

# Cooperation and Provision of Regional Public Goods: The IIRSA Case

*Ricardo Carciofi*

*Director of IDB-INTAL and Secretary of the Technical Cooperation Committee of the IIRSA.*

## *Summary*

*This article analyzes the Initiative for the Integration of Regional Infrastructure in South America (IIRSA) as a mechanism for intergovernmental cooperation. In particular, the paper explores the factors that explain why the process has been actively working since its launching in 2000. Also, the article addresses the question of why the infrastructure agenda has been able to make some progress and why its pace has been relatively independent of other dimensions of South American integration.*

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## *I. INTRODUCTION*

The Initiative for the Integration of Regional Infrastructure in South America (IIRSA) is an intergovernmental cooperation mechanism for the development of physical infrastructure with a view to strengthening integration in South America.<sup>1</sup> To this end, the Initiative seeks to promote projects in the sectors of transportation (in its various modalities), energy and telecommunications, as well as regulatory measures conducive to increased efficiency in the provision of all these services. Since its launching in 2000, IIRSA has achieved a series of results while arousing some controversy.<sup>2</sup> Although various studies have dealt with the Initiative, one of its attributes that has been mostly overlooked is its

continuity of work. In effect, this scheme has been kept in place on a sustained basis throughout the past seven years. Furthermore, its participating countries have formulated goals and action plans for the remainder of the present decade.<sup>3</sup> Even if continuity is not synonymous with effectiveness, the former aspect is particularly noteworthy not only because similar efforts have been short-lived but also because IIRSA has remarkably thriven on a minimal institutional structure and in the absence of a robust regional integration scheme.<sup>4</sup> It is well known that the Union of South American Nations (UNASUR - *Unión de Naciones Suramericanas*) as it has come to be known, is a fledging creation and does not yet have a regulatory framework that incorporates these endeavors.<sup>5</sup> In other words, IIRSA has succeeded in focusing its agenda of activities on the development of physical infrastructure and advancing it at its own pace, in spite of the changing conditions that characterize the general context of the integration process in the region.

The situation described above raises some questions that can serve as guidelines for the purpose of this paper, specifically, why has it been feasible to keep such an intergovernmental cooperation and coordination scheme in operation while South America has only just begun to make progress in a comprehensive project of regional integration? Why and to what extent has it been possible to further this physical integration agenda with relative autonomy from the other integration dimensions? The hypothesis explored here is that key to understanding IIRSA's continuity and cooperation process is, on the one hand, the appropriate identification of topics, which has allowed to garner consensus among the participating countries, and, on the other hand, the fact that the work agenda has been materialized in the form of concrete results that have proven useful to the participants in the Initiative as a whole.

We should now outline the methodological approach and the analytical perspective adopted in this paper. The development of integration infrastructure calls for considerations on the subject of geopolitics and international political relations. Although these dimensions obviously pervade IIRSA and their importance is recognized, the scope of this paper is confined to the economic dimension. This does not mean the implicit privilege or primacy of one topic over the other; it is simply a means to narrow down the topics under analysis to a more limited number of issues.

In an attempt to provide an answer to the questions posed above and within the previously delimited scope, this paper is organized as follows. Section II discusses some concepts deemed essential to understand how the cooperation scheme works. Sections III, IV and V delve into the main topics on which the cooperation process practice has been built. While the previously mentioned sections seek to explain the reasons why the Initiative has been able to make some progress and attain part of its objectives, Section VI highlights its limitations and pending challenges. Finally, Section VII presents the conclusions of the study.

## *II. CONCEPTUAL FRAMEWORK*

As mentioned at the beginning of this paper, IIRSA has been designed to spur investments and promote regulatory measures in the areas of transportation, energy and telecommunications for integration purposes. The usual economic perspective and rationale is that the different types of infrastructure entail capital formation and are hence a production factor that has a bearing on growth. This is a relevant consideration that various papers have analyzed in depth as applied to the case of Latin American countries (see Easterley and Servén [2003], Lucioni [2004] and ECLAC [2004a]). Viewed from this macro

and growth angle, the region has lagged behind other emerging economies. It has lower availability of infrastructure and, more specifically, a poorer quality of services derived there in comparison with other regions.<sup>6</sup> This being the case, studies have weighed the factors inhibiting a more expeditious development of infrastructure projects. As in most cases the implementation of this type of projects gives rise to natural monopolies, the most frequently attempted solution in Latin America has been public provisioning.<sup>7</sup> From this it follows that fiscal solvency has put limitations on investments in this type of projects and that recent endeavors have been made to overcome such limitations through the involvement of private capital.<sup>8</sup> Yet, it is evident that the obstacles hindering the implementation of infrastructure projects do not end there. Added to the above-mentioned limitations are, among others, the lack of savings, along with difficulties in harmonizing public and private presence in investments, securing long-term financing, and minimizing the uncertainty surrounding long term decision horizons in economies subject to high volatility in terms of relative prices and their real variables. Therefore, it is clear that one way or another and even in the case of countries taken separately, the development of infrastructure is heavily dependent on the context of governmental policies and decisions that serves as a framework of reference.

If infrastructure is approached from a perspective different from the macro dimension reviewed above, other economic consequences are brought to the fore in addition to the already mentioned impact of investment on growth rates. Irrespective of the technical features of each individual project and the typical modalities of the different sectors where the projects are implemented, infrastructures have a common denominator: they facilitate transportation and reduce its costs, whether it be for the physical movement of persons, goods, services, energy products or information.<sup>9/10</sup> This feature of infrastructure as an investment capable of modifying the equation of transportation costs has decisive implications for the location of economic activities, the facilities offered for attracting or expelling people, the impacts on the environment and, ultimately, the economic dynamics in the region. Hence the significance of all actions that influence the development of investment in infrastructure, and public policies, as explained below, in addition to ascribing importance to the other economic aspects involved in infrastructure projects, should also deal with their spatial impact.

The most recent literature on economic geography has been increasingly focusing its attention on the factors that trigger agglomeration and dispersion processes across the territory (Krugman [1998]). Among agglomeration forces, market size can be cited as an example, whereas some dispersion forces are the natural resources, the location of which is a feature of physical geography. Thus, in deciding their location, enterprises take into account the proximity to markets -in relation to both consumers and inputs- and, depending on the nature of their activity, the distance to (and supply costs of) natural resource-based commodities. Transportation costs and, as discussed above, the associated infrastructure play a key role in location-related decisions. One of the central conclusions that can be drawn from this type of analysis is that in the presence of economies of scale and at moderate levels of transportation costs, the location of an economic activity tends towards agglomeration.<sup>11</sup> A *core-periphery* pattern is therefore reinforced, with the core growing in population, income, employment and economic activity. As transportation costs decrease, the *periphery* can offer alternative locations that offset the benefits of physical proximity to the market, leading to a more balanced use of space.

As a result of these impacts, the development of infrastructure rebalances the centripetal and centrifugal forces behind locational decisions. This translates into an

additional component to public policymaking: the spatial or territorial dimension. The dispersion-agglomeration dynamics can be left to evolve freely or, on the contrary, can be explicitly included as an item on the public agenda. If the latter is the case, projects will probably draw the interest of local actors, sub-national governments, and, depending on the situation, the national government.<sup>12</sup> Naturally, this analysis should not be restricted to a one-dimensional reading. Even if infrastructure investments produce the previously mentioned type of effects on the territory or space involved, the allocation of capital for these investments does not prevent the feasibility assessment from being based on conventional criteria of socio-economic profitability and environmental sustainability. Whether private or public, a project can always find alternative resources. Nonetheless, an assessment of the relative advantage of a given project is very likely to have different readings depending on where its beneficiaries are located and whether there exist mechanisms for the geographic redistribution of the (social, economic and environmental) costs and benefits.

The foregoing discussion has stressed the major impacts that infrastructure has on space. The distance between the location of a project and its area of influence depends on the type of infrastructure concerned. A project may have far-reaching effects (for instance, in the case of gas pipelines or power transmission lines); conversely, its effects may be restricted to the immediate surroundings and its intensity may be lower as distance grows (for example, in the case of some types of road projects). In the case of network systems, the impact is more diffuse and extensive, spreading through the different networks nodes. Consequently, a project can be said to have "spillover effects" of costs and benefits on its area of influence.<sup>13</sup> Given that, as explained before, infrastructure projects generally result in situations of natural monopolies, regardless of whether they are publicly or privately funded, these projects must include regulatory components and constitute, in many cases, a peculiar category of public goods, which can be either national or local depending on their geographic scope of influence.<sup>14/15</sup>

On the other hand, the impact that infrastructure has on space becomes especially relevant if undertaken beyond the scope of a country's own territory. When infrastructure projects are implemented in border areas, their spillover effects can spread to the bordering regions of neighboring states. These states can be passive recipients or *free riders* of the benefits accruing to them from infrastructures that do not belong to them, or, if it is in their interest, they can boost these effects by making supplementary investments in their own territory.<sup>16</sup> A case in point is an integration project, in which investments are coordinated between two or more countries.<sup>17</sup> In an integration project, participants bear the costs of its implementation and, following previously selected criterion, distribute the resulting benefits.<sup>18</sup> Naturally, this does not imply that costs and benefits are strictly proportional to the investment made by each of the "partners" -i.e., there may be a compensation mechanism for the asymmetries inherent to the project.<sup>19</sup> Furthermore, there are a wide variety of modalities for the implementation of a project as well as formulas for the distribution of its costs and benefits. Thus, in the case of road projects, countries usually engage in the works within their respective territories; the coordination of actions is therefore more limited and may include execution schedules, regulatory aspects, border crossing facilities, etc. Alternatively, states can decide on the creation of "a (binational or tri-national) entity" to serve as the vehicle for the project and "to internalize" all the costs and benefits derived from its execution and operation. Regardless of the modality or formula chosen, it is undeniable that the implementation of integration infrastructure requires considerable coordination and cooperation between sovereign states. The menu

is broad and diverse, since it includes not only the distribution of costs and benefits but also the financial framework, the rules for managing the project, the mechanisms for the participation of private capital, if any, the mitigation of environmental impacts, etc. In short, implementing integration projects entails addressing the issues that are usually an integral part of infrastructure projects while adding the perspective of national states that decide, based on the mutual benefit principle, to cooperate and assume the responsibilities inherent to the type of project concerned. From the perspective selected for this paper, these new demands for cooperation point to a new type of public good of a regional nature in the sense that its implementation involves the participation of more than one sovereign state. The participation of the states is materialized not only in the final result, i.e., the physical works of integration infrastructure, but also in the previous cooperation process needed for completing the project. The next section further explores this point.

In addition to the foregoing considerations about the need for cooperation and coordination in physical infrastructure projects, this type of investment has two additional implications that in some way reflect their peculiarity. In the first place, if integration works and projects reduce transportation costs and, hence, modify the economic geography, trade barriers -whether tariff or non-tariff- represent a market access cost stemming from public policy-making. Therefore, it would be contradictory to make efforts to implement integration infrastructure while trade policies as well as processes that facilitate the creation and enlargement of the economic space beyond national borders do not support these efforts. Moreover, in line with what has been suggested in some papers, it can be argued that if market access facilitated by infrastructure is offset by trade barriers, agglomeration and concentration are more likely to occur in the most advanced regions (or country), to the detriment of peripheral regions (Venables [2005]).<sup>20</sup> Evidently, this type of obstacle is not present when investments are located within national borders, where by definition there are no tariff barriers to the movement of people (labor) and goods.

In the second place, in light of what has been discussed about the geographic spillover of net benefits and the effects of scale, the advantages of the integration process can become more extensive when progress across the economic space is jointly coordinated. This suggests how positive it is to promote a synchronized progress of as many countries as possible, in order to maximize the benefits derived from market size. This contention is also empirically supported. There is sufficient evidence and measurements through gravitational models indicating that, when controlled for economy size, the most crucial factor in cross-border trade, investments and technology flows is distance.<sup>21</sup> This is therefore a compelling argument to consider South America as a space suitable for integration -greater physical proximity is a factor that fosters growth through an enlarged market. And this effect is reinforced when infrastructure drives down transportation costs.

From the previously outlined framework of analysis, two aspects can be identified as key issues for the process of coordination and cooperation regarding the development of infrastructure. One is linked to the specific universe of projects and their implementation -i.e., the cost benefit analysis leading to the portfolio of projects, the adoption of a regulatory framework for their development and management, and decisions concerning the allocation of resources for their financing. The other aspect involves the tapping of market size and the economies of scale. The next three sections address these issues by analyzing how they have been resolved in the specific case of IIRSA and how they have come to be the backbone of a cooperation agenda that has encouraged the involvement of the countries participating in the initiative.

### III. COOPERATION AND REGIONAL INFRASTRUCTURE: PROJECT IDENTIFICATION AND REGULATORY HARMONIZATION

The purpose of this section is twofold. Firstly, it seeks to illustrate the work carried out by the Initiative both in the identification and selection of integration projects and in the harmonization of regulations relevant to their viability. Secondly, while touching upon these themes, it attempts to identify the factors that have made it possible to advance in this inter-governmental dialogue for cooperation.

Table 1 offers information on IIRSA's project portfolio: the number of projects by country and their respective investment amounts. It should be noted that of the almost US\$40 billion represented by the IIRSA's project portfolio total investment, binational projects account for 43.2%. Also, it should be borne in mind that there are other projects that are strictly national, with visible effects on physical integration -in effect, this is one of the criteria taken into account when assessing the eligibility of the project as part of the IIRSA's portfolio. Thus, almost half of the projects developed by the participating countries are integration projects and therefore entail some sort of joint undertaking by the parties involved (Table 1).

From this point of view, coordination and cooperation are undeniably important. Consequently, what are the dimensions inherent to this process? As mentioned earlier, the main feature of integration projects is that they involve decisions by two or more national sovereign states. To a great extent, their decisions are based on the benefits that can be expected from the project. As public and governmental presence is inescapable, it should be pointed out that what is at stake is not only economic but also political gains from the action concerned, whether for the central government or the local stakeholders more closely linked to the project.

In view of all the foregoing, an integration project faces a complex negotiation scenario, in which costs and benefits are seldom equally shared by all the countries and in which the economic and political resources available to each party are also asymmetrical. Moreover, it is necessary to take into account that the project construction period is directly proportional to its economic dimension, technical difficulties, environmental and social impacts, etc. In turn, the longer a project takes, the higher the uncertainty about that the project confronts and therefore reduce the present value of the net benefits. The context and its estimated benefits and gains calculated *ex ante* and are contingent to the projected scenario. As already noted, all these elements are inherent to the development of infrastructure -and all the more so when it comes to integration projects. For example, countries can have strong funded reasons to apply different discount rates in the same project, leading to different conclusions regarding the net benefits of the investment.

Similar -though very specific- considerations may be applied to the execution phase of a project, regardless of whether a project is directly financed by the public Treasury or with investments from Public-Private Partnerships (PPPs). In the cases in which both the execution and financing of an integration project are undertaken by the relevant public sectors, the countries concerned have a concurring interest in getting to know with as much accuracy as possible whether their partners' fiscal programming is compatible with the project completion schedule. Under PPP modalities, the countries involved have to agree on the rules under which private capital will be summoned to participate in the management phase. Whatever the case, the bottom line is the following: intergovernmental coordination is a prerequisite for the execution phase.

The previously discussed peculiarities and difficulties concerning infrastructure projects for integration purposes have not been an insurmountable obstacle to their completion, even in the absence of initiatives such as IIRSA. For several decades and with no overall integration framework, the region has had numerous experiences in binational projects -some with very ambitious objectives, such as the *Yacretá* or *Itaipú* hydroelectric plants and others with considerably simpler objectives, such as the integration of gas pipelines between Argentina and Chile, a project that did not encounter any problem during its physical development and yet has faced difficulties in terms of gas supply and contract performance.<sup>22</sup> IIRSA's distinctive feature is, by contrast, that it brings together all the countries in South America and joins them in a process that goes beyond the scope of bilateral interconnection works.

What, therefore, is IIRSA's specific contribution that motivates the countries' participation? The Initiative affords the possibility of exchanging information about investment programs and assessments conducted by individual countries on the most tangible benefits and costs. Consequently, it provides a mechanism that helps in the reduction of uncertainties and in the early detection of the type of externalities associated to each project. Although it may seem trite, it is worth pointing out that these multilateral dialogue fora on integration infrastructure were practically unprecedented in South America in the scale and scope as those by IIRSA. Furthermore, the procedure used by IIRSA for managing a short list of priority projects has been standardized in a "management-intensive system".<sup>23</sup> a software that connects on-line the 12 participating countries and is aimed at facilitating the management of the priority projects that make up the *Implementation Agenda based on Consensus* (AIC - *Agenda de Implementación Consensuada*).<sup>24</sup> Naturally enough, IIRSA's forum, its technical meetings and the formal and informal communications among its national coordination teams do not meet all the needs and are therefore far from satisfying the information requirements for the decision-making process typical of complex projects such as those related to integration. However, IIRSA provides governmental leaders with a forum conducive to dialogue, which is further reinforced through specific actions at technical level.<sup>25</sup> Once projects reach more advanced phases or enter the execution phase, relevant bodies and agencies step in to perform more detailed work.

The issue that follows is how valid the cooperation strategy is. In other words, what is the incentive that each country has in order to share information with the rest of the participants if it does not know for certain whether the other countries will furnish useful information to its own plans? The question is not easy to tackle though several points can be made. Firstly, IIRSA is not a "bilateral game" but rather involves 12 players of very different weight. The participation of these players -each one with very different strategies and resources, which, moreover, change with time- precludes non-cooperative attitudes, or, more precisely, the benefits from participating in the Initiative outweigh the associated costs. Secondly, a factor that contributes to facilitating the coordination mechanism is the presence of the Technical Coordination Committee (CCT - *Comité de Coordinación Técnica*). Albeit belonging to the countries participating in IIRSA, the CCT financing institutions operate with independent mandates and hence are in a position to contribute to consensus building. Finally, a third element that encourages intergovernmental work is that IIRSA's agenda is not merely restricted to the exchange of information on projects but extends to the field of regulations, planning and financial management. This enlarged work menu favors the continuity of the process.<sup>26</sup>

At this point we should pass on to the other key chapter on which IIRSA has focused its attention: the harmonization of sectoral regulations or *Sectoral Integration Processes*, to put it in IIRSA's words. Only in very few areas have regulatory frameworks been consistently applied across the regional sub-blocs currently in place in South America. It is probably the Andean Community (CAN - *Comunidad Andina de Naciones*) that has made the greatest progress in the fields of transportation and other trade-facilitating mechanisms. The Southern Common Market (MERCOSUR - *Mercado Común del Sur*), notwithstanding the considerable trade volume between its members, has made fewer regulatory advances on this front. IIRSA's aspirations to achieve greater regulatory harmonization in the South American space have encountered hurdles. In each of the areas, there are specialized agencies -generally coordinated with national counterparts- that have regulatory supremacy, in addition to the corresponding interest groups that may feel either favored or harmed. IIRSA's work has therefore consisted in detecting proposals and formulating suggestions that must then be channeled through the specific relevant bodies. However, for a proposal to be effectively adopted it must be incorporated into the national legislation concerned, an obstacle that has yet to be overcome.<sup>27</sup> A comparison between the efforts and results in the field of project identification and selection, including in some cases execution tasks, on the one hand, and IIRSA's capacity to create infrastructure regulations across the South American space, on the other hand, reveals clear differences. In the area of regulations, which is more intensive in terms of management and institutional agreements -which include their corresponding national statutory provisions and regulations-, IIRSA's process has not been effective. In this field there are limits to the process of physical integration that require to make further progress in other dimensions -i.e., political, economic and institutional spheres.

#### *IV. COOPERATION AND REGIONAL INFRASTRUCTURE: INVESTMENT AND FINANCING : ADDITIONAL REASONS FOR COOPERATION AND INVOLVEMENT IN IIRSA*

Since its inception IIRSA has been aware of the economic and financial difficulties facing the development of its projects. The difficult macroeconomic context prevailing in the region at the beginning of the decade, which was expected to last into 2003, demanded that countries make realistic economic commitments under the Initiative. These considerations were taken into account in the identification and selection of projects conducted by the countries.<sup>28</sup> As shown in Table 2, the total amount of IIRSA's projects represents 13.6% of total capital formation. The distribution by country is, however, very unequal, an issue that will be discussed later.

On the other hand, since IIRSA implies a long-term effort, the countries have attached high priority to the search for financial mechanisms and instruments suited to the purpose. Thus, the Initiative has pushed three lines of action: the adoption of PPPs for the development of projects, the search for "fiscal margins or room" to accommodate public investment in the budget, and, finally, the design of financial instruments tailored to IIRSA's needs.

#### PRIVATE PARTICIPATION IN THE DEVELOPMENT OF INFRASTRUCTURE

Countries have been adopting a wide variety of approaches to private sector involvement, depending on the characteristics of their own domestic economic context. Thus, Chile and Peru, for instance, having had some experience in PPPs, applied this

solution to several projects in the portfolio.<sup>29</sup> Brazil, in turn, passed novel legislation on the subject so as to make it possible to support projects that could not be financed by its budget. Argentina, conversely, after having advanced at an accelerated pace in the privatization and concession of public utilities in the nineties, leant once again on public financing, laying down in each case and according to the project involved, the modalities for private sector participation.

Regardless of the peculiarities of each country, the adoption of these kinds of partnerships has proved useful to all the participants. As the countries adopt PPP models for the development of their infrastructure, both public and private sectors gain better insight into this type of contract scheme. This broadened knowledge can in turn be applied to integration projects that, as discussed before, are more complex because of their cross-border impacts. And, indeed, IIRSA's efforts in this direction have tended to stimulate the dissemination of knowledge and exchange of experiences in relation to schemes involving private participation in infrastructure investments. Specifically, contributions have been aimed at exploring how PPP modalities can be applied to multinational projects.<sup>30</sup> In addition, efforts have not been merely restricted to studies. In fact, several projects currently in execution, funded by the Inter-American Development Bank (IDB) and the *Corporación Andina de Fomento* (CAF) have adopted these mechanisms.<sup>31</sup>

#### "FISCAL MARGIN" FOR PUBLIC INVESTMENT

In any case, the potential for the application of private participation mechanisms in the development of IIRSA's projects is limited. The public budget plays a prominent role. On the one hand, the concession of projects requires guarantees or subsidies that constitute actual or contingent public expenditure. On the other hand, there are multiple situations in which the most effective instrument is public investment. Since IIRSA's inception, several countries participating in the Initiative have raised at various international fora their concern that macroeconomic considerations, in this case the level of the public debt, ultimately affect capital formation in infrastructure and hence growth.<sup>32</sup> The most compelling pronouncement was made in 2004, during the Annual Meeting of the IDB's Board of Governors, at which the Ministers of Finance from eleven countries in Latin America, most of them from South America, signed what is known as the "Letter of Lima" (SELA [2004]). The document voices concern about the quality of infrastructure in the region and the impact of fiscal control on public investment. This statement, publicly issued on consensus by the highest ranking officials responsible for economic and financial management in the South American countries, warns about the risk of creating a vicious circle: accounting methods of fiscal sustainability could lead to perpetrating the weakness resulting from insufficient investments and the ensuing poor economic growth.<sup>33</sup> The text of the Letter places a special emphasis on regional integration projects, showing interest in IIRSA's progress.

These claims were particularly targeted at the International Monetary Fund (IMF), given that the level of fiscal imbalance and the sustainability of public debt are variables closely followed in the case of Fund-supported programs.<sup>34</sup> For this reason, it is necessary to find a fiscal "margin or room" to authorize items of capital expenditure in the budget. This political claim did not go unheard and actually had its echo in the IMF. The IMF's Executive Board thoroughly discussed the issue and commissioned studies to clarify conceptual aspects and make proposals of economic policies (IMF [2005]). The debate has helped cast light on several concepts while suggesting some criteria for application: insistence on the appropriate assessment of public projects, identifying fiscal

margins to make room for investment; taking into account the effect of the investment on the national net worth (asset building) and not only on spending and debt; the need for keeping an adequate record of any contingent obligation assumed by the public sector when adopting risk-mitigation mechanisms for the private sector, among others (ECLAC [2004b]). Appropriate accounting criteria as well as transparency in the disclosure of information have economic advantages for obtaining public financing in the markets, thus leading to a reduction of costs in gaining access to financial resources.

The improvement of the macroeconomic situation in South America in the past three years has contributed to consigning these issues to oblivion, as if they had taken place in a remote past. However, it seems advisable to keep an appropriate record of the underlying economic issues because this problem has not lost its currency. Lessons drawn from the eighties and nineties show, firstly, that in times of fiscal constraints, adjustments in spending fall more than proportionately on investment and, secondly, that private investment in infrastructure prove insufficient to fill the vacancy left by public investment. From 2003 onwards, economic recovery in the region has been accompanied by greater fiscal solvency (ECLAC [2006]). However, few countries manage their public finances in a countercyclical manner.<sup>35</sup> Therefore there is a risk that in case of a slowdown in growth fiscal concerns may resurface again. Consequently, in order not to repeat past episodes, it is necessary to ensure, among other instruments, a careful selection of public projects and, as indicated above, private capital investment in the development of infrastructure.

#### INNOVATIVE FINANCING MECHANISMS

We will now pass on to the third subject announced at the beginning of this section -the development of innovative financial instruments and how they have served as an incentive for the countries to participate. An introductory observation about the context will shed some light on the scope of this question. IIRSA was launched at a time when the region was undergoing financial turbulences -hitting Asian countries in the late nineties- followed by economic crises of unprecedented magnitude that shook great part of South America: Brazil (in 1999), and Argentina and Uruguay (from 2001 onwards). The default on the Argentine debt involved the region even further and contagion effects were feared. Against this backdrop, it was difficult for countries to find access to financial markets in the scale and timeliness needed to spur investment in infrastructure, foster growth and boost domestic demand. Resorting to the adoption of innovative financing instruments was a formula which different international circles started to advocate. The documents discussed at the International Conference on Financing for Development held in Monterrey in 2002 illustrate the type of concerns experienced by governments. In the political arena and at the Latin American level, the Cusco Declaration, issued by the Rio Group in 2004, also provides an insight into the interpretations entertained in Latin America (United Nations [2002], ECLAC [2001] and Rio Group [2003]).

In IIRSA's specific case, the search for "innovation" in financing acquired multiple forms but mainly three directions were pursued. In addition to the two directions already explained above -private sector involvement and fiscal margins for public investment- a third path was followed: the search for a vehicle that allowed the funding of integration projects by forging partnerships between countries while minimizing the impact on public finances.<sup>36</sup> With the design of this instrument, eminently legal in nature, the Initiative sought to surmount a difficulty that cannot be easily overcome when resorting to multilateral banks. These institutions provide financing with sovereign guarantee through

their public windows.<sup>37</sup> However, the existing loan facilities have fiscal impact even in integration projects.<sup>38</sup> Among proposals intended to lift this restriction, there was one that was formulated with some detail -namely, the proposal for the establishment of a South American Infrastructure Authority (ASI - *Autoridad Sudamericana de Infraestructura*).<sup>39</sup> This would be a multilateral entity, whose capital would be made up of the countries' contribution and whose assets would comprise the concessions (projects) granted by the partners. Therefore, this entity would be entrusted with the development of the projects -from obtaining their financing to the subsequent management of the concession. The appeal of this scheme was that, operating as a "regional mega-concessionaire", this entity would be in conditions to develop projects, attracting funds with a minimum impact on the partners' fiscal accounts.<sup>40</sup> The ambitious nature of the project, the uncertainty surrounding access to financing and the inherent complexities of the institutional and legal design made it difficult to build consensus for the launching of the scheme. Other mechanisms also examined in IIRSA have been the creation of guarantee funds, styled after the Multilateral Investment Guarantee Agency (MIGA) of the World Bank, with capital from the countries. Except for institutional governance, it is not clear, though, whether these instruments would represent an innovation to the ones already offered by multilateral banks.

## ASYMMETRIES

A careful review of this background and the deliberations pursued in this respect reveal that under the innovation umbrella the Initiative has also attempted to resolve, albeit indirectly, another issue reflected in the data of Table 2: the completion of integration projects included in IIRSA's portfolio entails, as suggested at the beginning of this section, significant differences in investment efforts. As can be seen in Figure 1 (and Table 3), there is a markedly inverse ratio between investment efforts and *per capita* income level. More precisely and drawing on the existing literature on the subject, these differences can be attributed to "structural asymmetries" -in this case due to geographic and economic reasons.<sup>41</sup> On the one hand, it is striking that IIRSA has not paid explicit attention to the dimension of asymmetries involved in the physical integration agenda. As it is well known, in advanced processes of deep integration such as the European Union (EU), the compensation of asymmetries and physical integration have advanced in tandem.<sup>42</sup> On the other hand, the answer to the question of why this issue has not taken root in IIRSA is pretty straightforward when considering what has been pointed out at the beginning of this study: at a certain point, precisely when getting to the very core of integration, issues exceed physical infrastructure. In this regard, MERCOSUR is a case in point. Fifteen years after its inception, its member countries have decided to recognize and address the issue of asymmetries.<sup>43</sup> And they have reached this point after having put in practice an integration project tackling the various angles previously mentioned, including the legal dimension (Treaty of Asuncion). These elements have not yet been crystallized in the entirety of South America; in any case, this would be the convergence point if the agreements of CAN and the MERCOSUR merged, within Latin American Integration Association (ALADI - *Asociación Latinoamericana de Integración*)'s framework (ALADI, MERCOSUR and CAN [2006]).

The reasons expressed in this section take the same direction as those discussed in Section III: they reinforce the idea that member countries have seen some advantages in participating in the Initiative. IIRSA has been explicitly concerned with exploring financing mechanisms for the development of infrastructure. Efforts have focused on three lines of action that, as seen before, have been quite active, have generated an intense debate

among the participating countries and have created expectations of varying ambition and depth depending on the topics and circumstances. When these actions are put into context, it should also be noted that the countries have acted in relation to their proposals for the financing of infrastructure within IIRSA's framework, in sync with positions expressed at other fora. From this perspective, the analysis undertaken above makes it possible to identify reasons, several of them quite powerful, that explain why IIRSA has been able to sustain and encourage the cooperation scheme among its participating countries, and why they, in turn, have found the Initiative to be an effective forum in the furtherance of their objectives. In addition to participating in the debate and formulating proposals in the financial dimensions of the Initiative, the IDB, CAF and the Financial Fund for the Development of the River Plate Basin (FONPLATA - *Fondo Financiero para el Desarrollo de la Cuenca del Plata*), acting as the Initiative's technical coordination body (CCT), have brought about some advantages, not only of financial nature. In effect, the countries perceive that they rely upon these institutions' financial arms as leverage for dialogue, in addition to their specific contributions and facilities with tangible returns.<sup>44</sup>

## V. COOPERATION AND INTEGRATION OF REGIONAL INFRASTRUCTURE: *THE POTENTIAL MARKET*

The analysis conducted in the previous two sections has unveiled a rather broad range of arguments that suggest that IIRSA's work has turned out to be, from different angles, an attractive proposal for the countries: the gains associated with participation have outweighed the ensuing costs, and this has contributed to its continuity. Nonetheless, it is proper to wonder whether it is possible to ascertain the economic impacts of physical integration in South America. In order to do so, it's convenient to have an indicator to gauge the size of the market whose access would be facilitated as a result of the development of works breaking down the natural barriers erected by geography.

A concept that comes fairly close to this idea is to measure the potential market size. This is a very simple indicator, propounded by geographers interested in economic issues, which has become fairly widespread.<sup>45</sup> It is a ratio between the size of the economy (of potential target markets) and distance. Table 4 presents the data for countries in South America, which then serves as a benchmark for other regional blocs: the North American Free Trade Agreement (NAFTA) and the EU. Several interesting remarks can be made. In the first place, it is clear that for smaller economies, such as Guyana and Suriname, third markets play a decisive role. At the opposite extreme, in the case of countries such as Argentina and Brazil, it is their own markets that have the highest share -specifically, in the case of Brazil, the home market accounts for 60% of the total potential of the four markets here represented. In the second place, as to the two landlocked countries, Bolivia and Paraguay, by reason of their strategic geographical location, the South American market is the one that ranks first in importance. In the third place, one should take note that a simple average of the share that the twelve countries have in South America (18.75%) is lower than the share they have in extra-regional markets.

As noted above, the simplicity of the indicator used forewarns caution when interpreting its results. The first and most obvious warning is that this measure does not take into consideration any restrictions to market access. If the denominator of the index included levels of tariffs (or non-tariff barriers), the resulting figures would be different.<sup>46</sup> The second caveat is that this is a physical measure in the sense that it is based on the

distance and not on freight costs. The third limitation is that it does not take into account other economic considerations except for the market size; in other words, no supply or demand variables are assumed. And, finally, it should be borne in mind that not all of IIRSA's projects are exclusively intended for intra-regional trade and economic activity.

Rather, the indicator shown in Table 4 provides an additional perspective in relation to the discussion in previous sections. Firstly, it shows that there is a significant difference in the weight of the market potential that the South American space has to offer to each of the countries and hence in the economic interest that it arouses in them. Clearly, for the larger countries in the region, the South American market seems, under this measure, less relevant. However, as it is well known, it is precisely the bigger economies that sell their manufacturing exports in regional market. In turn, smaller countries are more attracted to the potential markets offered by the other partners. In this way, physical integration of the regional space is of supplementary interest for all countries regardless of their size. Secondly, as it has been noted since the beginning of this paper, it is also evident that IIRSA's appeal is enhanced as long as the development of infrastructure is in tandem with the rest of the integration and trade agenda. This is the means that assures reaping the benefits of operating on a regional scale. This observation is in no way new in the Latin American experience: a rich literature -starting with Prebisch, and nourished from then on by the advocates of regional integration- has suggested the appropriateness of tapping economies of scale in the bloc as a means to gain efficiency and competitiveness in the world market. It is obvious that in order to materialize this into results, it is necessary to eliminate the barriers to market entry, facilitate the movement of factors and reduce the asymmetries within the bloc. In sum, the available data on the market potential within South America makes sense of the integration efforts through the improvement of physical infrastructure as long as the other policies and instruments are aligned in the same or a similar direction.

## VI. PENDING CHALLENGES

This paper has discussed in some detail the reasons why the cooperation and coordination mechanism adopted by IIRSA has drawn interest in member countries. The Initiative's progress and continuity prove that the initial proposal has not gone unnoticed. Indeed, IIRSA has produced in the past few years the results envisioned within its objectives (Annex). An assessment of these achievements falls outside the scope of this paper. The purpose of this final section is to discuss the major challenges confronting the Initiative. This is a way of exploring the scenario that IIRSA will face in the coming years and the validity of the proposal for the development of physical infrastructure, in light of the progress made so far.

It seems clear that the main challenge is related to the issues discussed in previous sections and constitute the central question that has run through this paper: Why has the cooperation scheme embodied by the Initiative managed to remain in place over the past years? It was pointed out that the continuity of intergovernmental cooperation depends on the capacity to establish an agenda from which it is clear that participation in the Initiative has net benefits *vis-à-vis* non-participation. Thus, for instance, the absence of results, the thematic irrelevance, the incapacity to build consensus among all the members are factors that could lead to the failure of the scheme. Moreover, countries and their governments, which are ultimately the actors that play the primary role of leading the project, will feel drawn to work around these issues in so far as other interest groups -whether at the local or national levels- can perceive that the advance of the projects is being correlated with tangible

positive results. It is therefore reasonable to expect that, as physical integration advances and materializes into results, the process will come up against difficulties and opposition. The measure of success will be determined by the capacity to surmount such obstacles. There are no major differences from any other field of public policy: the intergovernmental character of the process adds certain elements, but does not diminish the need for getting results.

Throughout these years, IIRSA has had the virtue of including in its agenda topics of great appeal preserving the focal point. This was due to the consensus that attended to the diversity of interests and the resulting necessary counterbalances. On occasion, the call was organized according to expectations -as in the case of issues related to financing- and in other cases on the basis of concrete results concerning projects of common interest. These similar ingredients should determine the continuity of the process.

Finally, outside IIRSA's specific scope lies another challenge. As pointed out several times in this article, the physical integration agenda gains true significance in a context of deep integration. In this regard, although it is still too early to foresee the scenario, IIRSA cannot detach itself from the paths followed by the process in South America -in its political, social, economic and trade-related dimensions. After the first steps taken in these past two years since the creation of CSN-UNASUR, there is enough evidence showing the existing difficulties for convergence. The official enthusiasm is offset with the words of caution given by not few analysts (Bouzas, Da Motta Veiga and Ríos [2007]). The infrastructure agenda is specific enough to contribute to the integration process. On the other hand, this agenda also raises issues that can be as thorny as those detected in the economic or trade-related fields.<sup>47</sup>

In the best-case scenario, marked by progress in the integration of South America, IIRSA would very likely be assimilated into and articulated under the general scheme. In such a case, the institutional design of the Initiative, which has so far proven to be very effective, should be readapted. In this situation, one of the features discussed in the previous sections will very possibly become more noticeable: the asymmetry in investment efforts. On the other hand, in a different scenario, characterized by a slower South American integration and still undefined boundaries and depth, IIRSA might have to push a line of action similar to the one known so far. In this context, its current institutional design would be appropriate: its low-cost structure; countries active participation assures the suitability and relevance of the agenda; and finally the presence of financial institutions, facilitates technical inputs and access to the financial resources required for the investments. In any case, the subsequent challenge is whether IIRSA can remain a consistent scheme with the capacity to bring interests together. These attributes will require constant validation. Countries and governments would surely be inclined to provide this support as long as results are attractive enough.

## *VII. CONCLUDING REMARKS*

From the analysis it follows that South American countries have been genuinely interested and effectively involved in IIRSA. Since its launching in 2000 this mechanism has helped to materialize results in terms of the integration of physical infrastructure. This being the case, cooperation has thus been a sort of public good facilitating the coordination of decision-making process by the national states. To the degree that tangible benefits are identified, governments demonstrate willingness to participate in the Initiative. The thesis argued in this paper is that the search for consensus on the formulation and focus of the agenda stimulate the process.

The analysis of this paper has not covered the entire ground. There are several directions that could be explored further by future research. In the first place, it seems adequate to review and assess the objectives achieved so far, the benefits that will be reaped from several of the already initiated projects and the deficiencies that could be foreseen in the future. This assessment could be conducted for the Initiative as a whole, targeting its general objectives, or, rather, it could be focused on certain projects in particular. In the second place, it would be interesting to ascertain whether the projects would have a visible impact on the distribution and location of economic activity, to what extent they could modify spatial dynamics and how they are appraised by actors in their area of influence. Lastly, the correlation between the general progress of the integration process in South America and the development of infrastructure constitutes, as already noted here, a matter of ongoing currency that gives rise to several questions. Will the region evolve towards a deeper integration scheme? And, if so, in which directions? How could the lessons drawn from IIRSA be exploited and reinforced? What would happen to infrastructure in the context of a regional scenario that proceed at slow pace towards deeper integration arrangements?

## Notes

<sup>1</sup> Background information about IIRSA, mainly with regard to its institutional structure, spatial planning, and project selection, can be found on IIRSA's website (<http://www.iirsa.org>). In addition, there are official documents from the countries and institutions forming part of the CCT; see, for instance, IDB [2006]. Of course, the other IIRSA-related articles in this issue also provide a useful frame of reference for analysis. Details and particulars about these aspects will not be commented upon here; for further information, refer to the cited sources.

<sup>2</sup> Major objections to IIRSA so far have come from environmentalist groups concerned about the general impact of the proposal and, at times, from local actors that oppose some projects in particular. See Killeen [2007]. IIRSA's major achievements are briefly presented in the summary table included in the Annex.

<sup>3</sup> For IIRSA's goals for the 2006-2010 period, see the Minutes of the Executive Steering Committee -the ministerial body that leads the Initiative- for the meeting held in December 2005, in Asunción, Paraguay (<http://www.iirsa.org>).

<sup>4</sup> The Initiative had its origins in the South American Presidential Declaration made in Brasilia, Brazil, in 2000. From then onwards, IIRSA's work and action plans are approved at ministerial meetings held annually. The bulk of the technical work is carried out at intergovernmental meetings attended by representatives from each country (*national coordinators*). For further information on IIRSA's institutional structure, visit [http://www.iirsa.org/acercadeiirsa\\_ENG.asp?CodIdioma=ENG](http://www.iirsa.org/acercadeiirsa_ENG.asp?CodIdioma=ENG).

<sup>5</sup> It should be noted that the Declarations of the South American Community of Nations in 2005 and 2006 have publicly acknowledged IIRSA's accomplishments (<http://www.cumbresudamericana.bo/armado.htm>).

<sup>6</sup> South America ranks in 83<sup>rd</sup> place (out of a total of 124 positions) in the infrastructure pillar of the Global Competitiveness Index (GCI) compiled by the World Economic Forum (<http://www.wef.org>).

<sup>7</sup> The term natural monopoly is used for economic activities that are supplied more efficiently by one firm: the market can be served at minimal average costs by one productive unit. Historically, the formation of public enterprises in the region can also be attributed to strategic considerations and, in general, to the characteristics of the State-led industrialization process.

<sup>8</sup> Contractual forms are varied -management contracts, build-operate-transfer (BOT) arrangements, and so on- and are generally referred to as Public-Private Partnerships (PPPs).

<sup>9</sup> Strictly speaking, this reduction in transportation costs explains why infrastructure, when seen from an aggregate view, has a positive impact on the rate of economic growth.

<sup>10</sup> IIRSA's definition of projects does not explicitly provide for investment in urban networks (for the distribution of either potable water or electrical power) directly intended for household consumption. From a practical point of view, this is a reasonable decision. However,

this does not preclude that the development of the other modalities of infrastructure should be supplemented with this type of investments. A case in point would be transportation projects requiring investment in urban development for towns located in border areas.

<sup>11</sup> Location models also take other factors into consideration: the magnitude and diversity (in terms of skills) of labor markets in the region, the potential for tapping geographically localized external economies (leading to clustering) as opposed to land rent, location diseconomies and congestion, which are factors that favor dispersion. See Krugman and Venables [1995].

<sup>12</sup> This is one of the reasons why national and sub-national legislations frequently provide for public consultation mechanisms prior to the governmental approval of an investment project.

<sup>13</sup> These "spillover effects" constitute an externality that can impact positively or negatively in the region.

<sup>14</sup> The existence of wide-ranging geographic impacts accounts for the fact that infrastructure regulatory jurisdictions also cut across different governmental levels. Typically, investments in transportation networks -road construction, electricity, gas pipelines, etc.- fall within the national (federal) jurisdiction while projects having a narrower scope are incumbent upon local governments (municipalities, provinces, etc.).

<sup>15</sup> It has to be noticed that even when under public provision and control, a natural monopoly is not necessarily a public good. Public goods are those provided with constant marginal costs and where is difficult or impossible to exclude the consumer. In the case of many infrastructure projects, exclusion is possible and there are growing marginal costs. In such cases, the services usually are financed through tariffs paid by the consumers. However, in the case of some projects, it is inadvisable or highly costly to design user "exclusion" mechanisms, for which reason financing cannot be obtained through charges (tolls and fares), and it is necessary to turn to taxes.

<sup>16</sup> The article co-authored by Cárcamo and Goddard in this issue explores this subject based on an analysis of the game theory.

<sup>17</sup> For the purposes of this paper, the term "integration project" refers to a scheme entailing the explicit coordination of actions between two or more countries. Clearly, as explained in the text, a domestic project subject to strong externalities from a neighboring country influences the integration process in the territory or space involved.

<sup>18</sup> The paper by Beato included in this issue of the journal makes a more detailed analysis of these features of integration projects.

<sup>19</sup> The compensation of asymmetries in integration processes is an issue studied at length in the literature. The text refers to compensations destined to balance the uneven appropriation of the net benefits of an integration project among participant countries. Later, Section IV returns to the asymmetric topic.

<sup>20</sup> Strictly speaking, this author refers to incomplete integration processes the elimination of tariff barriers is just one factor leading to deeper integration.

<sup>21</sup> Several studies have found that the greater the distance between two economies, the fewer their trade interactions (investments and technology). (See Crafts and Venables [2001] pp. 7-8).

<sup>22</sup> The article written by Navajas featured in this issue discusses in detail the difficulties encountered in the gas pipeline integration between Argentina and Chile.

<sup>23</sup> For a detailed explanation on the Strategic Management Information System (SIGE - *Sistema de Información para la Gestión Estratégica*), visit <http://www.iirsa.org>.

<sup>24</sup> For details on AIC, visit <http://www.iirsa.org> and IDB website [2006].

<sup>25</sup> In fact, the SIGE has been designed as an instrument intended for officials with different levels of responsibility to access information. This system is geared towards an increased interaction between the managers of integration projects, thus facilitating communication and management.

<sup>26</sup> IIRSA has adopted four lines of institutional action for the 2006-2010 period, namely: implementation, comprising project preparation and execution tasks; sectoral processes, covering sectoral regulation and the preparation of proposals in this regard; planning, including the identification of projects and their environmental, productive and logistic impacts; and, finally, outreach activities.

<sup>27</sup> Thus, for instance, one of the topics to which IIRSA has allocated great resources has been the study of problems affecting border crossings and the critical factors influencing their efficiency. However, in spite of the technical efforts made by IIRSA, little progress has been made in the streamlining of border crossings and the consistent adoption of statutory regulations is far from being achieved.

<sup>28</sup> For the selection of projects to be included in the portfolio, IIRSA has applied a method that captures the attributes of each group of projects in terms of their impact on regional development and integration, and the feasibility conditions for their implementation (IIRSA [2004]).

<sup>29</sup> The articles by Cipoletta Tomassian and García Picasso included in this issue address, respectively, the Chilean and Peruvian experience in the application of PPPs.

<sup>30</sup> See the work pursued by IIRSA in relation to the Sectoral Process for Financing Instruments (<http://www.iirsa.org>). More specifically, refer to CAF [2002] and the *Grupo de Analistas Financieros Internacionales* (2002).

<sup>31</sup> The Implementation AIC comprises 31 projects, for a total amount of US\$6.9 billion; of this group, 14 projects are being executed under some PPP modalities (IDB [2006]).

<sup>32</sup> There are records that the subject was under consideration at IIRSA's initial meetings. See the Minutes of the Executive Steering Committee (CDE - *Comité de Dirección Ejecutiva*) entered in 2001 in Buenos Aires (<http://www.iirsa.org>).

<sup>33</sup> From the technical point of view, the difficulty lies in the fact that the fiscal sustainability analysis monitors the public debt without taking into account as part of the

measurement the new assets acquired as a result from the investment process. The amount of the net debt is therefore lower if these assets are entered in the accounts. Yet, as most of these assets are not liquid, their accounting is questionable if the purpose is to evaluate the financial impact of public liabilities and the capacity for repayment.

<sup>34</sup> Hemming and Ter-Minassian [2005] explain that the issues raised by several Latin American countries led the IMF to study the problem in more detail, both from the conceptual point of view and through case studies. Tanzi [2004], in a paper prepared for the IDB and also in relation to the case of integration projects, presents a series of arguments warning about the difficulties in allocating public budget to investment projects of complex execution and great scale. Both studies reveal that the intensity of the debate on fiscal policy, its macroeconomic impacts, and its consequences on long-term growth was very intense during the early years of the decade and was also linked to the concerns that countries experienced over the development of integration infrastructure. IIRSA was an important topic in the debate.

<sup>35</sup> Chile applies macro-fiscal rules in those cases in which annual spending policies are determined according to the calculation of revenues resulting from the calculation of the potential output (structural balance). For more details, see Marcel *et al.* [2001] and Ter-Minassian [2006]).

<sup>36</sup> The documents from the October 2004 meeting of IIRSA's Executive Technical Group on the Sectoral Process for Financing Instruments are an accurate example of the nature of discussions that were then being held on this subject by governmental representatives in the areas of finance and infrastructure. As can be seen in the work agenda, the meeting was convened "to propose, discuss, and analyze solutions promoting the funding of IIRSA's Strategic Project Portfolio and to agree on actions to be implemented in the short- and medium-term" (emphasis added), <http://www.iirsa.org>.

<sup>37</sup> They also have a private window, with no sovereign guarantee, which in the case of IDB, for example, was originally designed in the nineties to grant loans to the private sector. One of the main purposes of this facility was to support the development of infrastructure arising from the concessions and privatizations carried out in the period.

<sup>38</sup> As explained above, the formulas applied in the region have resorted to the formation of "binational entities". The requirement of sovereign guarantees, however, entails that multilateral loans be taken out by the entity's member countries and invested in the agency itself. For public accounting purposes, this is a financial investment, covered by multilateral financing, which has an impact on the treasury and increases the fiscal deficit (if its effect on the national net worth is not taken into account).

<sup>39</sup> The technical proposal, its economic rationale and legal framework were analyzed at a meeting held by the deputy ministers of economy and finance of IIRSA's member countries on October 27, in Lima, Peru (see GTE [2004]).

<sup>40</sup> Public spending was thus limited to the capital contribution (*paid in*) and the eventual granting of subsidies or special guarantees to the projects chosen by the country.

<sup>41</sup> For a discussion on asymmetries in integration processes, see Bouzas [2005] and Giordano *et al.* [2004].

<sup>42</sup> The EU has allocated 347 billion of euros to its Cohesion Policy for the 2007-2010 period, of which 282.8 billion of euros are assigned to the objective of convergence of less developed countries and regions.

<sup>43</sup> The selected instrument has been the creation of the MERCOSUR Structural Convergence Fund (FOCEM - *Fondo de Convergencia Estructural*) (INTAL [2005]).

In any case, funds allocated to the FOCEM have proved negligible in comparison with those assigned by the EU. In *per capita* terms, resources for the FOCEM amount to US\$0.43 per year while allocations under the EU Cohesion Policy are at around US\$114 annually for the 2007-2013 period.

<sup>44</sup> The IDB and CAF have offered a facility for the preparation of IIRSA's projects that amounts to US\$20 million and US\$50 million, respectively. The facility is non-reimbursable and hence represents a subsidy for the preparation of projects. Additionally, the CCT institutions allocate funds from their own budget to the execution of IIRSA's annual work program. The IDB estimates that since its creation it has invested in this regard US\$10 million (IDB [2006]).

<sup>45</sup> See Harris [1954] and, for a recent application to the MERCOSUR case, see Sanguinetti [2006] and Terra and Vaillant [1997].

<sup>46</sup> The article by Mesquita Moreira featured in this issue presents comparative indicators of transportation costs and tariffs in South America.

<sup>47</sup> A case in point of the foregoing is the different paths followed by energy integration in the past years in South America.

Table 1

IIRSA'S PROJECTS: NUMBER OF PROJECTS, INVOLVED AMOUNTS AND EFFECTS ON INTEGRATION						
Country	Total Projects		Binational Projects		Effects on Integration	
	Number <sup>a/</sup>	Amount <sup>b/</sup>	Number <sup>c/</sup>	Amount <sup>d/</sup>	Number <sup>a/</sup>	Amount <sup>b/</sup>
		In US\$ Billion		In US\$ Billion		Percentage
	(1)	(2)	(3)	(4)	(5)=(3)/(1)	(6)=(4)/(2)
Argentina	63	6.257	22	3.241	34.9	51.8
Bolivia	40	8.025	25	4.218	62.5	52.6
Brazil	66	11.563	26	5.300	39.4	45.8
Chile	29	1.145	9	0.243	31.0	21.2
Colombia	35	0.848	27	0.166	77.1	19.5
Ecuador	35	1.035	26	0.547	74.3	52.8
Guyana	17	0.263	6	0.260	35.3	99.2
Paraguay	29	3.649	14	1.708	48.3	46.8
Peru	65	3.987	28	0.754	43.1	18.9
Suriname	8	0.166	3	0.075	37.5	45.2
Uruguay	14	0.822	5	0.412	35.7	50.1
Venezuela	25	1.426	23	0.199	92.0	13.9
<i>Total</i>	<i>426</i> <sup>e/</sup>	<i>39.185</i>	<i>214</i>	<i>17.122</i>	<i>50.2</i>	<i>43.7</i>
<i>Simple Average</i>	<i>35.5</i>	<i>3.265</i>	<i>17.8</i>	<i>1.427</i>	<i>50.9</i>	<i>43.2</i>

## Notes:

<sup>a/</sup> Total number of a country's projects in IIRSA's portfolio (including binational projects).

<sup>b/</sup> Total amount of domestic and binational projects.

<sup>c/</sup> Number of a country's binational projects in IIRSA's portfolio.

<sup>d/</sup> The cost of integration projects results from assigning to each country half of the cost of the bilateral project.

<sup>e/</sup> The total number of projects in IIRSA's portfolio as of the date of this study is 338. The difference with the number indicated above reveals that there are 88 binational projects.

## Methodological Explanations:

1. Binational projects are counted separately in each participant country, having a double count in the total.
2. All data on number of projects and amounts corresponds to the existing data on the IIRSA Website as of July 2007. After that date, new data has been incorporated to the portfolio as a result of the Executive Technical Groups advances.

Source: Prepared by the author on the basis of data from IIRSA (<http://www.iirsa.org/proyectos>).

Table 2

**TOTAL INVESTMENT, PUBLIC INVESTMENT, AND IIRSA'S PROJECTS**  
In US\$ Billion and Percentages

Country	Gross Domestic Fixed Investment / GDP <sup>a/</sup>	Central Government's investment / Gross Domestic Fixed Investment <sup>a/</sup>	Total IIRSA's Projects	
	Percentage	Percentage	In US\$ Billion	Percentage of Investment <sup>b/</sup>
Argentina	21.5	9.4	6.257	15.9
Bolivia	12.5	81.0	8.025	679.3
Brazil	16.3	31.9	11.563	8.1
Chile	20.6	8.8	1.145	4.7
Colombia	19.8	30.8	0.848	3.5
Ecuador	21.9	22.9	1.035	12.9
Guyana	34.8	65.9	0.263	98.5
Paraguay	19.3	25.5	3.649	252.6
Peru	18.8	9.9	3.987	26.6
Suriname	n.a.	n.a.	0.166	n.a.
Uruguay	13.1	10.3	0.822	37.8
Venezuela	20.2	28.5	1.426	4.9
<i>Total</i>	<i>18.0</i>	<i>25.1</i>	<i>39.185</i>	<i>13.6</i>

Notes: n.a.: non-available.

<sup>a/</sup> Data for 2005.

<sup>b/</sup> The total amount of IIRSA's projects is expressed as a percentage of gross domestic fixed investment in 2005 for illustrative purposes. It should be noted that in most cases project disbursements extend for over one period.

Methodological Explanations: See Table 1.

Source: Prepared by the author on the basis of data from IIRSA, ECLAC and IDB.

Table 3

**IIRSA'S PROJECTS AND GDP *PER CAPITA***  
As a Percentage of Investment and in PPP Dollars

Country	Total IIRSA's Projects	
	Percentage of Investments	GDP <i>per Capita</i> In PPP Dollars
Argentina	15.9	14,481
Bolivia	679.3	2,767
Brazil	8.1	8,657
Chile	4.7	12,134
Colombia	3.5	7,620
Ecuador	12.9	4,553
Guyana	98.5	4,568
Paraguay	252.6	5,052
Peru	26.6	6,249
Suriname	N/A	5,918
Uruguay	37.8	10,819
Venezuela	4.9	6,606
<i>Total</i>	<i>13.6</i>	<i>7,452<sup>a/</sup></i>

Notes: <sup>a/</sup> Simple average.

Source: Prepared by the author on the basis of data from IIRSA, ECLAC and CIA World Factbook.

Table 4

POTENTIAL MARKETS FOR SOUTH AMERICAN COUNTRIES US\$ Millions per km and Percentage									
Country	In US\$ Millions per km					In Percentage of Potential Market Total			
	Home Market	External			Total Potential Market	Home Market	External		
		Rest of South America	EU	NAFTA			Rest of South America	EU	NAFTA
Argentina	3,573	1,129	1,088	1,603	7,394	48.3	15.3	14.7	21.7
Bolivia	265	1,470	1,172	2,132	5,039	5.3	29.2	23.2	42.3
Brazil	5,812	530	1,349	1,852	9,543	60.9	5.6	14.1	19.4
Chile	2,401	998	1,028	1,711	6,137	39.1	16.3	16.7	27.9
Colombia	3,496	779	1,331	3,312	8,917	39.2	8.7	14.9	37.1
Ecuador	1,202	832	1,237	3,092	6,363	18.9	13.1	19.4	48.6
Guyana	79	1,163	1,549	2,821	5,612	1.4	20.7	27.6	50.3
Paraguay	489	2,172	1,170	1,777	5,607	8.7	38.7	20.9	31.7
Peru	1,596	958	1,142	2,416	6,112	26.1	15.7	18.7	39.5
Suriname	79	1,265	1,575	2,665	5,584	1.4	22.7	28.2	47.7
Uruguay	877	1,392	1,098	1,581	4,948	17.7	28.1	22.2	32.0
Venezuela	1,944	843	1,487	3,438	7,712	25.2	10.9	19.3	44.6

Notes: <sup>a/</sup> Potential home market for country  $j$  ( $PM_j$ ) is calculated as:

$$PM_j = \frac{GDP_j}{d_j}$$

Where:

$GDP_j$ : Gross domestic product in PPP dollars for country  $j$ .

$d_j$ : Own distance, calculated as 1/6 of the radius of country  $j$ 's area.

<sup>b/</sup> Potential market in region  $i$  for country  $j$  ( $PM_{ij}$ ) is calculated as:

$$PM_{ij} = \frac{GDP_i}{d_{ij}}$$

Where:

$GDP_i$ : Gross domestic product in PPP dollars for region  $i$ . The GDP for the Rest of South America is the South American GDP minus country  $j$ 's GDP.

$d_{ij}$ : Distance between country  $j$  and region  $i$  measured as the distance between the capital of country  $j$  and a central city in region  $i$ .

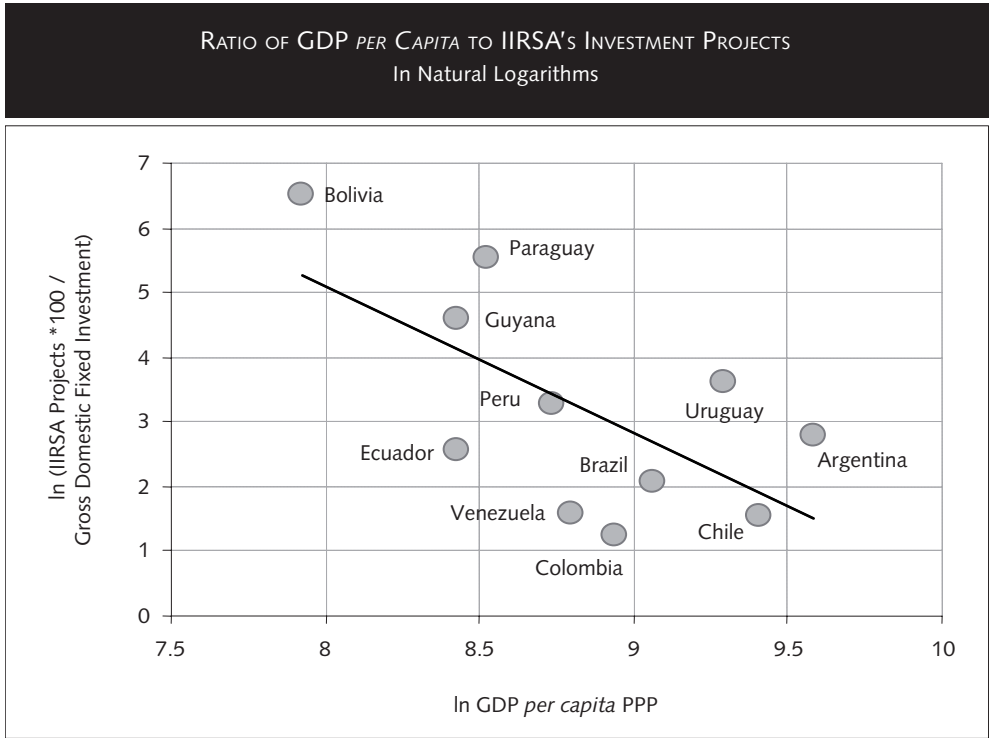
Brasilia was taken as a benchmark in the case of South America; Kansas City for NAFTA and Vienna for the EU.

For the calculation of the potential market for Brazil in South America, the distance being considered is the average distance between Brasilia, and Buenos Aires, Lima and Caracas.

<sup>c/</sup> Sum including the potential markets in the Rest of South America, NAFTA and the EU.

Source: Distances Worldwide and our own calculations on the basis of data from CIA World Factbook.

Figure 1



Source: Prepared by the author on the basis of data from IIRSA and CIA World Factbook.

## ANNEX: IIRSA's Main Results<sup>1</sup>

### 1- PROJECT PORTFOLIO

- 338 infrastructure projects grouped into 41 sets of projects with an estimated investment of US\$39.185 billion.<sup>2</sup>

- 40 projects with their financing approved or in process of approval by the Technical Coordination Committee member institutions (IDB-CAF-FONPLATA) for a total investment of almost US\$7.354 billion (and US\$3.375 billion in financing). The data includes the projects of the AIC detailed below.

### 2- IMPLEMENTATION AGENDA BASED ON CONSENSUS 2005-2010 (AIC)

- 31 projects for a total amount of US\$6.921 billion make up this priority agenda that is expected to be completed within the next three years (by 2010)

- AIC features 10 projects in execution for an amount of US\$3.643 billion and a concluded project for an amount of US\$12 million

- 12 projects being executed under some PPP modality

- Some projects in execution worthy of mention along with their objectives are the following:

- *Paita-Tarapoto-Yurimaguas Road, Ports and Logistic Centers (Amazon Hub):*

To improve infrastructure and operation of the intermodal hub, promoting the streamlining of logistics services and ports, which operate throughout the hub, and to consolidate the coast-mountain-jungle corridor of the northern region of Peru and its regional complementariness with the Amazon State of Brazil, to thus promote international trade. (Estimated total investment: US\$338 million).

- *Bridge over the Acre River (Peru-Brazil-Bolivia Hub):* To promote the development of physical infrastructure and cross-border integration in South America and, furthermore, to provide Brazil and the macro region in southern Peru access to the Peruvian maritime ports of *Ilo*, *Matarani* and *San Juan* on the Pacific, and *vice versa*. To implement border control centers with integrated control systems on both sides of the bridge over *Acre* River. (Estimated total investment: US\$12 million). The construction of the bridge was concluded in January 2006.

- *Paving of the Iñapari-Puerto Maldonado-Inambari, Inambari-Juliaca/ Inambari-Cusco Leg (Peru-Brazil-Bolivia Hub):* To improve and rehabilitate road infrastructure in the macro southern region of Peru, which connects to the States of *Acre* and *Rondônia* in Brazil; and facilitate the flow of passengers and cargo between such regions and the

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<sup>1</sup> The information included in the achievements is available at the IIRSA website <http://www.iirsa.org>.

<sup>2</sup> All references to number of projects and amounts corresponds to the existing data on the IIRSA website as of July 2007. After that date, new data has been incorporated to the portfolio as a result of the Executive Technical Groups advances.

international markets accessed through the Pacific Basin, thus promoting the regional integration process. (Estimated total investment: US\$1.055 billion).

- *Building of the Pailón-San José-Puerto Suárez Road (Central Interoceanic Hub)*: The Pailón-Puerto Suárez road is part of the main Bolivian Integration Corridor, which joins the East with the West, and lodges an important percentage of the country's population and economic activity. It supplements regional integration between the ports of Peru and Chile, on the Pacific, and the Brazilian ports on the Atlantic, cutting across Bolivia. (Estimated total investment: US\$444.8 million).

- *Duplication of the Palhoça-Osorio Leg (Rodovia MERCOSUR) (MERCOSUR-Chile Hub)*: To improve the traffic flow in the MERCOSUR Corridor and to reduce the number of road accidents. Besides promoting the expansion of the capacity through the duplication of the section, the project will restore the existing track and incorporate different devices in order to increase road safety in a significant manner, emphasizing the measures that are necessary to achieve the organization of local traffic (vehicles and pedestrians), seeking the minimization or even removal of current conflicts with long distance road traffic. (Estimated total investment: US\$1.2 billion).

- *Duplication of Route 14 between Paso de los Libres and Gualedaychú (MERCOSUR-Chile Hub)*: To ensure safer road conditions in the MERCOSUR-Chile Hub transport by highway. (Estimated total investment: US\$370 million).

- *International Route 60 CH (Valparaíso-Los Andes Leg) (MERCOSUR-Chile Hub)*: To increase the capacity and upgrade the standard of the International Route 60 CH so as to absorb the growth in traffic demand. It is a structuring highway, which cuts across Chile, starting at the Chilean-Argentinean border, in the *Cristo Redentor* tunnel area, and running to the West, towards Valparaíso Port. (Estimated total investment: US\$286 million).

### 3- THE STRATEGIC MANAGEMENT INFORMATION SYSTEM (SIGE)

SIGE is an information system running on an IT-based platform administered by the countries. This tool is intended to offer technical support for the management of the 31 projects included in the AIC priority agenda, making it possible to monitor on a real time basis the current status of the projects (such as their critical paths, infrastructure goals, restriction management, management teams, proposed solutions, estimated investment, funding sources, etc.). This system provides for information mechanisms for decision-making processes at the highest-ranking governmental levels.

### 4- TECHNICAL STUDIES ON REGULATORY, PLANNING AND SECTORAL ASPECTS

IIRSA has produced technical studies in several thematic areas, which, among others, include:

- "Methodology to Evaluate the Potential for Production Integration": This methodology has been developed by combining three available research methods - Production Chains (quantitative), Networks and Clusters (qualitative)- and it has been applied to two groups of pilot projects.

- "Methodology for the Analysis of Logistic Chains": A methodology applicable to IIRSA's Project Groups has been developed with a view to identifying and determining support actions for the development of logistic chains in the Integration and Development Hubs and their pilot application to a given IIRSA's Project Group.

- "Environmental Strategic Evaluation (EAE)": The goal of this methodology is to provide IIRSA with a conceptual framework and practical guidelines for the application of strategic environmental evaluations of its Groups of Projects, with the following purposes: (i) To improve the comprehension of the territories in order to promote their sustainable development and to optimize the benefits of IIRSA's Project Groups; (ii) To measure the impacts, critical aspects and vulnerable areas and to identify socio-environmental development opportunities of the influence territories of the IIRSA groups of projects; (iii) To establish associated management and investment guidelines that shall give rise to more sustainable development options, as well as to identify design and implementation recommendations for the groups of projects, and (iv) To create a space for making participative activities and a constructive dialogue possible among governments and key participants of the area of influence of the groups of projects.

- "Methodology to Evaluate Cross-border Infrastructure Projects" (in progress): Its goal is to develop a methodology for the distribution of costs and benefits of multinational projects among the participating countries.

- "Georeferenced Information System or GEOSUR": This is a Regional Geoserver that provides online information about IIRSA's spatial planning process, including information about projects and about the economic and socio-environmental dynamics. This is also a geointegrator mechanism as it has an online portal that integrates data coming from a network of official and scientific institutions, widening and updating the available spatial information in order to support national and regional planning efforts.

- "Information and Communications Technologies at the Service of South American Competitiveness and Integration": This study undertakes a diagnosis divided into three main areas: promotion of competition to increase networks, connectivity agendas, and promotion of contents and universal access.

- "Facilitation of Transportation at South American Border Crossings": This study helped determine the typology of border crossings and the necessary activities to improve their operation and enhance service provision.

- "Assessment of Main Ports in South America": This study assesses each country's main ports and examines port logistics and their impact on international trade flows. In addition, it identifies activities to eliminate existing obstacles to the transport of goods by sea.

- "Multimodal Transportation in South America: Towards Regional Regulatory Harmonization": It is aimed at promoting the analysis of the legal issues involved in multimodal transportation in the region, laying the grounds for the establishment of a harmonized legal framework for the international multimodal transportation of goods. Additionally, it analyzes the incidence that this development would have at the regional competitiveness level.

- "Studies related to the Sectoral Process for Financing Instruments": The various studies have sought to contribute to different aspects related to investments in infrastructure and the numerous mechanisms for their implementation. These studies cover the areas of methodology for the identification and prioritization of projects, the determination of financial structures for cross-border infrastructure projects within IIRSA, the need for supporting mechanisms that promote the development of cross-border transactions by local capital market and the study of alternatives to and experiences in PPP projects in South America.

## 5- PROJECT FINANCING FACILITIES

- *Fund for the Financing of Technical Cooperation for Initiatives for Regional Infrastructure Integration (FIRII)*: In February 2006, the IDB's Board of Executive Directors approved a reform to the *Fund for the Financing of Technical Cooperation for Initiatives for Regional Infrastructure Integration*. With this measure, the Integration Fund, established in 2005, became a US\$20 million non-reimbursable fund to finance technical cooperation operations for the formulation of infrastructure projects for integration purposes, particularly those comprised within the Initiative.

- *Fund for the Promotion of Sustainable Infrastructure Projects (Fondo para la Promoción de Proyectos de Infraestructura Sostenible - PROINFRA)*: CAF established PROINFRA, endowed with US\$50 million with a view to upgrading infrastructure projects, giving priority to those aimed at strengthening regional integration or introducing innovative financing schemes. PROINFRA forms part of the actions advanced by the multilateral body in support of the Initiative.

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