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ASSESSING SOUTH-SOUTH REGIONAL INTEGRATION: SAME ISSUES, MANY METRICS

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INTRODUCTION

In the late 1980s and early 1990s, in parallel to the GATT negotiations under the Uruguay Round, many countries entered into trade negotiations aimed at the formation, revitalisation or extension of regional trade agreements (RTAs). Some developed countries have consolidated their existing regional integration mechanisms going well beyond 'shallow integration' (such as 1992 EU Common Market) while other country groups have created new RTAs or are currently involved in doing so. Recently, new RTAs are initiated by countries that had traditionally been the main proponents of the multilateral approach under GATT (Japan, South Korea, Singapore and other countries in East Asia).

Not only has the number of RTAs increased over time but so has the complexity of issues surrounding their formation, as well as the metrics used to assess them. Given this renewed interest in regional trade agreements (RTAs), many policymakers and academics have been questioning the impact RTAs have on members and third countries[1]. For policymakers, RTAs represented a solution to a multitude of issues: increased market access for domestic industries, positive political and

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[1] For a review of the recent work on regional trade agreements and their welfare effects see for instance Pomfret (1997) and DeRosa (1998).

economic spillovers at the regional level, more prominent role on the international scene, etc.

Among some academics, the quest seemed to have been more for finding the most popular catchphrase that will describe the complex process of regionalism. Jagdish Bhagwati referred to the process of RTA proliferation whereby countries become interconnected in a myriad of overlapping RTAs, as the 'spaghetti bowl' phenomenon (Bhagwati and Panagariya 1996).[2] Another expression that has made a long career was the *hub-and-spoke* concept (Wonnacott 1990).[3] Most of the debate stemming from this approach to regionalism was centred around the *building vs. stumbling blocks* effect that was also a popular reference in the RTA debate.[4] Yet, another metaphor put forward to explain this time the surge in RTA formation is the 'domino theory' (Baldwin 1994).

Apart from these attempts at conceptual clarifications and grand theories focused on producing a generally-accepted, 'one-fits-all' explanation of the existing RTAs, more modest attempts concentrated on the diversity of recent RTAs in terms of membership and scope, and looked at specific issues such as the elimination of non-tariff measures (NTMs), technical barriers to trade (TBTs), beyond the border measures, standards, competition policies, environment, antidumping, investment, etc. Despite these sustained research efforts, and irrespective of the approach adopted, the merits or demerits of regional integration arrangements are not fully clarified yet. Also, there are unresolved disputes around both the political and economic rationales behind RTA formation.

Given the complexity of the issues surrounding the effects of and reasons for RTA formation, the issues that will be addressed in this

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[2] In Bhagwati's view, such a patchwork of bilateral, regional and inter-regional agreements impose serious strains upon the coherent functioning of the multilateral trading system, as trade flows are governed by different discriminatory rules.

[3] The hub and spokes literature argues that, rather than producing an amorphous 'spaghetti bowl' regionalism with no clear structure, large developed economies will become hubs for different networks of regional agreements. The spokes are linked to the hub by RTAs in which the hub generally sets the terms and conditions of membership.

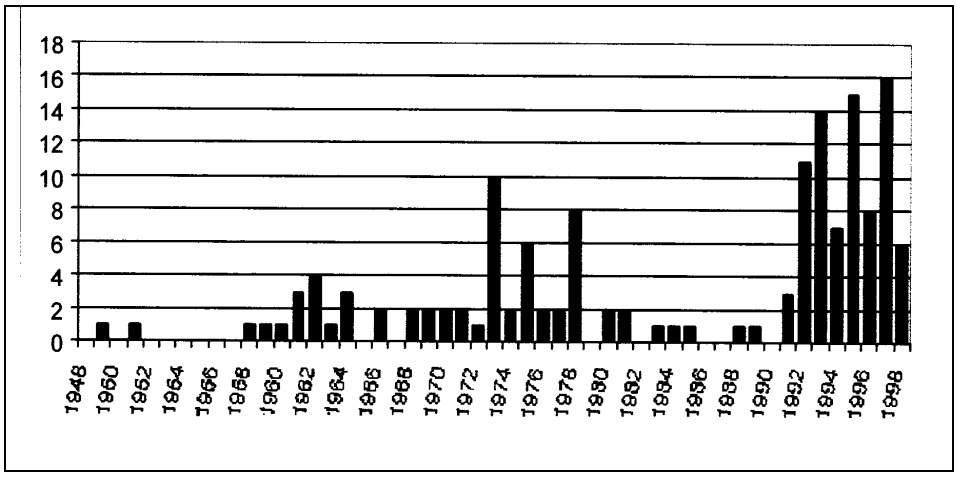
[4] For a good survey of the literature on this debate, see Bhagwati and Panagariya (1996) and Winters (1996).

paper fall within this more applied stream of literature and aim at quantifying the impact of several regional trading arrangements on the trade flows among members and between them and third countries. The remainder of the paper is organised as follows: section 1 briefly presents the recent trends in regionalism. The second section analyses several South-South RTAs, using two methodologies among the various approaches used to assess the impact of RTAs: an ex-post gravity model and an ex-ante CGE analysis. The estimated results of the CGE simulation are arrived at by using the Global Trade Analysis Project (GTAP) model. The concluding section summarises the main findings and, based on that, lists some policy issues that need to be addressed during the process of RTA formation.

1. RECENT ISSUES IN RTA FORMATION

Irrespective of the catchphrase used to characterise it, regionalism has intensified over the last decade. RTAs are more numerous than ever and at the moment, there seems to be little, if anything, that can stop this trend. This trend is most visible with regard to bilateral trade agreements.

Figure 1. Number of notified RTAs, by year of entry into force



Source: WTO (1999)

Figure 1 shows the number of notified RTAs which were in force each year since the inception of the GATT. As can be seen from the

figure, the number of RTAs in force stayed almost constant between 1978 and 1991. Since then, the number of notified RTAs in force began to rise rapidly, increasing from 42 in 1991 to 87 in 1998, an increase of 107 per cent. By July 2000, 172 regional agreements were in force (WTO 2000).

Furthermore, the integration process has moved beyond the regional level to become inter-regional. New inter-continental integration projects with potentially significant impact on global trade and investment have been proliferating. APEC economies have agreed to achieve free and open trade and investment by 2010 (2020 in the case of developing countries) (UNESCAP 1998). In the Western Hemisphere, a free trade area of the Americas (FTAA), comprising 34 countries from Canada to Argentina, is in the making, with negotiations to be completed no later than 2005 (Aninat 1996; Devlin, Estevadeordal and Garay 1999). The EU's widening of integration, as stated above, has extended to countries and regions outside of Europe. Also, discussions have been revived regarding freer transatlantic trade between the EU and the USA (European Commission 1999).

Another feature of the current wave of regionalism that needs to be underlined relates to the role played by the EU as a major driving force behind the move towards regionalism. The EU commercial policy consistently pursued the formation of regional trade arrangements with countries from several major geographical areas: the EFTA countries, the ACP countries, the Mediterranean region, and the Eastern European countries. Indeed, by looking at their membership and the links created by these bilateral trade agreements, one can notice for instance that out of the 93 agreements notified to the GATT Article XXIV until May 2000, the EU was a party to 28 of them. As part of the EU broad commercial policy, these often called *EU agreements* are tailored according to the different interests of the EU in these regions, and most of the time the EU has adopted a regionally-consistent approach, promoting the subsequent RTA formation among countries in the region. This process gave birth to a significant number of *EU-induced RTAs*, around 30 other agreements being formed by countries with which the EU already has bilateral arrangements: East-Central European and Baltic countries, Israel, Turkey, and countries in North Africa and the Mediterranean basin[5].

[5] The EU induced these agreements through both political declarations (see for instance the Barcelona Declaration, the Presidency Conclusions of the Cannes European

Lastly, in an indirect manner, the success of its own integration process tempted many developing countries to follow the EU integration project of establishing a common market and an economic union. The result was the formation of several regional integration schemes, especially in Africa and Latin America, that aimed at similar integration objectives, with more or less success. It results that already more than 50 percent of the agreements notified are EU-shaped since the agreements between the EU associate countries are in many respects similar to the agreements between the EU and associate countries.[6]

Outside the EU framework, the other prominent cases are RTAs involving at least one Latin American country. From the late 1990s, new proposals for preferential trading arrangements also began proliferating in the Asia-Pacific region (see Box 1). Even though only few of these proposals have so far been implemented, it is evident that several economies in the region are seriously engaged in the development of new preferential trading relationships, while others are actively considering moves in this direction. This includes economies in the region, which were in the past staunchly against the preferential route of trade liberalisation such as Japan and Korea.

Some 20 new such agreements are expected, the most active country remaining Chile, having the intention to conclude 10 more agreements, followed by Mexico with 6, and Mercosur with 4 (see Annex 1). It is interesting to observe some emerging hub positions. Chile is the most prominent example both in terms of number and geographical distribution. Mexico is also trying to diversify its RTA links outside the Americas (agreements with the EU, Japan, Singapore and Israel). Another recent development that needs further examination is the recent move towards RTAs by some Asian countries, the most prominent being Japan and South Korea.

Council of June 1995) and economic incentives (regional financial support, capacity building) or through trade incentives (the most important being the pan-European cumulation of origin). The EU has put great emphasis on the pan-European cumulation of origin as a way to encourage trade in intermediate goods and services among its associate countries, thereby making use of potential complementarities among them.

[6] Apart from the agreements expected under the ACP-EU framework, there are at least six more agreements where the EU is already or is expected to become a member (with Algeria, Chile, GCC, Lebanon, Mercosur and Mexico). With regard to the EU-induced RTAs, bilateral trade agreements are expected between each EU RTA partner. For instance, there are bilateral FTA emerging among all East-European and Baltic countries and among both of them and the Mediterranean countries.

Box 1: Proposed new RTAs in the Asia Pacific region

NAFTA-related: Singapore-USA*, Japan-Mexico, Korea-Mexico, Singapore-Mexico*, Japan-Canada, Singapore-Canada, P5 (USA, Australia, Singapore, Chile, New Zealand), Australia-USA.

Chile-focused: Korea-Chile, Singapore-Chile, Japan-Chile, New Zealand-Chile, USA-Chile.

Western Pacific bilateral RTAs: Singapore-Japan*, *Singapore-New Zealand*, Singapore-Australia*, Singapore-Korea, Korea-Australia, Korea-New Zealand, Hong Kong-New Zealand.

Amalgamation of existing RTAs: AFTA-CER.

Potential steps for East Asia: Japan-Korea, Japan-Korea-China, ASEAN-plus-three, China-ASEAN.

Western Hemisphere: FTAA*.

Europe-Related and Trans Atlantic: *Mexico-EU*, Singapore-EU, EU-Chile, Singapore-EFTA, EU-USA.

Note: * under negotiations; italics refer to agreements signed; and all others are under study or being proposed.

Source: PECC Issues Paper (forthcoming)

In a world where regional trade arrangements are so widespread, it is hard to characterise them as 'exceptions'. Given the current trends, it becomes increasingly important to understand not only the rationale behind them but also their likely effects on members and third countries. On the other hand, it has to be said that only relatively few integration groupings among developing countries have effectively achieved their integration objectives. Most RTAs among developing countries are still behind their original schedule. This slow progress in regional integration has led many observers to conclude that significant economic advantages from integration have rarely been reaped in terms of export diversification, increased international competitiveness, more efficient allocation of resources, or significant stimulation of production and investment in the region (Yeats 1998; Foroutan 1993; Nogues and Quintanilla 1993).

Given the importance of this issue and the ambiguity that persists around the economic impact of many RTAs among developing countries, the next section of the paper will rely on two widely used methodologies to assess the impact of several South-South agreements on members and third countries.

2. METHODOLOGICAL APPROACHES TO THE STUDY OF RTA TRADE EFFECTS

While this new wave of regionalism has certainly positive institutional and political implications, there are not always clear estimates regarding their economic effects. The reasons for this incertitude are firstly the complexity of many RTAs but also the multitude of metrics used to assess them from an economic point of view.

For many years, the general opinion was that any economic integration that represents a movement towards freer trade and therefore should be beneficial and welfare-enhancing. This opinion was only challenged in 1950 when Jacob Viner showed in his *Customs Union Issue* that net impact of a regional trade agreement on welfare is uncertain and depends on a number of economic circumstances. This early theoretical and empirical literature that started in the 1950s with Viner's seminal work (Viner 1950) opened new ground by advancing the idea that the net welfare effects stemming from the formation of an RTA are ambiguous[7]. In a simple partial equilibrium model under perfect competition, an RTA will increase the level of trade between members at the expense of less efficient domestic producers *(trade creation*) but also of more efficient third countries (*trade diversion*).[8] The net effect of an RTA on trade (as a proxy for welfare) depends thus on the relative size of these two effects.

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[7] See for instance Viner's and Meade's pioneering work in the 1950s on free trade areas and customs unions (Viner, 1950; Meade, 1955), which has been further elaborated, among others, by Lipsey (1960), Johnson (1965) and Balassa (1975). For a review of early empirical measurements of trade creation and diversion effects, see for instance Corden (1975).

[8] The trade creation effect is equal to the increase in imports from the partner country at the expense of domestic producers and the post-RTA imports, which were not previously imported. The trade diversion effect resulting from the regional integration arrangement is equal to the initial imports from third countries that are displaced by intra-RTA imports.

Despite these analytical advances, however, the initial Vinerian ambivalent conclusion – that RTAs could enhance or reduce welfare – remains. The issue of the net effect of RTAs on the welfare of the member countries and on the world economy is therefore an empirical issue. Moreover, even if there were a clear-cut theoretical answer to the question of the sign of the effects, the magnitude of these effects would still be of interest.

Trade creation and diversion effects are estimated empirically in a number of ways. One method that is best suited for ex-post analyses is based on the gravity model. For ex-ante studies both partial and general equilibrium models are widely used. Despite a number of drawbacks, the partial-equilibrium models have the advantage of working at a very disaggregated product-level.[9] Another, more complex, model is based on computable general equilibrium models (CGE) that take into account all the inter-sectoral and international linkages that are affected by changes in trade policies as a result of RTA formation.

In the remainder of this section, the gravity model will be used to analyse ex-post the trade effects of 9 RTAs, while the CGE model will be used for an ex-ante analysis of a Framework Agreement on Trade Preferential System (FATPS) among the member states of the Organisation of the Islamic Conference (OIC).

2.1. South-South RTAs: A gravity-model-based ex-post assessment

One model that became the 'workhorse' of studies on regionalism is the gravity model (Bayoumi and Eichengreen 1997). The gravity model has been used widely as a baseline model for estimating the impact of a variety of policy issues, such as political blocs, patent rights, regional trading groups and various trade distortions.[10] The widespread use of gravity equations in estimating the trade effects arising from RTA formation is despite the fact that they have tended to lack strong theoretical bases. Most early papers using gravity models were *ad hoc* rather than being based on theoretical foundations. Despite its use in many

[9] For a description of an advanced partial equilibrium model, see Laird and Yeats (1986).

[10] Apart from international trade flows, gravity models have achieved empirical success in explaining various types of inter-regional and international flows, including labour migration, commuting, etc.

early studies of international trade, the equation was considered suspect in that it could not easily be shown to be consistent with the dominant Heckscher-Ohlin model explaining net trade flows in terms of differential factor endowments. Exceptions to this trend include Anderson (1979), Bergstrand (1985), Deardorff (1998), and Feenstra, Markusen, and Rose (1998). Anderson (1979) showed that the gravity model could be derived from expenditure share equations assuming commodities to be distinguished by place of production. Anderson also showed that the model should also, to be fully consistent with the generalised expenditure share model, include remoteness measures in bilateral share equations, as we do here. Bergstrand (1985) showed that the gravity model can also be derived from models of trade in differentiated products. Such trade must lie at the core of much of manufacturing trade, given the very large two-way flows of trade in even the most finely disaggregated industry data. Finally, Deardorff (1998) showed that a suitable modelling of transport costs produces the gravity equation as an estimation form even for the Heckscher-Ohlin model.

Typically, in the case of the gravity model of trade, bilateral trade flows are dependent upon the size of the two economies and the distance between them. Thus, the most commonly used version of the gravity model assessing the impact of RTAs is the following:

$$\log\left(X_{ij}^{t}\right) = c_0 + c_1 \log\left(Y_i^t\right) + c_2 \log\left(Y_j^t\right) + c_3 D_{ij} + c_4 contig + c_5 lang + c_6 RTA_k + e_{ij}$$

k=1 to n

where X_{ij}^{t} are exports from country *i* to country *j* at time *t*, Y_i^t and Y_j^t are the GDP of country *i* and *j* at time *t*, D is the distance between the capital cities of the two countries, and e_{ij} is a random error term usually taken to be normally distributed. It is common to expand the basic gravity model by adding other variables, which are thought to explain the impact of various policy issues on trade flows. In the case of gravity equations used to estimate the impact of regional trade arrangements dummy variables are added for each RTA under scrutiny. Furthermore, in order to avoid capturing the impact of other influences on trade by these dummy variables, other dummy variables are added for common language and common border.[11] Thus, the other variables (*contig*,

[11] Apart from these dummy variables, other exogenous regressors used are dummies for wars, conflicts, natural catastrophes, etc. Krueger (1999) also includes a dummy for

lang , RTA_k) are dummies for common border, common language and RTA membership respectively. The coefficients for all these dummy variables are expected to be positive since neighbouring countries or countries sharing the same language are assumed to trade more than non-neighbouring countries or countries having different languages.

2.1.1. The Model[12]

A particular specification of the gravity model may be used to assess the trade creation and diversion effects resulting from RTA formation. The model used in this paper is specified below:

$$exports_{xm}^{t} = c_0 + c_1 gdp_X^t + c_2 gdp_M^t + c_3 gdppc_X^t + c_4 gdppc_M^t + c_5 dist + C_6\text{CONTIG} + C_7\text{LANG} + +C_8\text{INTRA\_AFTA} + C_9\text{EXTRA\_AFTA} + C_{10}\text{INTRA\_AND} + C_{11}\text{EXTRA\_AND} + C_{12}\text{INTRA\_CARICOM} + C_{13}\text{EXTRA\_CARICOM} + C_{14}\text{INTRA\_COMESA} + +C_{15}\text{EXTRA\_COMESA} + C_{16}\text{INTRA\_ECOWAS} + C_{17}\text{EXTRA\_ECOWAS} + C_{18}\text{INTRA\_EU} + C_{19}\text{EXTRA\_EU} + C_{20}\text{INTRA\_MERCOSUR} + C_{21}\text{EXTRA\_MERCOSUR} + C_{22}\text{INTRA\_NAFTA\_TC} + C_{23}\text{EXTRA\_NAFTA} + C_{24}\text{INTRA\_SADC} + C_{25}\text{EXTRA\_SADC} + \varepsilon_{ij}$$

where all variables in lower case are expressed in logarithmic form:

exports	logarithm of exports from country X to M in year t
C	intercept
gdp_X^t	logarithm of country's X GDP in year t
gdp_M^t	logarithm of country's M GDP in year t
$gdppc_X^t$	logarithm of country's X GDP per capita in year t
$gdppc_M^t$	logarithm of country's M GDP per capita in year t
dist	logarithm of distance between the capital cities of X and M

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remoteness to take into account the fact that some countries are further away from most of their trading partners than other countries. Gilbert, Scollay and Bora (2001) add also openness.

[12] This section is based on Cernat (2001), where the model and the dataset are discussed at length.

CONTIG	dummy variable taking the value of 1 if countries X and M share a common border, otherwise being zero
LANG	dummy variable taking the value of 1 if countries X and M share a common language, otherwise being zero
INTRA_RTA	dummy variable taking the value of 1 if countries X and M are part of the RTA, zero otherwise
EXTRA_RTA	dummy variable taking the value of 1 if country M is a member of the RTA and X a non-member, zero otherwise. A list of RTA examined and their membership is provided in Annex 1.

For the pooled data, two year dummies were added for 1994 and 1998 (Y94, Y98).

The two dummy variables take the value of one in the following cases: EXTRA_RTA becomes one if the exporter is a third country and the importer is an RTA member, otherwise is equal to zero. INTRA_RTA becomes one if both partners are RTA members. The two dummy variables can be interpreted jointly in terms of trade creation and diversion effects[13].

Table 1. Interpreting RTA Dummy Variables

Coefficient	EXTRA_RTA		
INTRA_RTA	Sign	+	-
	+	Trade creation and trade expansion	Trade diversion
	-	Trade expansion	Trade contraction

Thus, if third exports increase as a result of RTA formation (EXTRA_RTA > 0) then this suggests a trade creation and expansion effect, if INTRA_RTA is positive. If only EXTRA_RTA is positive and INTRA_RTA is negative then there is only a trade expansion effect. If INTRA_RTA > 0, then a negative sign for EXTRA_RTA would suggest evidence in favour of trade diversion. If both variables are negative, then the effect is trade contraction (Table 1).

[13] It should be noted that trade creation effects refer to gross trade creation, as defined by Balassa (1967). For further details about the construction and interpretation of these dummy variables, see Cernat (2001).

Such RTA dummy variables are included for ten major regional trading blocs: the EU, NAFTA, MERCOSUR, the Andean Community, CARICOM, SADC, COMESA, CER, AFTA, and ECOWAS. The results of the South-South RTAs included in this analysis are presented below.

2.1.2. The results

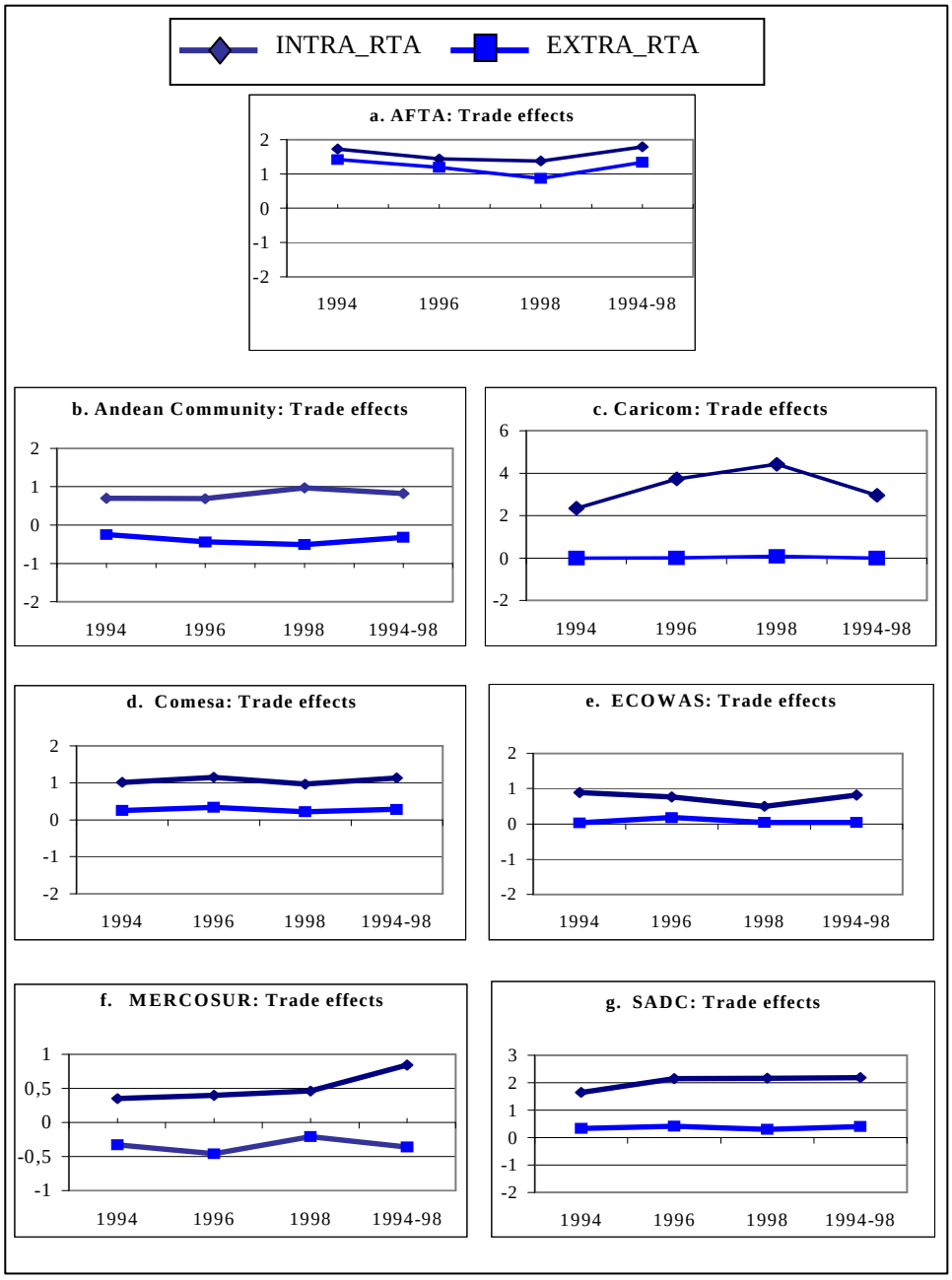
If trade diversion coefficients are below zero, this indicates a decrease in trade with non-members as a result of RTA creation. When trade diversion coefficients are positive, this indicates an increase in trade with non-members and, therefore, instead of trade diversion, the effect is trade expansion.

Even though AFTA was less in operation during the sample period than other RTAs, AFTA trade creation is well above unity in all years, suggesting that AFTA countries were trading in 1996 and 1998 more than 4 times (more than 5 times in 1994) than one would expect, given all the other gravity variables. At the same time, imports of AFTA countries from third countries were also more than four times in 1994 and more than double in 1998 the level of trade between two otherwise comparable non-AFTA countries. The bottom line is that even though progress towards creating AFTA was rather slow among ASEAN countries, there is strong evidence for an outward-oriented trade arrangement. Similarly, CARICOM, COMESA, ECOWAS, and SADC all show significant trade creation effects with no evidence of trade diversion and moderate trade expansion effects. For instance, trade between COMESA members was more than two times the level, as a result of the trade creation effect. Trade expansion was also quite significant: if an importer was in COMESA while the exporter was in the rest of the world, imports into the COMESA country from the third country were on average 30 per cent higher than the predicted levels without the trade expansion effect of COMESA.

On the other hand, the Andean Community, despite its early inception, has lower estimates for both trade creation and diversion than many more recent RTAs.[14] While the intra-Andean trade seemed to be more than two times higher than trade levels between otherwise similar countries, exports from third countries were 23 to 40 per cent lower than those

[14] Other authors found weaker results for the Andean group in earlier periods. Frankel (1997) for instance finds negative and insignificant trade creation coefficients for the 1960s and 1970s and positive trade creation in 1992.

Figure 2. Gravity model trade creation and diversion effects



Source: Cernat (2001)

between otherwise similar non-Andean members. These results suggest that during the period examined, there was evidence of trade diversion in the Andean region. Similar results were found for MERCOSUR. In the period 1994-98, it appears that Mercosur increased trade among members more than two times and reduced extra-regional imports with more than a third of their level, as predicted by all other gravity variables.

In sum, these gravity model estimates of the impact of RTA formation on both intra- and extra-regional trade are all positive (with the exception of Andean Community and Mercosur) and in all cases trade creation effects are higher than trade diversion or expansion effects, suggesting that throughout the period under scrutiny intra-RTA trade increased more than trade with non-members, as a result of RTA formation.

2.2. Ex-ante CGE analysis: assessing the impact of the FATPS

Another methodology that has become standard practice in RTA analysis is to use computable general equilibrium models to estimate *ex-ante* the likely impact of an RTA (Francois and Shiells 1994). Due to the complex nature of RTAs and the interplay between a large array of variables incorporated in these models, CGE models are well suited to analysing the likely consequences of envisaged RTAs.[15] Recent multi-country computable general equilibrium (CGE) models incorporate detailed input-output databases about domestic variables on consumption, savings and production disaggregated at sector and country levels. These models also work out the inter-country linkages involved in international trade. Trade data are combined with protection and transportation costs to simulate these fundamental international linkages across countries and regions at the sectoral level.[16].

2.2.1. The current model

After assessing a number of South-South RTAs that have been in force for some time, now the attention is focused on assessing *ex-ante* the

[15] For a good survey of the vast empirical work using multi-country CGE models, see Robinson and Thierfelder (1999), who review over 70 CGE studies on RTAs.

[16] Further refinements were brought when dynamic effects were incorporated into the static approach to regional integration. The dynamic effects resulting from regional integration usually cited are those factors introduced by the new trade theory and relate to investment, technological change, competition and scale effects, etc. Both the EU project and NAFTA have been justified on economies of scale that not only allowed RTA members to increase their intra-regional exports but also their trade with the rest of the world. Owen (1983), for instance, estimated empirically significant scale effects for some manufacturing sectors as a result of EC integration.

impact of a proposed Framework Agreement on Trade Preferential System (FATPS) among the countries members of the Organisation of Islamic Conference (OIC). Countries that are potential members of FATPS-OIC have already engaged in a variety of trade liberalisation initiatives. The OIC member countries have also established and/or joined at least 18 regional economic co-operation schemes, in Sub-Saharan Africa, North Africa, Middle East, or Asia. Some are formed with other OIC countries. Others include non-OIC partners.[17] As mentioned in the text of the FATPS agreement, this new preferential scheme aims to become complementary to these existing regional schemes by promoting trade among OIC members. The main mechanism is the gradual exchange of trade preferences (covering both tariff and non-tariff measures) in all product groups including agriculture and animal products and industrial goods.

In this section, the formation of the FATPS-OIC is assessed using a multi-country computable general equilibrium model that allows analysing ex-ante the impact of RTA formation. The model adopted here consists of 21 linked countries and regions, drawn from those available in the standard Global Trade Analysis Project (GTAP). The country aggregation has been chosen in such a way to isolate the largest number of potential FATPS members. The original 57 sectors are aggregated into four new sectors (food, other primary products, manufactures, and services). The standard GTAP model is a multi-region, static CGE model, with perfect competition and constant returns to scale. Bilateral trade is handled via the Armington assumption. The trade protection data is the one included in the GTAP database version 5 (preliminary version), where 1997 is the base year.[18]

Since the timetable and the actual cuts provided for by the FATPS seem to be flexible and open to negotiations among members, the only policy scenario simulated in this section involved the removal of all tariffs (including ad valorem equivalents of non-tariff measures, where applicable) among those potential FATPS members that are available in the standard GTAP model as single countries or homogenous regions (i.e. without non-Islamic countries). As such, tariffs removal is simulated for Indonesia, Malaysia, Bangladesh, Turkey, Morocco,

[17] For a detailed synopsis of all these arrangements among or including OIC members, see SESRTCIC (2000).

[18] For a full description of the GTAP model and database, as well as a series of applications of the model, see Hertel (1997).

Mozambique, and Uganda, as well as sixteen other potential FATPS members that are aggregated into the GTAP built-in regional groups of Middle East and North Africa.[19]

2.2.2. Results

Before discussing in detail the results of the simulation, some caveats to the analysis should be mentioned from the outset. These empirical results should not be interpreted as 'predicting' or 'forecasting' since several assumptions behind the analysis were oversimplified to facilitate the undertaking of this policy experiment and the representation of the actual trade arrangement. Obviously, the results are sensitive to changes in these assumptions. Firstly, there is also no attempt to capture the dynamic effects that are often associated with such arrangements, such as increased productive investment flows, changes in technologies or skill upgrading. The focus instead is on understanding the impact of RTA formation on trade and welfare of both members and non-members. Consequently, the trade estimates should be interpreted as static trade effects. Once these dynamic effects are taken into account, the positive impact of an RTA is generally higher. Secondly, in the latest available standard GTAP 5 database used in this experiment, data for all variables refer to 1997. Therefore, one refinement that could be made to improve the estimates is to construct projections for the year when the FATPS is expected to be fully operational. Thirdly, the trade protection data used for this CGE simulation includes only the MFN treatment of trading partners, no account being taken of the preferential treatment granted already among potential FATPS members within other trading arrangements. In this regard, the current results are overestimates since once preferential trade is taken into account, both trade creation and diversion estimates should be smaller. Furthermore, another improvement in the database would be to update the protection data with the most recent tariff cuts undertaken since 1997 on an MFN basis. This should also reduce the trade diversion effects identified using the current model.

Despite these caveats, the results obtained are still indicative of the likely FTAPS effects. Table 2 reports the percentage changes in exports, terms of trade, and welfare for the countries and regions included in the model.

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[19] Other OIC members are included in the model bust since they are aggregated together with many other non-OIC members in the built-in GTAP regional groups, they could not be included as potential FATPS members in the policy experiment.

Table 2. Full FATPS-OIC scenario: percentage changes in selected variables

Region	Exports	Terms of trade	Welfare
Australia & New Zealand	-0,07	-0,06	-0,02
China & Hong Kong-China	-0,06	-0,04	-0,02
Japan	-0,01	-0,07	-0,01
Newly Industrialised Countries	-0,07	-0,05	-0,03
Indonesia	**2,27**	**0,94**	**0,3**
Malaysia	**1,42**	**0,7**	**0,78**
Bangladesh	**6,15**	**-0,83**	**-0,08**
South Asia	-0,28	-0,17	-0,04
NAFTA	-0,04	-0,03	-0,01
Latin America and Caribbean	-0,09	-0,06	-0,02
Western Europe	-0,03	-0,04	-0,02
Eastern Europe and FSU	0	-0,04	-0,02
Turkey	**4,91**	**3,96**	**1,14**
Middle East	**2,08**	**-0,29**	**-0,41**
Morocco	**4,26**	**2,13**	**0,87**
North Africa	**3,25**	**-0,17**	**-0,12**
SACU	-0,02	-0,02	-0,01
Sub-Saharan Africa	-0,02	0	0
Mozambique	**-0,01**	**0,2**	**0**
Uganda	**0,95**	**0,61**	**0,08**
Rest of the World	-0,02	-0,02	-0,01

Source: GTAP database and author's calculations. Countries in bold are considered FATPS members in the simulation.

Countries and regions in bold are those that underwent regional liberalisation. The results suggest that FATPS has a significant potential for overall trade expansion, increasing the potential intra-regional trade of members by as much as 6.15%, in the case of Bangladesh. More modest results are expected for the African countries (Uganda and Mozambique) whose total exports change only marginally. At the same time, in percentage terms, third countries experience very minor reductions in their overall exports.

With regard to the terms of trade changes, the results are more nuanced. While many FATPS potential members witness an improvement in their terms of trade, others (such as Bangladesh, Middle East and North Africa) may see a moderate deterioration of their terms of trade. For these countries, although the price of exports increases as a

result of FATPS formation, the price of imports also increases slightly more than the price of their exports. This effect may be explained by the differences in the sectoral export structure, production and demand factors among FATPS members.

In terms of welfare changes, although virtually all FATPS members show an increase in exports, not all countries stand to gain under the assumptions underlying the current experiment. Yet, for third countries, the welfare losses are almost negligible, and, overall, the forecasted change in the welfare indicator suggests that the introduction of the FATPS can be a positive development for FATPS' overall welfare.

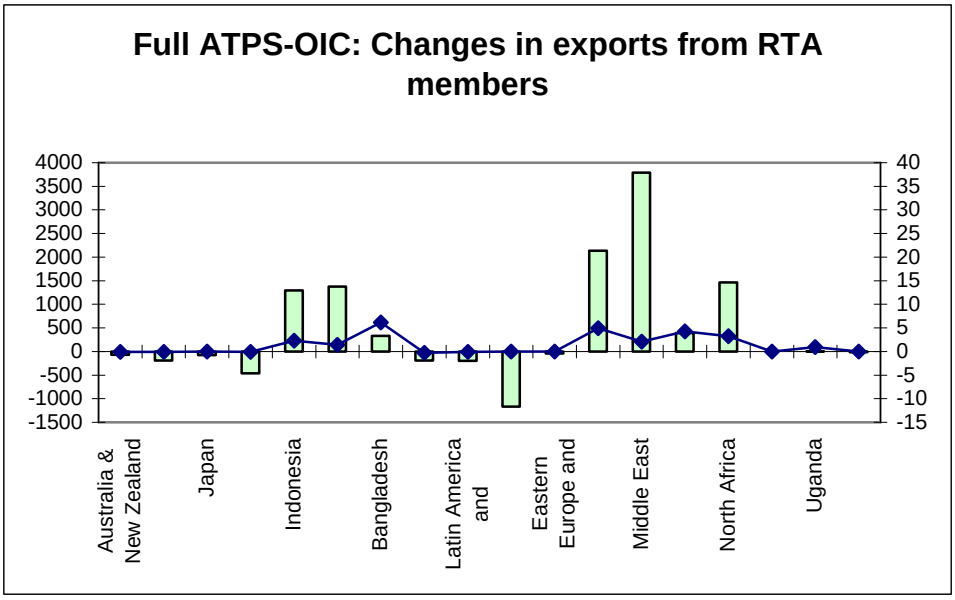
With regard to exports, Figure 3 below puts together the absolute and percentage changes in total exports as a result of FATPS formation, while

Figure 4 reports changes in sectoral exports, by FATPS members. Among FATPS members, the largest increase in absolute terms in exports occurs for the Middle East, followed by Turkey and North Africa. Since the regional aggregates are different in terms of their economic size, it is also important to assess the percentage changes in exports. Thus, the largest increase in percentage terms accrues to Bangladesh, followed by Turkey. Mozambique and Uganda show negligible effects both in absolute and percentage terms. At the same time, the reduction in exports from non-members is small in absolute terms, and negligible in percentage terms.

As for the changes in sectoral exports, as expected given the high barriers in agriculture compared to other sectors, there is a dramatic increase in total agricultural exports from most FATPS members. The exception, again, is the two African countries included in the experiment (Mozambique and Uganda). Turkey seems an interesting example of trade specialisation in agricultural and food products (more than 100% increase in exports), while witnessing a reduction in all the other sectoral exports. In contrast, in the case of Bangladesh, all sectoral exports show a moderate increase, with agriculture exports increasing by 20%.

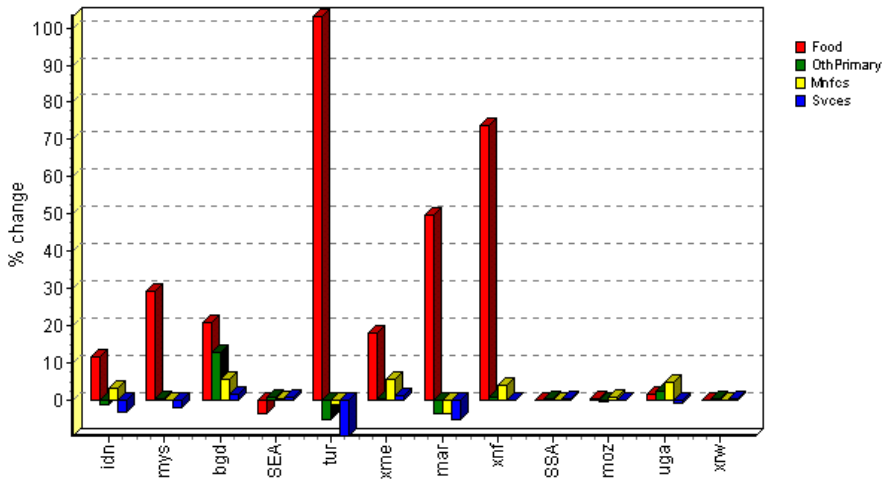
Finally, Figure 5 gives an indication of the likely trade effects of FATPS formation to account for the trade creation and diversion effects. Trade diversion stands for a decrease in imports of FATPS members from third countries. Trade creation stands for an increase in

Figure 3. Changes in total exports

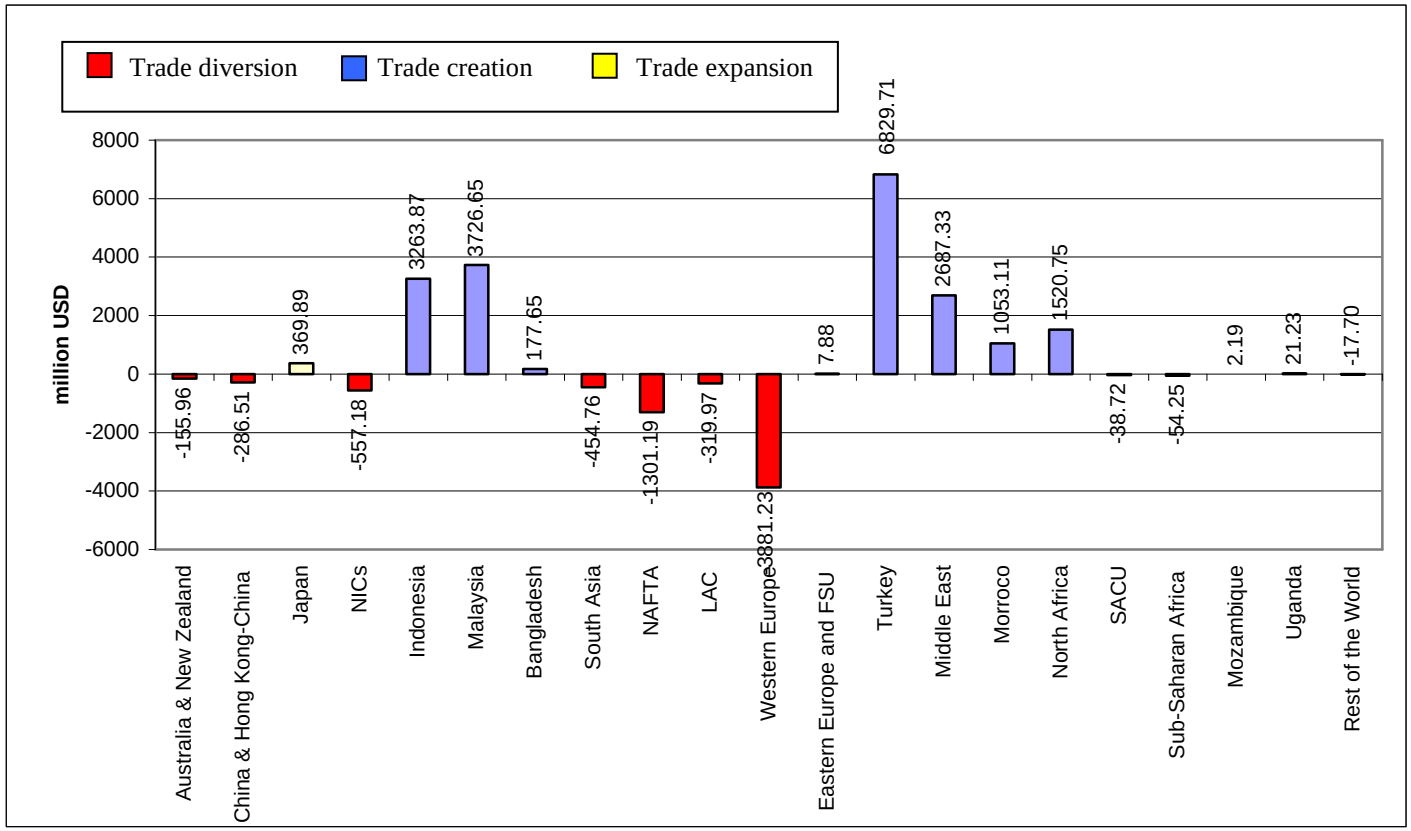


Source: GTAP database and authors' calculations.

Figure 4. Full FATPS liberalisation: percentage changes in sectoral exports



Source: GTAP database and authors' calculations.


Trade diversion
Trade creation
Trade expansion
million USD
8000
6000
4000
2000
0
-2000
-4000
-6000
-155.96
-286.51
369.89
-557.18
3263.87
3726.65
177.65
-454.76
-1301.19
-319.97
-3881.23
7.88
6829.71
2687.33
1053.11
1520.75
-38.72
-54.25
2.19
21.23
-17.70
Australia & New Zealand
China & Hong Kong-China
Japan
NICs
Indonesia
Malaysia
Bangladesh
South Asia
NAFTA
LAC
Western Europe
Eastern Europe and FSU
Turkey
Middle East
Morroco
North Africa
SACU
Sub-Saharan Africa
Mozambique
Uganda
Rest of the World

intra-FATPS trade.[20] Trade expansion occurs when imports from non-FATPS members increase as a result of RTA formation. The largest trade creation effect is expected to occur for Turkey, mainly as a result of FATPS agricultural liberalisation, followed by Indonesia and Malaysia. The largest trade diversion effect is expected to arise with regard to imports from Western Europe, mainly as a reduction in food and agricultural imports in Middle East countries. While this may seem *prima facie* as a case of trade diversion, it may well be a removal of trade distortions introduced by the EU agricultural policies and a move towards more allocative efficiency.[21] Interestingly, in the case of Japan, the estimates show an expansionary effect, instead of trade diversion. Overall, the data presented in Figure 5 confirm the previous findings that trade creation (19 billion USD increase in intra-FATPS trade) exceeds by far the trade diversion effects (6 billion reduction in FATPS imports from third countries), even though only static effects are considered.

CONCLUSIONS

After a brief discussion of recent trends in RTA formation, this paper used two different methodologies (the gravity model and CGE analysis) to examine the trade effects of several South-South RTAs. Gravity models are best suited for ex-post analyses, while CGE models perform well in ex-ante studies. Due to the differences in assumptions and methods, the results of each methodology do not easily lend themselves to comparison.[22] Yet, several similar conclusions emerged from both exercises.

The gravity results have shown that with the exception of the Andean Community and Mercosur that seemed to have reduced trade with non-members, the other South-South RTAs examined are not only trade-creating but also trade-expanding, increasing the overall trade sometimes quite significantly. In the case of FATPS, the ex-ante static

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[20] It should be noted however that trade creation and diversion effects, as defined here, are not comparable with the trade creation and diversion effects estimated from the gravity model. While CGE-estimated trade effects are actual changes in trade flows, the gravity model estimates are the coefficients obtained from regression and have to be interpreted based on an exponential transformation.

[21] For a similar argument in favour of the idea that trade diversion may sometimes be welfare improving, see Wonnacott (1996).

[22] For a comparison of ex-ante gravity model results with CGE estimates in the case of future RTAs in the Asia-Pacific region, see Gilbert, Scollay and Bora (2001).

CGE results suggest that, despite some potential for trade diversion, the net effect is trade creation.

While the methodologies used in this paper need further refinement, the findings suggest that regional integration among developing countries is overall net trade creating and can act as a practical instrument for gradual integration of developing countries into the global economy. Furthermore, beyond these economic effects, RTAs are many times part of a larger framework for regional cooperation aimed to promote regional stability, sound and coordinated economic policies and a better regional economic infrastructure. Although difficult to quantify, all these improvements may have a number of positive spillover effects that should be taken into account when assessing the overall impact of South-South RTAs.

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ANNEXES

Annex 1. Recent and Future Bilateral Trade Agreements

Legend:

ITALIC: *EU-induced agreements*
---------- New hub formation

TOTAL RTAs:	**76**
EU-induced RTAs:	37
Other new RTAs:	39

AFTA	CER
Andean Community	Mercosur
Australia	Singapore
Australia	South Korea
Bulgaria	*Estonia*
Bulgaria	*Latvia*
Bulgaria	*Lithuania*
Bulgaria	*Morocco*
Canada	Guatemala
Canada	Japan
Canada	Mercosur
CER	AFTA
Chile	Costa Rica
Chile	El Salvador
Chile	EU
Chile	Guatemala
Chile	Honduras
Chile	New Zealand
Chile	Nicaragua
Chile	Panama
Chile	Singapore
Chile	South Korea
Chile	US
Costa Rica	Chile
Croatia	*Hungary*
Croatia	*Morocco*
Czech Republic	*Estonia*
Czech Republic	*Latvia*
Czech Republic	*Lithuania*
Czech Republic	*Morocco*
EFTA	Mexico
EFTA	Singapore
El Salvador	Chile
Estonia	*Bulgaria*
Estonia	*Czech Republic*

Estonia	*Hungary*
Estonia	*Poland*
Estonia	*Romania*
Estonia	*Slovak Republic*
Estonia	*Slovenia*
EU	Chile
EU	Mercosur
EU	Mexico
EU	Singapore
EU	Slovenia
Fiji	Papua New Guinea
Fiji	Tuvalu
Guatemala	Canada
Guatemala	Chile
Honduras	Chile
Hungary	*Croatia*
Hungary	*Estonia*
Hungary	*Latvia*
Hungary	*Lithuania*
Hungary	*Morocco*
India	Sri Lanka
Israel	Mexico
Israel	*Romania*
Japan	Canada
Japan	Mexico
Japan	Singapore
Japan	South Korea
Jordan	US
Latvia	*Bulgaria*
Latvia	*Czech Republic*
Latvia	*Hungary*
Latvia	*Poland*
Latvia	*Romania*
Latvia	*Slovak Republic*
Latvia	*Slovenia*

Lebanon	UAE
Lithuania	*Bulgaria*
Lithuania	*Czech Republic*
Lithuania	*Hungary*
Lithuania	*Poland*
Lithuania	*Romania*
Lithuania	*Slovak Republic*
Lithuania	*Slovenia*
Macedonia	*Slovenia*
Mercosur	Andean Community
Mercosur	Canada
Mercosur	EU
Mercosur	Mexico
Mexico	EFTA
Mexico	EU
Mexico	Israel
Mexico	Japan
Mexico	Mercosur
Mexico	Panama
Mexico	Peru
Mexico	Singapore
Morocco	*Bulgaria*
Morocco	*Croatia*
Morocco	*Czech Republic*
Morocco	*Hungary*
Morocco	*Poland*
Morocco	*Romania*
Morocco	*Slovak Republic*
Morocco	*Slovenia*
Morocco	*Turkey*
Netherlands Antilles	Paraguay
New Zealand	Chile
New Zealand	Singapore
Nicaragua	Chile
Panama	Chile
Panama	Mexico
Papua New Guinea	Fiji
Paraguay	Netherlands Antilles
Peru	Mexico
Poland	*Estonia*
Poland	*Latvia*

Poland	*Lithuania*
Poland	*Morocco*
Romania	*Estonia*
Romania	*Latvia*
Romania	*Lithuania*
Romania	*Morocco*
Romania	*Israel*
SACU	Zambia
Singapore	Australia
Singapore	Chile
Singapore	EFTA
Singapore	EU
Singapore	Japan
Singapore	Mexico
Singapore	New Zealand
Singapore	US
Slovakia	*Estonia*
Slovakia	*Latvia*
Slovakia	*Lithuania*
Slovakia	*Morocco*
Slovenia	EU
Slovenia	*Estonia*
Slovenia	*Latvia*
Slovenia	*Lithuania*
Slovenia	*Macedonia*
Slovenia	*Morocco*
Slovenia	*Turkey*
South Korea	Chile
South Korea	Thailand
South Korea	Japan
Sri Lanka	India
Thailand	South Korea
Turkey	*Morocco*
Turkey	*Slovenia*
Tuvalu	Fiji
UAE	Lebanon
US	Chile
US	Jordan
US	Singapore
Zambia	SACU

Annex 2. GTAP Regional Codes and Their Definition

GTAP codes	NAME	Definition
Ausnz	Australia & New Zealand	Australia, New Zealand
Chn	China & Hong Kong-China	China, Hong Kong-China
Jpn	Japan	Japan
NICs	Newly Industrialised Countries	Korea, Taiwan, Philippines, Singapore, Thailand, Vietnam
Idn	**Indonesia**	**Indonesia**
Mys	**Malaysia**	**Malaysia**
Bgd	**Bangladesh**	**Bangladesh**
SEA	South Asia	India, Sri Lanka, Bhutan, **Maldives**, Nepal, **Pakistan**
NAFTA	NAFTA	Canada, United States, Mexico
LAC	Latin America and Caribbean	Latin and Central America, and Caribbean countries
WE	Western Europe	Western Europe (European Union and EFTA countries)
EE	Eastern Europe and FSU	Eastern Europe and FSU (Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia, Slovenia, Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan)
Tur	**Turkey**	**Turkey**
Xme	**Middle East**	Middle East (**Bahrain, Iran, Iraq**, Israel, **Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates, Yemen**, Yemen Democratic Republic)
Mar	**Morocco**	**Morocco**
Xnf	**North Africa**	Other North Africa **Algeria, Egypt, Libya, Tunisia**
SACU	SACU	Botswana, Lesotho, Namibia, South Africa, Swaziland
SSA	Sub-Saharan Africa	Sub-Saharan Africa (Angola, **Benin, Burkina Faso**, Burundi, **Cameroon**,

		Cape Verde, Central African Republic, **Chad, Comoros**, Congo, Cote d'Ivoire, **Djibouti**, Equatorial Guinea, Eritrea, Ethiopia, **Gabon, Gambia**, Ghana, **Guinea, Guinea-Bissau**, Kenya, Liberia, Madagascar, Malawi, **Mali, Mauritania**, Mauritius, Mayotte, **Niger, Nigeria**, Rwanda, Sao Tome and Principe, **Senegal**, Seychelles, **Sierra Leone**, **Somalia, Sudan**, Tanzania, **Togo**, Zaire, Zambia, Zimbabwe
Moz	**Mozambique**	**Mozambique**
Uga	**Uganda**	**Uganda**
Xrw	Rest of the World	Rest of the World (**Afghanistan, Albania**, Andorra, Bermuda, Bosnia and Herzegovina, British Indian Ocean Territories, **Brunei**, Burma, Cambodia, Christmas Island, Cocos (Keeling) Islands, Cook Islands, Croatia, Cyprus, Falkland Islands, Faroe Islands, Fiji, French Polynesia, Gibraltar, Greenland, Johnston Island, Kiribati, Laos, Macao, Macedonia, Malta, Marshall Islands, FS Micronesia, Mongolia, Nauru, New Caledonia, Niue, North Korea, Pacific Islands, Palau, Papua New Guinea, Pitcairn Islands, Saint Helena, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu, Wake Island, Wallis and Futura Isl., Western Samoa, Yugoslavia, French Guiana, Guadeloupe, Vatican Holy See, Martinique, Monaco, Reunion, Saint Pierre and Miquelon San Marino)

Legend: Countries in bold are OIC members, and potential members in the FATPS-OIC. Groups in bold are considered as FATPS-OIC members in the CGE simulations.

Annex 3. GTAP: Sectoral aggregation

Food:
Paddy rice, Wheat, Cereal grains, Vegetables, fruit, nuts, Oil seeds, Sugar cane, sugar beet, Plant-based fibres, Other crops, Bovine cattle, sheep and goats, horses, Animal products, Raw milk Wool silk-worm cocoons, Bovine cattle, sheep and goat, horse meat prods, Other meat products, Vegetable oils and fats, Dairy products, Processed rice, Sugar, Other food products, Beverages and tobacco products.
Other primary products:
Forestry, Fishing, Coal, Oil, Gas, Minerals.
Manufactures:
Textiles, Wearing apparel, Leather products, Wood products, Paper products, publishing, Petroleum, coal products, Chemical, rubber, plastic products, Other mineral products, Ferrous metals, Other metals, Metal products, Motor vehicles and parts, Other transport equipment, Electronic equipment, Other machinery and equipment, Other manufactures.
Services:
Electricity, Gas manufacture, distribution, Water, Construction Trade, transport, Financial, business, recreational services, Public admin and defence, education, health, Dwellings & Services.

Figure 5. Full FATPS-OIC scenario: trade effects

Source: GTAP database and authors' calculations.