROM	1-Jun-01	MFN+NT	None (2)	Yes	None	Yes	None	Investment section	MFN+NT	None (2)	Yes	None	Yes	None
EFTA - Mexico	1-Jul-01	No	-	OECD	-	No	-	Services section	Market access (3)	Positive list (3)	Yes (3)	Positive list (3)	Yes	None
United States — Jordan	17-Dec-01	No	-	No	-	No	-	Services section	Market access	Positive list	Yes	Positive list	Yes	GATS
EC — Jordan	1-May-02	MFN+(NT) (4)	(Negative list) (4)	Yes	Negative list	(Yes) (4)	(Negative list) (4)	Investment section	MFN+(NT) (4)	(Negative list) (4)	Yes	Negative list	(Yes) (4)	(Negative list) (4)
Japan - Singapore	30-Nov-02	NT	Negative list	Yes	Negative list	No	-	Services section	Market access	Positive List	Yes	Positive list	No	-
EFTA - Singapore	1-Jan-03	MFN+NT	Negative list	Yes	Negative list	Yes	Negative list	Services section	Market access	Positive list	Yes	Positive list	Yes	GATS
EC - Chile	1-Feb-03	NT	Positive list	No	-	No	-	Services section	Market access	Positive list	Yes	Positive list	No	-
Singapore - Australia	28-Jul-03	NT	Negative list	Yes	Negative list	No	-	Services section	Market access	Negative list	Yes	Negative list	No	-
United States - Singapore	1-Jan-04	MFN+NT	Negative list	Yes	Negative List	Yes	Negative list	Investment section	MFN+NT	Negative list	Yes	Negative list	Yes	Negative list
United States — Chile	1-Jan-04	MFN+NT	Negative list	Yes	Negative list	Yes	Negative list	Investment section	MFN+NT	Negative list	Yes	Negative list	Yes	Negative list
EC - Egypt	1-Jun-04	No	-	No	-	No	-	Services section	GATS	GATS	GATS	GATS	GATS	GATS
EFTA - Chile	1-Dec-04	NT	Negative list	No	-	No	-	Services section	Market access	Positive list	Yes	Positive list	GATS	GATS
Thailand - Australia	1-Jan-05	NT	Positive list	Yes	Positive list	Yes	None	Services section	Market access	Positive list	Yes	Positive list	No	-
Mexico-Japan	1-Apr-05	MFN + NT	Negative list	Yes	Negative List	Yes	Negative list	Investment section	MFN + NT	Negative list	Yes	Negative List	Yes	Negative List
Thailand - New Zealand	1-Jul-05	(NT) (4)	(Postive list) (4)	Yes	Negative list	Yes	None	Services section	GATS	GATS	GATS	GATS	GATS	GATS

(1) Only services; (2) Some services sectors excluded or treated in a separate section; (3) Future action proposed; (4) Asymetric treatment

Table 5. Matrix of investment-related provisions in North-South RTAs (Part 2 – Columns 14 to 27)

Agreement	Investment regulation and protection							Dispute settlement		Investment promotion and cooperation				
	Provisions prohibiting performance requirements?	Prohibition on performance requirements beyond TRIMs?	Specific provision prohibiting ownership requirements?	Free transfer of funds?	Temporary entry and stay for key personnel?	Provisions on expropriation?	Specific reference to fair and equitable treatment	State-state dispute settlement?	State-investor dispute settlement?	Investment promotion?	Cooperation mechanisms?	Harmonization of rules?	Any Type of Assymetries?	Clause foreseeing the future liberalization of investment?
	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
PATCRA	No	-	No	No	No	No	No	Consultation	No	Yes (4)	Yes	No	Yes	Yes
NAFTA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Ad hoc	Ad hoc & perm. arb.	No	No	No	No	No
Canada — Chile	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Ad hoc	Ad hoc & perm. arb.	No	No	No	No	Yes
EC — Tunisia	No	-	No	Yes	No	No	No	Political & ad hoc	No	Yes	Yes	Yes	No	Yes
EC — South Africa	No	-	No	Yes	No	No	No	Political & ad hoc	No	Yes	Yes	Yes	No	Yes
EC — Morocco	No	-	No	Yes	No	No	No	Political & ad hoc	No	Yes	Yes	Yes	No	Yes
EC — Israel	No	-	No	Yes	No	No	No	Political & ad hoc	No	Yes	No	Yes	No	Yes (1)
EC — Mexico	No	-	No	Yes	No	No	No	Ad hoc	No	Yes	Yes	Yes	No	Yes
New Zealand - Singapore	No	-	Yes (1)	Yes	No	Yes	No	Ad hoc	Perm. arb.	No	No	No	No	Yes (1)
EC — FYROM	No	-	No	Yes	Yes	No	No	Political	No	Yes	Yes	Yes	No	No
EFTA - Mexico	No	-	Yes (1) (3)	Yes	No	No	No	Ad hoc	No	Yes	Yes	Yes	No	Yes
United States — Jordan	No	-	No	No	Yes (1)	No	No	Ad hoc	No	No	No	No	No	No
EC — Jordan	No	-	No	Yes	Yes	No	No	Political & ad hoc	No	Yes	Yes	Yes	Yes	No
Japan - Singapore	Yes	Yes	No	Yes	Yes	Yes	Yes	Ad hoc	Ad hoc & perm. arb.	Yes	Yes	No	No	No
EFTA - Singapore	No	-	No	Yes	Yes	Yes	Yes	Ad hoc	Ad hoc & perm. arb.	No	No	No	No	No
EC - Chile	Yes	No	Yes (1)	Yes	No	No	No	Ad hoc	No	Yes	Yes	Yes	No	Yes
Singapore - Australia	No	-	Yes(1)	Yes	Yes	Yes	No	Ad hoc	Ad hoc & perm. arb.	No	No	No	No	No
United States - Singapore	Yes	Yes	No	Yes	Yes	Yes	Yes	Ad hoc	Ad hoc & perm. arb.	No	No	No	No	No
United States — Chile	Yes	Yes	No	Yes	Yes	Yes	Yes	Ad hoc	Ad hoc & perm. arb.	No	No	No	No	No
EC - Egypt	No	-	No	Yes	No	No	No	Political & ad hoc	No	Yes	Yes	No	No	Yes
EFTA - Chile	No	-	Yes (1)	Yes	No	No	No	Permanent political	No	No	No	No	No	Yes
Thailand - Australia	No	-	No	Yes	Yes	Yes	Yes	Ad hoc	Ad hoc	Yes	Yes(1)	No	No	Yes
Mexico-Japan	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Ad hoc	Ad hoc & perm. arb.	Yes	Yes	No	No	No
Thailand - New Zealand	No	-	No	Yes	No	Yes	No	Ad hoc	Ad hoc & perm. arb.	Yes	No	No	No	Yes (1)

(1) Only services; (2) Some services sectors excluded or treated in a separate section; (3) Future action proposed; (4) Asymetric treatment

Table 6. Encoded matrix of investment-related provisions (Part 1)

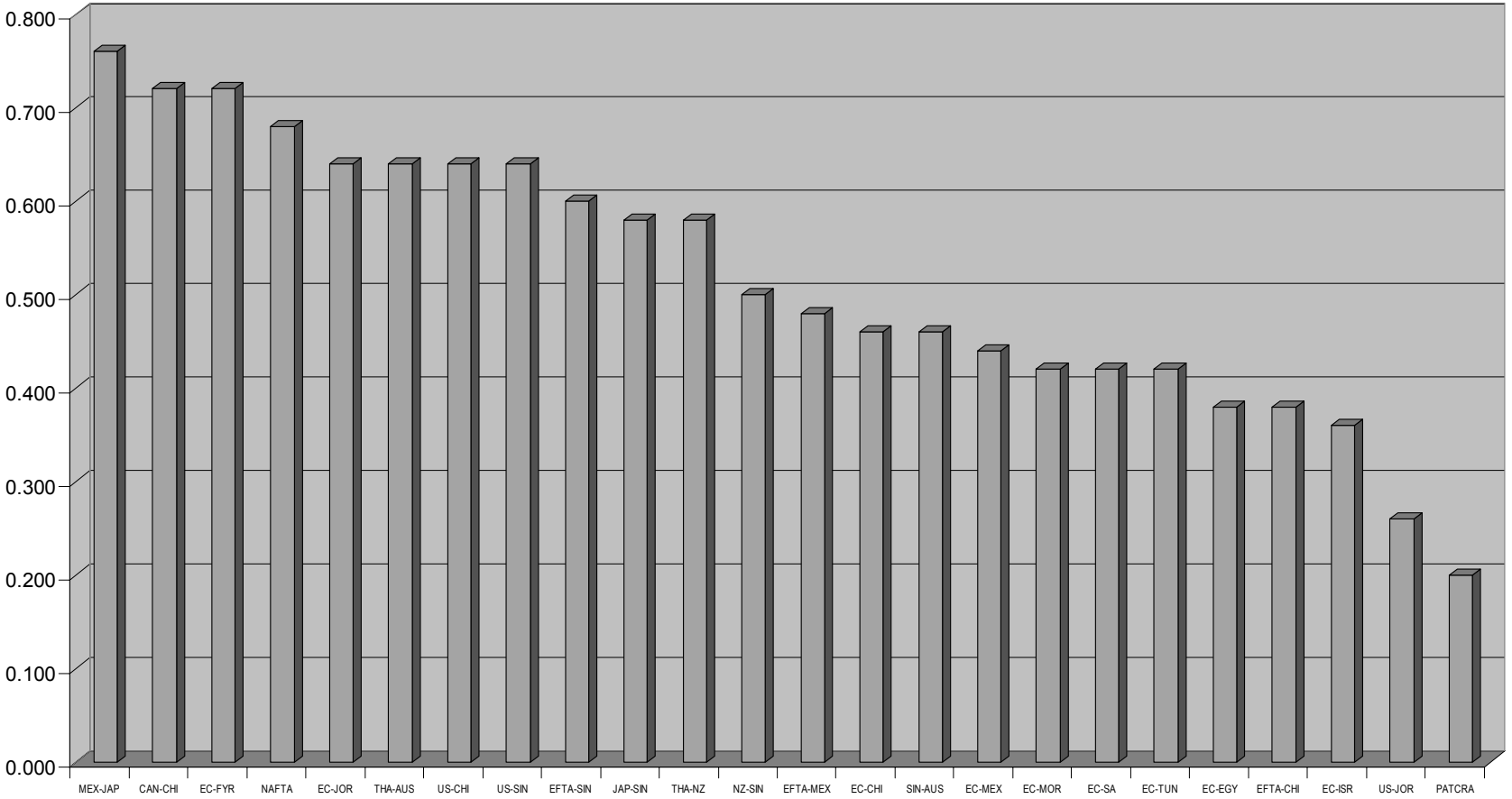
Agreement	Date of entry into force	Establishment (non-services sectors)		Non-discrimination (non-services sectors)				Investment in services sectors						
		Right of establishment?	Pre-establishment limitations	National treatment?	Limitations to national treatment	Most Favoured Nation?	Exceptions to MFN?	Investment in services covered by the RTA?	Provisions on establishment	Pre-establishment limitations in services	National treatment?	Limitations to national treatment in services	MFN?	Exceptions to MFN?
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
PATCRA	1-Feb-77	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NAFTA	1-Jan-94	1.00	0.50	1.00	0.50	1.00	0.50	1.00	1.00	0.50	1.00	0.50	1.00	0.50
Canada — Chile	5-Jul-97	1.00	0.50	1.00	0.50	1.00	0.50	1.00	1.00	0.50	1.00	0.50	1.00	0.50
EC — Tunisia	1-Mar-98	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.50	1.00	0.50	1.00	0.50
EC — South Africa	1-Jan-00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.50	1.00	0.50	1.00	0.50
EC — Morocco	1-Mar-00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.50	1.00	0.50	1.00	0.50
EC — Israel	1-Jun-00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.50	1.00	0.50	1.00	0.50
EC — Mexico	1-Jul-00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.50	1.00	0.50	1.00	1.00
New Zealand - Singapore	1-Jan-01	1.00	0.50	1.00	0.50	1.00	0.50	1.00	1.00	0.50	1.00	0.50	0.00	0.00
EC — FYROM	1-Jun-01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EFTA - Mexico	1-Jul-01	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.50	1.00	0.50	1.00	1.00
United States — Jordan	17-Dec-01	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.50	1.00	0.50	1.00	0.50
EC — Jordan	1-May-02	1.00	0.50	1.00	0.50	1.00	0.50	1.00	1.00	0.50	1.00	0.50	1.00	0.50
Japan - Singapore	30-Nov-02	0.50	0.50	1.00	0.50	0.00	0.00	1.00	1.00	0.50	1.00	0.50	0.00	0.00
EFTA - Singapore	1-Jan-03	1.00	0.50	1.00	0.50	1.00	0.50	1.00	1.00	0.50	1.00	0.50	1.00	0.50
EC - Chile	1-Feb-03	0.50	0.50	0.00	0.00	0.00	0.00	1.00	1.00	0.50	1.00	0.50	0.00	0.00
Singapore - Australia	28-Jul-03	0.50	0.50	1.00	0.50	0.00	0.00	1.00	1.00	0.50	1.00	0.50	0.00	0.00
United States - Singapore	1-Jan-04	1.00	0.50	1.00	0.50	1.00	0.50	1.00	1.00	0.50	1.00	0.50	1.00	0.50
United States — Chile	1-Jan-04	1.00	0.50	1.00	0.50	1.00	0.50	1.00	1.00	0.50	1.00	0.50	1.00	0.50
EC - Egypt	1-Jun-04	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.50	1.00	0.50	1.00	0.50
EFTA - Chile	1-Dec-04	0.50	0.50	0.00	0.00	0.00	0.00	1.00	1.00	0.50	1.00	0.50	1.00	0.50
Thailand - Australia	1-Jan-05	0.50	0.50	1.00	0.50	1.00	1.00	1.00	1.00	0.50	1.00	0.50	0.00	0.00
Mexico-Japan	1-Apr-05	1.00	0.50	1.00	0.50	1.00	0.50	1.00	1.00	0.50	1.00	0.50	1.00	0.50
Thailand - New Zealand	1-Jul-05	0.50	0.50	1.00	0.50	1.00	1.00	1.00	1.00	0.50	1.00	0.50	1.00	0.50

Table 7. Encoded matrix of investment-related provisions (Part 2)

Agreement	Investment regulation and protection						Dispute settlement	Investment promotion and cooperation				
	Provisions prohibiting performance requirements?	Specific provision prohibiting ownership requirements?	Free transfer of funds?	Temporary entry and stay for key personnel?	Provisions on expropriation?	Specific reference to fair and equitable treatment	State-investor dispute settlement?	Investment promotion?	Cooperation mechanisms?	Harmonization of rules?	Any Type of Assymetries?	Clause foreseeing the future liberalization of investment?
	(14)	(16)	(17)	(18)	(19)	(20)	(22)	(23)	(24)	(25)	(26)	(27)
PATCRA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00
NAFTA	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
EC — Bulgaria	0.50	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
EC — Romania	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Canada — Chile	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
EC — Tunisia	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00
EC — South Africa	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00
EC — Morocco	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00
EC — Israel	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.50
EC — Mexico	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00
New Zealand - Singapore	0.00	1.00	1.00	0.00	1.00	0.00	0.50	0.00	0.00	0.00	0.00	0.50
EC — FYROM	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00
EFTA - Mexico	0.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00
United States — Jordan	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EC — Jordan	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Japan - Singapore	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
EFTA - Singapore	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
EC - Chile	0.50	1.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00
Singapore - Australia	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
United States - Singapore	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
United States — Chile	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
EC - Egypt	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
EFTA - Chile	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Thailand - Australia	0.00	0.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00	0.00	0.00	1.00
Mexico-Japan	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Thailand - New Zealand	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.50

(1) Only services; (2) Some services sectors excluded or treated in a separate section; (3) Future action proposed; (4) Asymetric treatment

Figure 6. Index of investment provisions in 24 North-South RTAs



ANNEX II – Countries in the dataset

Afghanistan	Côte d'Ivoire	Lebanon	Samoa
Albania	**Denmark**	Lesotho	San Marino
Algeria	Djibouti	Liberia	Saudi Arabia
Angola	Dominica	Libyan Arab Jamahiriya	Senegal
Antigua and Barbuda	Dominican Republic	**Lithuania**	Seychelles
Argentina	Ecuador	Luxembourg	Sierra Leone
Armenia	**Egypt**	Macedonia (the former Yugoslav Rep. of)	**Singapore**
Aruba	El Salvador	Madagascar	Slovakia
Australia	Equatorial Guinea	Malawi	Slovenia
Austria	**Estonia**	**Malaysia**	Solomon Islands
Azerbaijan	Ethiopia	Maldives	Somalia
Bahamas	Fiji	Mali	**South Africa**
Bahrain	**Finland**	Malta	**Spain**
Bangladesh	**France**	Marshall Islands	Sri Lanka
Barbados	French Polynesia	Mauritania	Sudan
Belarus	Gabon	**Mauritius**	Suriname
Belgium and Luxembourg	Gambia	**Mexico**	Swaziland
Belize	Georgia	Mongolia	**Sweden**
Benin	**Germany**	**Morocco**	**Switzerland**
Bermuda	Ghana	Mozambique	Syrian Arab Republic
Bhutan	Greece	**Namibia**	Tajikistan
Bolivia	Grenada	Nepal	Tanzania, United Rep. of
Bosnia and Herzegovina	Guatemala	**Netherlands**	**Thailand**
Botswana	Guinea	**New Zealand**	Togo
Brazil	Guinea-Bissau	Nicaragua	Tonga
Bulgaria	Guyana	Niger	Trinidad and Tobago
Burkina Faso	Haiti	**Nigeria**	**Tunisia**
Burundi	Honduras	**Norway**	Turkey
Cambodia	**Hong Kong**	Oman	Turkmenistan
Cameroon	**Hungary**	**Pakistan**	Uganda
Canada	**Iceland**	Palau	Ukraine
Cape Verde	India	Panama	United Arab Emirates
Cayman Islands	Indonesia	**Papua New Guinea**	**United Kingdom**
Central African Republic	Iran	Paraguay	**United States of America**
Chad	Iraq	Peru	Uruguay
Chile	**Ireland**	**Philippines**	Uzbekistan
China	**Israel**	**Poland**	Vanuatu
Chinese Taipei	**Italy**	**Portugal**	Venezuela
Colombia	Jamaica	Puerto Rico	Viet Nam
Comoros	**Japan**	Qatar	Yemen
Congo	**Jordan**	**Romania**	Zambia
Costa Rica	Kenya	Russian Federation	Zimbabwe
Croatia	Kuwait	Rwanda	
Cyprus	Lao People's Democratic Republic	Saint Lucia	
Czech Republic	Latvia	Saint Vincent and the Grenadines	

Note: All countries are partner countries; countries in bold are both reporter and partner.

ANNEX III – North-North and South-South RTAs with investment provisions

Table 8. Encoded matrix of investment-related provisions in North-North and South-South RTAs (Part 1)

Agreement	Date of entry into force	Establishment (non-services sectors)		Non-discrimination (non-services sectors)				Investment in services sectors						
		Right of establishment?	Pre-establishment limitations	National treatment?	Limitations to national treatment	Most Favoured Nation?	Exceptions to MFN?	Investment in services covered by the RTA?	Provisions on establishment	Pre-establishment limitations in services	National treatment?	Limitations to national treatment in services	MFN?	Exceptions to MFN?
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
North-North														
EC (Treaty of Rome)	1958	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Australia - New Zealand	1989	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.50	1.00	0.50	1.00	0.50
EEA	1994	1.00	0.50	1.00	0.50	1.00	1.00	1.00	1.00	0.50	1.00	0.50	1.00	1.00
EC — Bulgaria	1995	0.50	0.50	1.00	0.50	0.00	0.00	1.00	0.50	0.50	1.00	0.50	0.00	0.00
EC — Romania	1995	0.50	0.50	1.00	0.50	0.00	0.00	1.00	0.50	0.50	1.00	0.50	0.00	0.00
EFTA (2002)	2002	1.00	0.50	1.00	0.50	1.00	1.00	1.00	1.00	0.50	1.00	0.50	1.00	1.00
US - Australia	2005	1.00	0.50	1.00	0.50	1.00	0.50	1.00	1.00	0.50	1.00	0.50	1.00	0.50
South-South														
CARICOM	1973 /97 /01	0.50	0.50	1.00	0.50	0.00	0.00	1.00	0.50	0.50	1.00	0.50	0.00	0.00
Gulf Cooperation Council	1981	0.00	0.50	0.00	0.00	0.00	0.00	1.00	1.00	0.50	1.00	0.50	1.00	0.50
CEEAC (ECCAS)	1985	1.00	0.50	1.00	1.00	1.00	1.00	1.00	1.00	0.50	1.00	0.50	1.00	0.50
Andean Community	1988 /98	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.50	1.00	0.50
MERCOSUR	1991	0.00	0.00	1.00	0.50	1.00	0.50	1.00	0.00	0.00	1.00	0.50	1.00	0.50
CEDEAO (ECOWAS)	1990	0.00	0.00	1.00	0.50	1.00	0.50	1.00	0.00	0.00	1.00	0.50	1.00	0.50
ASEAN	1992 /95 /98	0.00	0.00	1.00	0.50	1.00	0.50	1.00	1.00	0.50	1.00	0.50	1.00	0.50
Bolivia - Chile	1993	0.00	0.00	1.00	0.50	1.00	0.50	1.00	0.00	0.00	1.00	0.50	1.00	0.50
COMESA	1994	0.00	0.00	1.00	0.50	1.00	0.50	1.00	0.00	0.00	1.00	0.50	1.00	0.50
Mexico - Columbia - Venezuela	1995	0.00	0.00	1.00	0.50	1.00	0.50	1.00	0.00	0.00	1.00	0.50	1.00	0.50
Mexico - Bolivia	1995	0.00	0.00	1.00	0.50	1.00	0.50	1.00	0.00	0.00	1.00	0.50	1.00	0.50
Mexico - Costa Rica	1995	1.00	0.50	1.00	0.50	1.00	0.50	1.00	1.00	0.50	1.00	0.50	1.00	0.50
Mexico - Nicaragua	1998	1.00	0.50	1.00	0.50	1.00	0.50	1.00	1.00	0.50	1.00	0.50	1.00	0.50
CARICOM - Dominican Republic	1999	1.00	0.50	1.00	0.50	1.00	0.50	1.00	1.00	0.50	1.00	0.50	1.00	0.50
Chile - Mexico	1999	1.00	0.50	1.00	0.50	1.00	0.50	1.00	1.00	0.50	1.00	0.50	1.00	0.50
CEMAC (UEAC)	1999	1.00	0.50	1.00	0.50	1.00	0.50	1.00	1.00	0.50	1.00	0.50	1.00	0.50
UEMOA (WAEMU)	2000	0.50	0.50	1.00	0.50	1.00	0.50	1.00	0.50	0.50	1.00	0.50	1.00	0.50
Mexico - Northern Triangle	2001	0.00	0.00	1.00	0.50	1.00	0.50	1.00	1.00	0.50	1.00	0.50	1.00	0.50
Central America - Dominican Republic	2002	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.50	1.00	0.50	0.00	0.00
CARICOM - Cuba	2002	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.50	1.00	0.50	0.00	0.00
Panama - El Salvador	2003	0.50	0.50	1.00	0.50	0.00	0.00	1.00	1.00	0.50	1.00	0.50	0.00	0.00
Mexico - Uruguay	2004	0.50	1.00	1.00	1.00	0.00	0.00	1.00	0.50	1.00	1.00	1.00	0.00	0.00
Chinese Taipei - Panama	2004	0.00	0.50	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Republic of Korea - Chile	2004	0.50	1.00	0.00	0.00	0.00	0.00	1.00	0.50	0.00	0.00	0.00	0.00	0.00
China - Macao, China	2004	0.50	1.00	1.00	1.00	0.00	0.00	1.00	0.50	1.00	1.00	1.00	0.00	0.00
China - Hong Kong, China	2004	0.50	1.00	1.00	1.00	0.00	0.00	1.00	0.50	1.00	1.00	1.00	0.00	0.00
Singapore - India	2005	0.00	0.50	1.00	0.50	0.00	0.00	1.00	0.00	0.50	1.00	0.50	0.00	0.00

Table 9. Encoded matrix of investment-related provisions in North-North and South-South RTAs (Part 2)

Agreement	Investment regulation and protection						Dispute settlement	Investment promotion and cooperation				
	Provisions prohibiting performance requirements? (14)	Specific provision prohibiting ownership requirements? (16)	Free transfer of funds? (17)	Temporary entry and stay for key personnel? (18)	Provisions on expropriation? (19)	Specific reference to fair and equitable treatment (20)	State-investor dispute settlement? (22)	Investment promotion? (23)	Cooperation mechanisms? (24)	Harmonization of rules? (25)	Any Type of Assymetries? (26)	Clause foreseeing the future liberalization of investment? (27)
North-North												
EC (Treaty of Rome)	0.00	0.00	1.00	1.00	0.00	0.00	0.50	1.00	1.00	1.00	0.00	1.00
EEA	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Australia - New Zealand	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
EC — Bulgaria	0.50	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
EC — Romania	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
EFTA (2002)	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
US - Australia	1.00	1.00	1.00	0.00	1.00	1.00	0.50	0.00	0.00	0.00	0.00	0.00
South-South												
CARICOM	0.00	0.00	1.00	0.00	0.00	0.00	0.50	1.00	0.00	1.00	1.00	1.00
Gulf Cooperation Council	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
CEEAC (ECCAS)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Andean Community	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MERCOSUR	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CEDEAO (ECOWAS)	0.00	0.00	0.00	0.00	1.00	1.00	0.50	1.00	0.00	1.00	0.00	0.00
ASEAN	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00
Bolivia - Chile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COMESA	0.00	1.00	1.00	0.00	1.00	1.00	0.50	1.00	0.00	1.00	1.00	0.00
Mexico - Columbia - Venezuela	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.50
Mexico - Bolivia	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.50
Mexico - Costa Rica	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.50
Mexico - Nicaragua	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.50
CARICOM - Dominican Republic	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.50
Chile - Mexico	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
CEMAC (UEAC)	0.00	0.00	1.00	0.00	0.00	0.00	0.50	0.00	0.00	1.00	0.00	1.00
UEMOA (WAEMU)	0.00	0.00	1.00	0.00	0.00	0.00	0.50	0.00	0.00	1.00	0.00	0.00
Mexico - Northern Triangle	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Central America - Dominican Republic	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.50
CARICOM - Cuba	1.00	0.00	1.00	1.00	1.00	1.00	0.50	0.00	0.00	0.00	0.00	0.00
Panama - El Salvador	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
Mexico - Uruguay	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
Chinese Taipei - Panama	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
Republic of Korea - Chile	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
China - Macao, China	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
China - Hong Kong, China	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Singapore - India	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00

Table 10. Index of investment provisions in North-North and South-South RTAs

RTA	Year into force	Index
North-North		
EC (Treaty of Rome)	1958	**0.780**
US - Australia	2005	**0.620**
EFTA (2002)	2002	**0.560**
EEA	1994	**0.520**
EC — Bulgaria	1995	**0.420**
EC — Romania	1995	**0.400**
Australia - New Zealand	1989	**0.240**
Average		*0.506*
South-South		
Chile - Mexico	1999	**0.720**
Mexico - Northern Triangle	2001	**0.720**
Mexico - Uruguay	2004	**0.680**
Republic of Korea - Chile	2004	**0.680**
Central America - Dominican Republic	2002	**0.660**
Chinese Taipei - Panama	2004	**0.640**
Panama - El Salvador	2003	**0.640**
Mexico - Bolivia	1995	**0.580**
Mexico - Columbia - Venezuela	1995	**0.580**
Mexico - Costa Rica	1995	**0.580**
Mexico - Nicaragua	1998	**0.580**
CARICOM - Dominican Republic	1999	**0.560**
MERCOSUR	1991	**0.560**
ASEAN (ASEAN Investment Area & ASEA	1992 /95 /98	**0.540**
CARICOM - Cuba	2002	**0.500**
CEDEAO (ECOWAS)	1990	**0.500**
CARICOM	1973 /97 /01	**0.460**
Singapore - India	2005	**0.460**
UEMOA (WAEMU)	2000	**0.420**
CEEAC (ECCAS)	1985	**0.360**
COMESA	1994	**0.360**
Andean Community	1988 /98	**0.320**
Gulf Cooperation Council	1981	**0.320**
Bolivia - Chile	1993	**0.280**
CEMAC (UEAC)	1999	**0.260**
China - Macao, China	2004	**0.240**
China - Hong Kong, China	2004	**0.160**
Average		*0.495*

ANNEX IV – TECHNICAL ASPECTS OF THE ESTIMATES PROVIDED IN THE QUANTITATIVE ANALYSIS

This annex provides detail on the variables, different specifications of the gravity model used in the quantitative analysis section and results of alternative regressions to check the robustness of the estimates.

The variables

Bilateral exports (exports): This is the dependent variable in the trade model, and is measured as the value of bilateral exports in thousands of USD from reporter country *i* to partner country *j* in year *t*. Exports are preferable to imports in this specification because we are testing how investment provisions affect outflows. The data on exports comes from the United Nations Statistical Division Commodity Trade Database (Comtrade) for the period 1990-2004.

Bilateral outward FDI flows (fdi): This is the dependent variable in the investment model, and is measured as the bilateral net FDI outflows from reporter country *i* to partner country *j* in year *t*. The data on bilateral positive net outflows comes from UNCTAD's FDIStat Database (2005) for the period 1990-2004[27].

Distance (dist): The distance variable represents the second primary variable in the gravity model, and it is a proxy for transportation costs and other types of "friction" between the two trading countries. Distance is measured between the most populous cities[28] in reporter country *i* and partner country *j* according to the "great circle" method, which uses geographical co-ordinates to measure distance. Data comes from the Centre d'Etudes Prospectives et d'Informations Internationales (CEPII). The expected coefficient is negative.

Language (comlang_off): The language variable takes a binary – *i.e.*, dummy – form to represent whether or not the reporter country *i* and partner country *j* share a common official language. The variable takes a value of 1 if country *i* and country *j* share a common official language and 0 otherwise. Data comes from CEPII. The expected coefficient is positive.

Border (contig): This variable also takes a dummy form and represents whether or not reporter country *i* and partner country *j* share a border. The variable takes a value of 1 if the countries are contiguous and 0 otherwise. Data comes from CEPII. The expected coefficient is positive.

Colonial relationship (col45): This variable is a dummy variable that takes a value of 1 if reporter country *i* and partner country *j* have had a colonial relationship since 1945 and 0 otherwise. A colonial relationship is defined broadly as a relationship in which one country has exercised considerable control over the other

27 . The UNCTAD dataset is supplemented with mirror data from the OECD International Direct Investment Statistics Yearbook for the following country pairs: Mexico-Canada, Canada-Mexico, Morocco-EC and Egypt-EC.

28 . While the most populous cities are usually capital cities, there are several countries in which this is not the case: Australia, Benin, Bolivia, Brazil, Canada, Germany, Ivory Coast, Kazakhstan, Nigeria, South Africa, Tanzania, Turkey and the United States.

country's government or the evolution of its institutions. Data comes from CEPII. The expected coefficient is positive.

Bilateral tariff rate (tariff): This variable represents the average applied bilateral tariff rate between reporter country *i* and partner country *j* in year *t*. This variable acts as a proxy for trade liberalisation and is a corollary to the index of investment provisions in the models. Data comes from UNCTAD's Trade Analysis Information System (TRAINS) database (2005). The expected coefficient is negative for trade and ambiguous for FDI because tariffs can either encourage market-seeking and "tariff jumping" FDI or discourage efficiency-seeking FDI.

Market size (sumlngdp): This variable represents the joint market size of reporter country *i* and partner country *j* in year *t*. The variable is created by calculating the sum of the logs of the two individual country's GDP as measured in current USD. One expects a larger country to trade (and invest) more than a smaller country in absolute terms; thus, one can say that trade (and investment) is attracted to larger countries via gravity. Data comes from the World Bank's World Development Indicators Database.

Joint GDP per capita (sumlngdppc): This variable represents the joint GDP per capita of reporter country *i* and partner country *j* in year *t*. To calculate this variable, we add the logs of the two individual country's GDP per capita as measured in current USD. The expected coefficient is ambiguous. Data on GDP and population comes from the World Bank's World Development Indicators Database.

Nominal exchange rate (nomer): This variable represents the nominal bilateral exchange rate of reporter country *i* and partner country *j* in year *t*. This variable is calculated as the yearly average nominal bilateral exchange rate in year *t*. The variable controls for fluctuations in nominal prices between the bilateral pairs and is expected to have a negative coefficient. Data comes from the International Monetary Fund's International Financial Statistics Database.

Exchange rate volatility (ervol): This variable represents a measure of exchange rate volatility between reporter country *i* and partner country *j*. In line with the literature, it is calculated by taking the first difference of the natural log of the bilateral nominal exchange rate and then computing the standard deviation. The variable is a 5-year moving average using monthly data. The expected coefficient is negative. Data comes from the International Monetary Fund's International Financial Statistics Database.

Reporter country fixed effects ($\Sigma\alpha_i$): This term represents the sum of all of the fixed effects variables that control for omitted variables that vary by reporter country *i*.

Partner country fixed effects ($\Sigma\gamma_j$): This term represents the sum of all of the fixed effects variables that control for omitted variables that vary by partner country *j*.

Time fixed effects ($\Sigma\lambda_t$): This term represents the sum of all of the fixed effects variables that control for omitted variables that vary by year *t*.

Error term (ε): This term represents the residual error.

The mathematical specifications of the models

Base models

(a) Trade

$$\ln(exports_{ijt}) = \beta_0 + \beta_1 \ln(dist_{ij}) + \beta_2(contig_{ij}) + \beta_3(col45_{ij}) + \beta_4(comlang\_off_{ij}) + \beta_5 \ln(tariff_{ijt}) + \beta_6(sumlngdp_{ijt}) + \beta_7(sumlngdppc_{ijt}) + \beta_8 \ln(nomer_{ijt}) + \beta_9(ervol_{ijt}) + \Sigma\alpha_i + \Sigma\gamma_j + \Sigma\lambda_t + \varepsilon_{ijt}$$

(b) Investment

$$\ln(fdi_{ijt}) = \beta_0 + \beta_1 \ln(dist_{ij}) + \beta_2(contig_{ij}) + \beta_3(col45_{ij}) + \beta_4(comlang\_off_{ij}) + \beta_5 \ln(tariff_{ijt}) + \beta_6(sumlngdp_{ijt}) + \beta_7(sumlngdppc_{ijt}) + \beta_8 \ln(nomer_{ijt}) + \beta_9(ervol_{ijt}) + \Sigma\alpha_i + \Sigma\gamma_j + \Sigma\lambda_t + \varepsilon_{ijt}$$

Dummy variable RTA models

(a) Trade

$$\ln(exports_{ijt}) = \beta_0 + \beta_1 \ln(dist_{ij}) + \beta_2(contig_{ij}) + \beta_3(col45_{ij}) + \beta_4(comlang\_off_{ij}) + \beta_5 \ln(tariff_{ijt}) + \beta_6(sumlngdp_{ijt}) + \beta_7(sumlngdppc_{ijt}) + \beta_8 \ln(nomer_{ijt}) + \beta_9(ervol_{ijt}) + \beta_{10}(dummy\_rtai_{ijt}) + \Sigma\alpha_i + \Sigma\gamma_j + \Sigma\lambda_t + \varepsilon_{ijt}$$

(b) Investment

(i) Single dummy variable

$$\ln(fdi_{ijt}) = \beta_0 + \beta_1 \ln(dist_{ij}) + \beta_2(contig_{ij}) + \beta_3(col45_{ij}) + \beta_4(comlang\_off_{ij}) + \beta_5 \ln(tariff_{ijt}) + \beta_6(sumlngdp_{ijt}) + \beta_7(sumlngdppc_{ijt}) + \beta_8 \ln(nomer_{ijt}) + \beta_9(ervol_{ijt}) + \beta_{10}(dummy\_rtai_{ijt}) + \beta_{11}(dummy\_bit_{ijt}) + \Sigma\alpha_i + \Sigma\gamma_j + \Sigma\lambda_t + \varepsilon_{ijt}$$

(ii) Interaction term

$$\ln(fdi_{ijt}) = \beta_0 + \beta_1 \ln(dist_{ij}) + \beta_2(contig_{ij}) + \beta_3(col45_{ij}) + \beta_4(comlang\_off_{ij}) + \beta_5 \ln(tariff_{ijt}) + \beta_6(sumlngdp_{ijt}) + \beta_7(sumlngdppc_{ijt}) + \beta_8 \ln(nomer_{ijt}) + \beta_9(ervol_{ijt}) + \beta_{10}(dummy\_rtai_{ijt}) + \beta_{11}(dummy\_bit_{ijt}) + \beta_{12}(dummy\_rtai_{ijt} * dummy\_bit_{ijt}) + \Sigma\alpha_i + \Sigma\gamma_j + \Sigma\lambda_t + \varepsilon_{ijt}$$

where:

RTA with investment provisions (dummy_rtai): This is a dummy variable that takes a value of 1 if reporter country *i* and country *j* are party to a RTA with substantive investment provisions and 0 otherwise. All RTAs between countries at all levels of development were studied to create this variable. Data comes from the analysis performed by the OECD Secretariat in Part II of this paper.

Bilateral investment treaty (dummy_bit): This is a dummy variable that takes the value of 1 if reporter country *i* and partner country *j* are party to a bilateral investment treaty in year *t* and 0 otherwise. All BITs between countries at all levels of development were studied to create this variable. The variable was created by the Secretariat based on data provided by UNCTAD.

RTA index of investment provisions models

(a) Trade

$$\ln(exports_{ijt}) = \beta_0 + \beta_1\ln(dist_{ij}) + \beta_2(contig_{ij}) + \beta_3(col45_{ij}) + \beta_4(comlang\_off_{ij}) + \beta_5\ln(tariff_{ijt}) + \beta_6(sumlngdp_{ijt}) + \beta_7(sumlngdppc_{ijt}) + \beta_8\ln(nomer_{ijt}) + \beta_9(ervol_{ijt}) + \beta_{10}\ln(index\_rtai_{ijt}) + \Sigma\alpha_i + \Sigma\gamma_j + \Sigma\lambda_t + \varepsilon_{ijt}$$

(b) Investment

$$\ln(fdi_{ijt}) = \beta_0 + \beta_1\ln(dist_{ij}) + \beta_2(contig_{ij}) + \beta_3(col45_{ij}) + \beta_4(comlang\_off_{ij}) + \beta_5\ln(tariff_{ijt}) + \beta_6(sumlngdp_{ijt}) + \beta_7(sumlngdppc_{ijt}) + \beta_8\ln(nomer_{ijt}) + \beta_9(ervol_{ijt}) + \beta_{10}\ln(index\_rtai_{ijt}) + \beta_{11}(dummy\_bit_{ijt}) + \Sigma\alpha_i + \Sigma\gamma_j + \Sigma\lambda_t + \varepsilon_{ijt}$$

where:

RTA index with investment provisions (index_rtai): This variable was constructed in two stages. First, the ones of the dummy variable that indicates if reporter country *i* and country *j* are party to a RTA with substantive investment provisions were replaced with the value of the aggregate index created in the Part I (the value is zero otherwise). Second, 0.000001 was added to all values before taking the natural log (one cannot take the natural log of zero). RTAs between countries at all levels of development were studied to create this variable. Data comes from the analysis performed by the OECD Secretariat in Part II of the paper.

The third set of RTA models can be expressed as follows:

$$\ln(exports_{ijt}) = \beta_0 + \beta_1\ln(dist_{ij}) + \beta_2(contig_{ij}) + \beta_3(col45_{ij}) + \beta_4(comlang\_off_{ij}) + \beta_5\ln(tariff_{ijt}) + \beta_6(sumlngdp_{ijt}) + \beta_7(sumlngdppc_{ijt}) + \beta_8\ln(nomer_{ijt}) + \beta_9(ervol_{ijt}) + \Sigma_{ij}RTA_{ijt} + \Sigma_iRTA_{ijt} + \Sigma_jRTA_{ijt} + \Sigma\alpha_i + \Sigma\gamma_j + \Sigma\lambda_t + \varepsilon_{ijt}$$

and

$$\ln(fdi_{ijt}) = \beta_0 + \beta_1\ln(dist_{ij}) + \beta_2(contig_{ij}) + \beta_3(col45_{ij}) + \beta_4(comlang\_off_{ij}) + \beta_5\ln(tariff_{ijt}) + \beta_6(sumlngdp_{ijt}) + \beta_7(sumlngdppc_{ijt}) + \beta_8\ln(nomer_{ijt}) + \beta_9(ervol_{ijt}) + \beta_6(dummy\_bit_{ijt}) + \Sigma_{ij}RTA_{ijt} + \Sigma_iRTA_{ijt} + \Sigma_jRTA_{ijt} + \Sigma\alpha_i + \Sigma\gamma_j + \Sigma\lambda_t + \varepsilon_{ijt}$$

where:

Creation ($\Sigma_{ij}RTA_{ijt}$): One variable for each of the 24 North-South RTAs in the sample was created. These variables take the value of the aggregate index for each RTA when both the reporter country *i* and partner country *j* are party to the particular RTA and 0 otherwise.

Reporter diversion (Σ_iRTA_{ijt}): One variable for each of the 24 North-South RTAs in the sample was created. These variables take the value of the aggregate index for each RTA when the reporter country *i* is party to the particular RTA and 0 otherwise.

Partner diversion (Σ_jRTA_{ijt}): One variable for each of the 24 North-South RTAs in the sample was created. These variables take the value of the aggregate index for each RTA when the partner country *j* is party to the particular RTA and 0 otherwise.

Data to create these variables comes from the index of investment provisions developed by the Secretariat in Part II of the paper. Only the 24 North-South RTAs of interest in this paper were analysed, but due to data limitations, several variables drop out of the models.

Table 11. Results from the third regression (individual RTAs)

Variables	Coefficient in the FDI model	Coefficient in the trade model
dist	-0.957***	-0.949***
contig	0.204*	0.188***
col45	1.095***	1.169***
comlang_off	0.481***	0.437***
tariff	-0.020	-0.167***
sumlngdp	0.990	-0.177
sumlngdppc	-0.345	0.839***
lnnomer	-0.004	-0.023*
ervol	-0.729**	-0.363**
patcra1	-0.015	0.086***
patcra2	0.380***	0.098**
patcra3	-0.541***	0.626***
nafta1	-0.028	0.049***
nafta2	-0.003	-0.007
nafta3	-0.008	-0.019***
ecbul1	-0.007	0.040
ecbul2	-0.129***	0.006
ecbul3	0.653***	-0.511***
ecrom1	0.029	0.023
ecrom2	0.106***	-0.003
ecrom3	-0.642***	0.508***
canchi1	0.129***	0.010
canchi2	-0.013	0.001
canchi3	0.000	-0.017
ectun1	0.052	0.018
ectun2	0.021**	0.002
ectun3	0.031***	0.003
ecsa1	0.086***	0.037***
ecsa2	-0.045	-0.008
ecsa3	-0.053	-0.059**
ecmor1	0.014	0.052***
ecmor2	0.028	-0.025*
ecmor3	-0.022	-0.068*
ecisr1	-0.104**	-0.037*
ecisr2	0.109***	0.016
ecisr3	0.075	0.112*
ecmex1	0.070*	-0.030*
ecmex2	-0.040	0.028*
ecmex3	0.027	0.014

Variables	Coefficient in the FDI model	Coefficient in the trade model
nzsin1	0.162	-0.056**
nzsin2	-0.022	-0.001
nzsin3	-0.061	-0.009
ecfyr1	0.040	-0.106*
ecfyr2	-0.035*	-0.007
ecfyr3	0.006	-0.008
eftamex1	0.106**	-0.053
eftamex2	-0.024	0.003
eftamex3	-0.008	-0.009
usjor1	0.042*	0.104***
usjor2	-0.013	0.003
usjor3	-0.022	-0.030***
ecjor1	0.000	0.000
ecjor2	-0.038*	0.001
ecjor3	-0.022	-0.005
japsin1	-0.078	0.010
japsin2	-0.010	-0.001
japsin3	0.001	-0.008
eftasin1	0.000	0.061***
eftasin2	0.010	-0.001
eftasin3	0.007	-0.009
ecchi1	0.074*	0.005
ecchi2	0.011	-0.002
ecchi3	-0.019	-0.005
sinaus1	0.000	-0.021
sinaus2	0.015	0.005
sinaus3	0.039	-0.007
ussin1	0.000	0.000
ussin2	0.000	-0.014
ussin3	-0.060	0.085**
uschi1	-0.271***	0.012
uschi2	0.136**	0.007
uschi3	0.124*	-0.057**
ecegy1	0.000	0.000
ecegy2	0.068**	-0.023
ecegy3	0.073	0.058**
eftachi1	0.000	0.000
eftachi2	0.165***	0.001
eftachi3	0.000	0.000

Notes: Time and country fixed effects are not reported. All trade regressions were run with robust standard errors under heteroskedastic conditions. Values marked (***), (**), and (*) are significant at the 1%, 5%, and 10% levels, respectively.

Alternative model specifications

The use of fixed effects in a gravity model framework has created some controversy among researchers. There has been much discussion about the inclusion of country fixed effects, whether country fixed effects should include a time dimension (Mátyás, 1997), and if country pair fixed effects provide greater robustness than individual country fixed effects terms (Anderson and Ferrantino, 2004; Cheng and

Wall, 2005). To test the robustness of the results in the quantitative section, we estimate the trade and investment models with two different fixed effects specifications (see Table 12).

Country fixed effects with a time dimension

In a gravity model using country fixed effects with a time dimension, the fixed effects terms control for any variable that affects a particular reporter country *i* or partner country *j* in year *t*. All of the variables used in the models in the main section of the paper are also used in this model. Time fixed effects terms that control for specific years are also included. However, the results of several Monte Carlo experiments conducted by Anderson and Ferrantino (2004) suggest that modellers should be cautious with this approach as it can lead to "false" positives.

Country pair fixed effects

Country pair fixed affects control for any variables that are specific to the country pair in year *t*. This implies that all bilateral data, such a distance, whether or not countries share border, etc., drop out of the models because they are perfectly correlated with the fixed effects terms. Time fixed effects terms that control for specific years are also included. For the gravity models presented in this paper, we must reconfigure the dataset on an individual country basis. To control for market size, we use GDP of reporter country *i* in year *t*, GDP of partner country *j* in year *t*, the population of reporter country *i* in year *t* and partner country *j* in year *t*. The bilateral nominal exchange rate (nomer) and exchange rate volatility term (ervol) are also included.

Alternative regression techniques

Because the FDI data is calculated on a net basis, and thus can take negative values, we use a Tobit specification to estimate the FDI model. Table 12 reports the results of the same regressions with OLS. Although coefficients are slightly changed, we do not observe a significant bias and the coefficient of the investment index remains unchanged.

To check for omitted variable bias, we calculated Ramsey's regression specification error test (RESET) for the OLS estimations in the trade and FDI models. The results indicate that a misspecification and/or non-linearities may exist (*i.e.,* omitted variables may be present). We therefore report estimates for an alternative approach – the fixed effects Poisson regression.

Santos Silva and Tenreyro (2005) and Westerlund and Wilhelmsson (2006) argue that there is a potential bias in the estimation of the log-linear specification of the gravity equation, and they suggest that this bias could particularly affect the coefficients of RTA dummy variables and their interpretation (Santos Silva and Tenreyro, 2003). These authors propose the use of a Poisson pseudo-maximum likelihood estimation technique instead of the standard log-linearised OLS regression. A Poisson regression allows the variables in the equation to take a value of zero, which is not possible in a logged specification. As a result, the Poisson estimation allows us to use the untransformed version of the index of investment provisions, which takes a value of zero when there are no substantive investment provisions in the RTA or when the country pairs have not signed a trade agreement.

Table 12 includes the results of the Poisson estimation (with fixed effects) with the exports of the reporter country as the dependent variable (instead of the log of exports) and the gravity equation in its multiplicative form. The independent variables have been kept logged to compare the coefficients with the other regressions in the table. The Poisson estimation results show quite different coefficients for the main variables of the gravity equation. Distance in particular has a diminished influence, a result that seems to confirm that the log-linear form of the gravity equation could introduce a bias, as suggested by Santos Silva and Tenreyro. The index of investment provisions has a positive and significant coefficient in both

the trade and FDI models in the same range as the OLS regressions. However, the coefficient for trade (0.038) is higher than for FDI (0.025). This could suggest an overestimation of the coefficient of the index in the FDI model (the coefficient reported for the FE within regression is also lower, 0.017) and an underestimation in the trade model.

Table 12. Alternative model specifications

	Dependent variable: Exports				Dependent variable: FDI				
	Time invariant country fixed effects	Time varying country fixed effects	FE within regression (country pair fixed effects)	Poisson regression	Tobit regression	OLS	Time varying country fixed effects	FE within regression (country pair fixed effects)	Poisson regression
lndist	-0.936***	-0.884***		-0.540***	-0.886***	-0.886***	-0.866***		-0.438***
	(-57.83)	(-42.57)		(-33.34)	(-21.43)	(-21.62)	(-16.94)		(-377.79)
contig	0.234***	0.233***		0.535***	0.158	0.159	0.082		-0.416***
	(4.88)	(4.16)		(14.04)	(1.42)	(1.52)	(0.64)		(-174.06)
col45	1.221***	1.095***		0.526***	1.104***	1.104***	0.913***		0.173***
	(24.95)	(15.17)		(10.85)	(8.72)	(9.54)	(5.50)		(32.83)
comlang_off	0.429***	0.421***		0.360***	0.525***	0.526***	0.598***		0.714***
	(15.54)	(11.93)		(13.99)	(7.10)	(7.30)	(6.52)		(458.81)
lngdpr			0.524***					0.337	
			(13.15)					(1.40)	
lngdpp			0.764***					0.728***	
			(37.15)					(5.30)	
lnpopr			-0.445*					-4.257***	
			(-2.07)					(-3.87)	
lnpopp			-0.727***					-0.625	
			(-7.35)					(-1.24)	
tariff	-0.151***	-0.191***	-0.083***	-0.163***	0.086	0.086	0.070	0.048	0.039***
	(-7.88)	(-5.31)	(-8.60)	(-6.24)	(1.81)	(1.76)	(0.81)	(0.86)	(22.91)
sumlngdp	-0.555**	0.503		-0.550*	-0.642	-0.639			-1.592***
	(-2.96)	(0.00)		(-2.42)	(-1.26)	(-1.29)			(-80.99)
sumlngdppc	1.196***	0.385		1.116***	1.119*	1.116*			1.478***
	(6.22)	(0.00)		(4.67)	(2.13)	(2.20)			(71.37)
lnnomer	-0.019	0.035	-0.023***	0.024	-0.024	-0.024		-0.061	0.047***
	(-1.84)	(0.93)	(-4.72)	(1.65)	(-0.91)	(-0.87)		(-1.85)	(57.76)
ervol	-0.315**	-2.284***	-0.132**	-0.462***	-0.810**	-0.811**	-1.418	-1.103***	0.532***
	(-2.73)	(-3.64)	(-2.92)	(-3.27)	(-2.96)	(-2.69)	(-1.10)	(-3.40)	(59.80)
index_rtai	0.014***	0.011**	0.013***	0.038***	0.034***	0.034***	0.039***	0.017*	0.025***
	(5.24)	(2.46)	(7.71)	(9.48)	(4.76)	(5.03)	(3.42)	(2.05)	(109.97)
Number of obs.	9027	9027	9027	9027	7258	7258	7283	7258	7258
R-squared	0.9174	0.9378				0.6839	0.7672		
Adjusted R-squared	0.9150	0.9098				0.6726	0.6221		
R-squared within			0.3891					0.1426	
Log likelihood					-14109.6				
Pseudo R2				0.9567	0.6839				0.7992
Ramsey RESET test (F stat and Prob > F)	130.43	160.69				64.36	33.45		
	(0.000)	(0.000)				(0.000)	(0.000)		

Notes: Time and country fixed effects are not reported. All trade regressions were run with robust standard errors under heteroskedastic conditions. Values of t-statistics are in parentheses (z-values for the Poisson regressions). Values marked (***), (**), and (*) are significant at the 0.1%, 1% and 5% levels, respectively.

These alternative specifications and regression techniques nonetheless confirm the robustness of the analysis presented in the study since the coefficient on the index of investment provisions is always positive and significant.

Analysis of the impact of different categories of investment provisions

In the regressions presented in Table 13, the index of investment provisions has been decomposed into three components using the same methodology as the aggregation of the categories (*i.e.*, a simple arithmetic average).

- lninv_lib describes the provisions related to investment liberalisation. It includes the right of establishment, pre-establishment limitations, market access in services, the free transfer of funds and the temporary entry and stay of key personnel.

- lninv_protec corresponds to the protection of investment. It consists of provisions on post-establishment non-discrimination in goods and services, the prohibition of performance requirements and ownership requirements, provisions on expropriation, fair and equitable treatment and State-Investor dispute settlement.

- lninv_prom reflects the provisions on investment co-operation and promotion. It includes the last five categories of the index (investment co-operation, co-operation mechanisms, harmonisation of rules, asymmetries and future liberalisation).

The results presented in Table 13 are interesting because the impact of the provisions appears to be quite different for trade than for FDI flows. As far as investment is concerned, the provisions on investment liberalisation are not surprisingly positively correlated with an increase in FDI. However, the provisions on investment promotion and co-operation also show a positive and significant coefficient, although smaller than that obtained for investment liberalisation. It could be the case that because they include future liberalisation, these provisions are a part of the positive relationship found between the index and FDI flows.

The variable describing provisions on investment protection has a negative and significant coefficient. This implies that agreements with a high score in this category of provisions are not associated with higher FDI flows. As the category includes national treatment post-establishment, this result is somewhat surprising as it is usually considered to be an important provision. The analysis should of course be taken with caution as the interaction between the three variables in Table 13 may be influenced by the specification of the model. The three sub-components have a lower significance than the aggregate index.

Turning to the trade model, a very different picture emerges. In contrast to the investment model, the provisions on investment protection matter the most. An interesting explanation could be that these provisions are more likely to influence efficiency-seeking investment. Investors attracted to a larger market or specific resources that could not be found in another country tend to accommodate any constraint or lack of equitable treatment in the host country, whereas investors seeking efficiency gains through off-shore production could select their host country among a list of potential candidates on the basis of protections that can be granted. The negative relationship between provisions on investment liberalisation and trade flows could illustrate the trade-off between investment and trade for companies trying to serve foreign markets.

The results in Table 13 should not be taken too literally as showing the types of provisions that favour or discourage trade and investment. The results depend on the type (and number) of agreements containing the different categories of provisions.

Table 13. Econometric analysis of the impact of different categories of investment provisions

Dependent variable:	lnexports	lnfdi
lndist	-0.935***	-0.889***
	(-57.43)	(-21.58)
contig	0.202***	0.186
	(4.31)	(1.74)
col45	1.190***	1.139***
	(24.09)	(9.67)
comlang_off	0.436***	0.518***
	(15.94)	(7.17)
tariff	-0.164***	0.096*
	(-8.44)	(1.97)
sumlngdp	-0.540**	-0.631
	(-2.88)	(-1.27)
sumlngdppc	1.181***	1.108*
	(6.14)	(2.18)
lnnomer	-0.019	-0.024
	(-1.90)	(-0.85)
ervol	-0.319**	-0.807**
	(-2.77)	(-2.67)
inv_lib	-0.080***	0.111**
	(-4.63)	(2.62)
inv_protec	0.119***	-0.101*
	(6.24)	(-2.23)
inv_prom	-0.027***	0.024*
	(-4.55)	(2.01)
Number of obs.	9027	7258
R-squared	0.9178	0.6841

Notes: Time and country fixed effects are not reported. All trade regressions were run with robust standard errors under heteroskedastic conditions. Values marked (***), (**), and (*) are significant at the 0.1%, 1%, and 5% levels, respectively.

Table 14. Analysis of the investment index and dummy coefficients according to the year of reference

Dependent variable: lnfdi		Coefficient	t	Std error	R-Squared	ĝ
Dummy variable for investment provisions	Date of entry into force	0.456***	5.10	0.0894	0.6840	57.2%
	Date of signature	0.482***	5.40	0.0893	0.6841	61.4%
	For all years	0.322***	3.63	0.0886	0.6835	37.4%
Index of investment provisions	Date of entry into force	0.034***	5.03	0.0068	0.6839	-
	Date of signature	0.036***	5.35	0.0068	0.6841	-
	For all years	0.024***	3.64	0.0067	0.6835	-
Dependent variable: lnexports		**Coefficient**	**t**	**Std error**	**R-Squared**	**ĝ**
Dummy variable for investment provisions	Date of entry into force	0.190***	5.36	0.0354	0.9174	20.8%
	Date of signature	0.123***	3.52	0.0350	0.9172	13.0%
	For all years	0.199***	5.59	0.0355	0.9174	21.9%
Index of investment provisions	Date of entry into force	0.014***	5.24	0.0027	0.9174	-
	Date of signature	0.009***	3.43	0.0026	0.9172	-
	For all years	0.014***	5.48	0.0027	0.9174	-

Notes: All regressions were run with time and country fixed effects and robust standard errors under heteroskedastic conditions. Values marked (***), (**) and (*) are significant at the 0.1%, 1% and 5% levels, respectively. The ĝ statistic represents an interpretation in percentage terms of the coefficient of the dummy variable using the method suggested by Kennedy (1981).