

ABSTRACT

Title of Document: TRADE OPENNESS AND WELL-BEING: DO
 COMPLEMENTARY CONDITIONS
 MATTER?

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In the last three decades, most of the existing literature using regression analysis to explore the effects of trade on development has conferred the first one a leading role in directly determining cross-country differences on income. Indeed, this should come at surprise, since what trade theory predicts and what results from General Equilibrium Models (an econometric-alternative quantitative tool) recently display are not completely aligned with conventional empirical evidence at hand. According to these sources, the effects of trade liberalization on welfare are indirect, transmitted through several channels, and dependent on multiple initial conditions. Much of such discrepancy may be due to measurement error and omitted variable problems, data limitations, and methodological shortcomings presented in regression analysis. On one hand, there is agreement over the fact that conventional proxies of trade openness contain severe measurement errors. In addition, data on control variables affecting well-being and believed to be correlated with trade became available just recently. On the other hand, and more importantly, the search for a possible contingent or conditional relationship between free trade and well-being has not been a priority in the agenda of

mainstream literature with the exception of sporadic and isolated studies, despite the fact that trade theory has long recognized that possibility. Using newly developed policy-oriented measures of trade integration built with information from tariff rates, non-tariff-barriers, and subsidies, and controlling by multidimensional policy areas beyond those found in conventional literature, this study finds evidence of a contingent relationship between trade openness and well-being. More specifically, this investigation arrives at two conclusions. First, unilateral or one-way-street trade liberalization is not associated with higher levels of well-being, showing neither a direct impact nor a conditional one in the presence of complementary conditions. Second, gains in international market access, or multilateral trade openness, do not alone guarantee the achievement of higher levels of well-being, but do demonstrate significant potential for development in the presence of favorable internal conditions, such as those linked to business competitiveness and market efficiency, the promotion and respect of political rights among the citizenry, and the less concentrated distribution of economic and social opportunities.

TRADE OPENNESS AND WELL-BEING: DO COMPLEMENTARY
CONDITIONS MATTER?

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Dedication

To my father, Julio Ricardo, who inspires everything I do.

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Chapter 1: Introduction

In the last three decades, most of the existing literature using regression analysis to explore the effects of trade on development has conferred the first one a leading role in directly determining cross-country differences on income. Indeed, this should come at surprise, since what trade theory predicts and what results from General Equilibrium Models (GEM's), an econometric-alternative quantitative tool, recently display are not completely aligned with conventional empirical findings at hand. Evidence from GME's, recently used to assess the impact of unilateral, bilateral, and multilateral trade reform on economic aggregates as well as wages and poverty, show that the effects of trade liberalization on welfare are indirect, transmitted through several channels, and dependent on multiple initial conditions. (Hertel, Preckel, and Reimer, 2001; Hertel, Ivanic, Preckel, Cranfield, and Martin, 2003; Ganuza, Morley, Robinson, Vos, 2005; Bussolo and Lay, 2003; Bussolo and Mensbrugge, 2006). This investigation believes that much of such mismatch or discrepancy found in different empirical sources may be due to measurement error and omitted variable problems, data limitations, and methodological shortcomings presented in regression analysis.

In fact, from the perspective of exploring the potentialities of trade integration on well-being, the existing literature using regression analysis exposes three main limitations. *First, the use of broader and alternative measures of welfare to complement the analysis has been absent.* The vast majority of studies has focused

exclusively on the impact of trade openness on GDP related indicators, such as economic growth or income per capita levels, a linked but different exercise. *Second, the use of policy-oriented indicators, built with information from tariff rates, NTB's, and trade-restraining subsidies to measure trade openness is non-existent.* Instead, as discussed earlier, conventional literature in the field has employed outcome-oriented proxies of trade protection that contain significant measurement errors. *Third, the search for a possible contingent or conditional relationship between free trade and well-being has not been a priority in the agenda of mainstream literature with the exception of sporadic and isolated studies, despite the fact that trade theory has long recognized that possibility.* The stock of related research has mainly targeted its attention on finding a direct, unique and unambiguous association between trade openness and average wealth, but it has not considered the possibility of a conditional connection between both variables.

This study hopes to contribute to reconciling trade theory and empirical evidence on trade and development, by contributing to correct measurement error and omitted variable problems, and testing for a conditional relationship between both variables. In particular, it adds three innovative components with respect to the existing literature: (1) the inclusion of infant mortality and life expectancy rates as alternative indicators of quality of life; (2) the use of two policy-oriented measures of trade integration: unilateral trade openness (trade restrictions imposed by each country on imports, which are mainly influenced by domestic trade policy) and multilateral trade openness (trade restrictions faced by each country's exports, also a

good proxy of each country's international market access, largely the result of dual and multiparty negotiations). Both are built with information from tariff rates, NTB's, and trade-restraining subsidies (including those adopted in the agricultural sector). Finally, the investigation searches for (3) a possible contingent or conditional relationship between free trade and well-being by including relevant interaction variables in different model specifications. Using this methodological framework, **the investigation test the hypothesis that maybe trade integration has the potential to unleash positive economic and social benefits *only if* certain conditions, within and outside the reach of national governments, are in place.**

What are those conditions? For testing the main hypothesis, three "clubs" of internal conditions with the potential of shaping the impact of trade integration on well-being have been differentiated. The first group is integrated by internal conditions with probed major impact on *economic growth* according to conventional literature, which mainly includes variables determining business competitiveness and market efficiency such as public infrastructure, financial depth, stock of human capital, level of technological development, the rule of law, and the protection of property rights. The potential impact of opening up the economy on *average* living standards could vary significantly depending on the magnitude of cross-the-border differences in factor productivity, transaction costs, and overall country-risk.

Variables believed to favor a *more equal distribution* of wealth and opportunities for well-being composed the second club. By nature, this type of

internal factors facilitates the inclusion of individuals -as citizens in the political arena and as consumer-producer agents in formal markets- by providing them with rights, resources and capabilities to take advantage of new opportunities. Among them stand out the practice of democratic values and the exercise of basic political rights. Democracy, even in its more incipient versions, secures a minimum exercise of checks and balances within the government branches. This feature, combined to basic political rights as free speech and the independence of the press, allows most of the government actions and policies to be scrutinized and the demands of the population to be heard. In this setting, rent seeking practices and economic and social policies favoring exclusive groups of society are censored and limited in comparison to other political frameworks. As Sen (1994) asserts, no famine has occurred in a democracy, and particularly, in a society enjoying free press.

All factors contained in the first two “clubs” are susceptible to change in the presence of active policymaking. National governments, with narrow or broad margins, could make a difference in the short, medium or large run if politically engaged on these reforms. However, there is a vector of factors *imposed by destiny and history* with significant potential to shape the effects of trade integration on human progress. These initial conditions, rigid to vary over time, have recently gained more attention as important determinants of economic and social development. This third “club” is composed by geography (i.e. distance to international markets, disease prevalence), ethnic diversity, and structural inequality.

As explained in the course of this investigation, all variables contained in the last group have been linked to structural inequality in the existing literature.

The testing of the main hypothesis may have significant policy implications. Because trade integration involves deep changes in the distribution of economic and social benefits and burdens across societies, its impact needs to be addressed. Addressing such a complex interaction, however, requires a good understanding of the true nature of the relationship between the forces shaping globalization and those fostering development. Only after that, effective policies, at the national and international level, could be designed and implemented with the primary goal to reduce the already existent but increasing tensions created by the new economic model.

The results reported by this study insinuates the kind of free trade policies with greater potential to positively affect living standards, and the circumstances under which those policies may enhance their potentialities for human progress. Particularly, this study finds evidence of a contingent relationship between trade openness and well-being. It arrives at two conclusions. **First, unilateral or one-way-street trade liberalization is not associated with higher levels of well-being, showing neither direct nor conditional impact in the presence of complementary conditions.** Only the interaction term between unilateral trade openness and structural inequality is significant when regressed against income, which indicates that one-sided reductions in trade protection may lead to a general decrease in average living

standards in highly unequal countries. Interestingly, in theory the interaction of the forces from both variables can actually yield such result: because one-sided trade liberalization produces mainly redistributive effects on income, in countries where socio-economic assets and opportunities are concentrated the “winners” from changes in trade policy are probable those possessing major financial and political resources to influence public policy.

Second, multilateral trade openness does not alone guarantee the achievement of higher levels of well-being, but do show significant potentialities for development in the presence of favorable internal conditions. More specifically, variables associated with the achievement of business competitiveness and market efficiency (first “Club”) seem to complement gains in international market access in rising cumulative welfare indicators such as average income, but not distributional ones, like life expectancy, indicator that changes on the margin. The reason behind this logic is simple: market efficiency assures output maximization, but not necessarily equal distribution. On the contrary, the exercise of specific democratic practices (second “Club) promotes a better distribution of the benefits created by the access to larger markets, but appears to have a not significant role in inducing higher average incomes under two-sided trade integration. And that could be because democratic regimes, though displaying no clear income-generating forces, as a minimum guarantee the respect for some basic values (i.e. free expression, voice, accountability), which facilitates the channeling of wide-ranging demands for better distribution of resources and opportunities for development. As in the case of one-

sided trade reform, structural inequality hurts both average income and life expectancy rates. Because in most cases structural inequality operates as proxy of the distribution of overall opportunities (social, economic and political), it is believed to affect negatively well-being through three channels: restrictions for market development, limits in access to credit, and tendencies observed in medium voter preferences. All these anticipated results are coherent with evidence registered in existing literature. In this sense, the most valuable message from this investigation lies on the importance that both the reciprocal access to international markets and the pursuit of policy complementarities should receive in the external and internal political debate about free trade and development.

The investigation is structured as follows. Chapter 2 explores the economic, social, and political forces behind global trade integration in the last thirty years. It also examines the magnitude of trade liberalization in a more integrated world. The theoretical and empirical links between trade openness and well-being are discussed in Chapter 3. It carefully examines findings, contributions, and limitations of existing literature. One of the main conclusions of the analysis lies on the necessity of looking for a conditional or contingent association between the liberalization of trade and living standards, as trade theory and alternative empirical research suggest. The fourth chapter contains the study's conceptual proposal. It describes, explains, and shows data justifying the incorporation of new and relevant information to address the effects of trade integration on well-being. Chapter 5 describes the methods to be

employed as well as a summary of the expected results. Chapter 6 concludes and discusses some policy implications from the analysis.

Chapter 2: Global Trading: A More Integrated World

The phenomenon of globalization is attracting the attention of most scholars in the field of development. Understood as an inexorable process of trade integration, increasing capital flow mobility, labor force movements –even in the presence of highly restrictive immigration laws in recipient countries-, and impressive expansion of information and technology, globalization is progressively eroding national boundaries with profound and permanent effects on people’s lives worldwide. Its occurrence is also redefining the approach of the international community toward the global environment and the political management of armed conflicts and humanitarian crisis around the world. Because globalization involves deep changes in the distribution of economic and social benefits and burdens across societies, its impact needs to be addressed.

Trade openness has played a decisive role in triggering global integration. Countries in the developed and the developing world have increasingly embraced the idea of unlocking their domestic markets to external competition under the assumption that trade integration is a win-win solution. According to this view – mostly inspired by classical trade theory-, given the fact that economies possess different factor endowments (i.e. capital and labor), trade liberalization would inevitably force participants of free trade to fully exploit their competitive advantages by specializing in the production of commodities with high contents of the relatively

abundant factor. As a result, the more efficient allocation of resources across borders would lead to a general commodity price reduction and factor-price equalization. The foundations of these principles derive from the works of Smith (1766) and Ricardo (1817), and more recently from the Heckscher-Ohlin model (1933).

Classical economics has also given supporters of global free trade the opportunity to base their case on strong moral grounds: poor countries are supposed to benefit the most from trade integration. Because labor is the relatively abundant factor in developing countries, trade liberalization would result in the progressive increase of relative wages in these economies. In addition, as factor costs narrow across economies, production should also converge progressively, allowing low-income countries to eventually bridge the gap in living standards. Existing market size and purchasing power asymmetries between rich and poor economies would also allow the latter larger gains from market access, and the increasing probabilities of benefiting from economies of scale. Besides, technology transmission mainly through the expansion of manufactured and high-tech imports—which has been found to be one of the most effective trade-related drivers of economic growth—would favor in greater proportion poor countries engaged in free trade (Wacziarg, 2001).

Section 1: Beyond Theory: The Role of Local and Global Political Economy

Even though classic trade theory has been used by supporters of globalization to justify and spread free trade policies around the world, the dynamics of local and

global political economy played a much greater role in diminishing trade protection worldwide. At the national level, several circumstances favoring the implementation of free trade policies converged, particularly in developing countries. On one side, the reputation of the traditionally protected industries as driven forces to general prosperity was undermined, in part because the preferential commercial treatment granted to them was not resulting in tangible economic and social benefits to the average voter. Local producers were increasingly perceived as inefficient and less competitive in comparison to their foreign counterparts. The import-substitution model that championed the development of infant industries as a key component of its strategy for development gradually lost credibility (Rodrik, 1994a). Also, restrictive trade policy was identified as an indivisible component of the “traditional, old fashioned” growth model, which had failed in delivering progress in a continuous and an equitable manner. On the other side, progressive democratization across developing countries contributed to change the trade policy standpoints, from a producer-oriented to a consumer-oriented perspective. A more educated, better informed, and politically organized and empowered citizen became a more exigent consumer. Issues related to product quality, diversity and price level gained visibility and generated extensive popular support for trade liberalization in these societies¹.

¹ The relationship between democracy and trade openness could also be endogenous. Lopez-Cordova and Meissner (2005) report empirical evidence suggesting a two-way street relationship between both variables: democracies are more likely to enact free trade policies (democratic transitions are accompanied by the emergence of a middle class with increasing demands not only for additional political but also consumer rights) but trade integration may deepen democratic practices through its effects on economic development.

These growing sentiments were able to be politically carried out because of the confluence of two significant events: the finding of tariff-alternative fiscal revenue sources as emerging economies went through broad pro-market economic reforms, and, most importantly, the circumstances under which the decision to embark in trade liberalization reform was made. Alike rich nations, where trade barrier reductions seem to be the result of an endogenous process (countries implement further tariff liberalization as they industrialize), in most developing nations trade reform took place when these economies were experiencing deep macroeconomic and social unrest, in the aftermath of the debt crisis of the eighties and the fall of the Berlin Wall. In that scenario, deep economic crisis relegated distributional considerations to second place behind economy-wide concerns, and therefore, allowed an agenda-setting government to sneak in trade policy reforms alongside macroeconomic reforms (Rodrik, 1994b)².

At the global level, since the early nineties pressures for trade liberalization escalated as the most developed nations -particularly the United States- redefined its geopolitical relationship with the developing world based on the idea that shared economic and social prosperity through free trade assure global security. According to this new approach, by triggering economic growth in low-income countries, trade integration not only could lead to progressive poverty reduction but also could produce a cohort of more educated citizens with strong incentives to expand their political rights, deepen democracy, and build better institutions. Integration to

² Graham and Sukhtankar (2004) offer further evidence from the Latin American experience supporting the idea that economic and social crisis may have played a key role in cementing support for reform, contrary to what the theory of political economy of trade policy had predicted.

international markets would also compel developing countries to commit to certain domestic policies leading to macroeconomic stability, sound fiscal practices and improvements in the protection of property rights. In the end, global progress would translate into global security.

Impetuses for trade liberalization were operationalized through three channels: unilateral reductions of trade barriers, the launching of multilateral trade negotiations, and the proliferation of regional and bilateral free trade agreements at global scale. In recent decades, one-sided trade openness policies –although at different degrees of implementation- were conducted by developing countries as part of broader economic liberalization programs. Since 1975, according to Wacziarg and Welch (2003), 73 countries have undergone pro market economic reforms among which openness to trade was a main component; of these, 46 undertook such reforms after 1990.

Influential international organizations, particularly the International Monetary Fund (IMF) and the World Bank (WB), have also played a significant role in promoting unilateral trade liberalization. Financial and technical support granted to developing countries by these institutions has been conditioned to the implementation of a set of structural reforms, among which trade liberalization constitutes an essential one. Country cases in which the IMF and WB used their leverage to dismantle trade barriers are found in Latin America, Africa and South Asia, but particularly notorious -because of the speed and depth with which the reforms were undertaken- are the experiences of the transition economies in Eastern Europe.

On the other hand, multilateral trade negotiations have gradually benefited from expanded country membership and coverage of trade related areas since the establishment of the General Agreement on Tariffs and Trade (GATT) in 1948³. Although multiparty talks were conceived as the best option to unlock markets across borders in the fastest and broadest manner, recent stagnation in the negotiations - reflecting differences between the North and South hemispheres in the treatment of the agricultural sector- provoked the proliferation of regional and bilateral trade agreements as a source of competition for multilateral trade liberalization. 250 preferential trade agreements were notified to the WTO by year 2002, 130 of which after 1995; by the end of 2005, if agreements reportedly planned or already under negotiation are concluded, the total number in force might approach 300 (WTO, 2006)⁴. Of particular interest are those trade initiatives launched by developed nations, the United States and the European Union, with emerging economies⁵. As a result, by the beginning of the 21st century, intensive worldwide trade negotiation has not resulted in a global free trade area, but rather in profuse bilateral commercial relations resembling a spaghetti bowl.

³ Since the establishment of the General Agreement on Tariffs and Trade (GATT) in 1948 multilateral trade agreements have progressively benefited from expanded membership. 23 countries (10 developed vs. 13 developing) participated in the Geneva Round in 1948; 62 (23 vs. 39) in the Kennedy Round in 1962-67; 80 (26 vs. 54) in the Tokyo Round in 1973-79; 97 (26 vs. 71) in the Uruguay Round in 1986-93; and 149 (26 vs. 123) in the Doha Round in 2001-06, under the guidance of the newly institutionalized World Trade Organization (WTO). Also, new trade sectors have progressively been included in the negotiations, from tariffs (Kennedy Round, 1962) and non-tariff barriers (Tokyo Round, 1973) to services (Uruguay Round, 1986)

⁴ Preferential Trade Agreements (PTA) includes common markets, custom unions, single markets and Free Trade Agreements (FTA).

⁵ Among the US trade initiatives with developing countries are the Free Trade Agreement of the Americas (FTAA), the Middle East Free Trade Area Initiative (MEFTA), the Enterprise for ASEAN Initiative, and the Southern African Customs Union Free Trade Agreement (SACU-FTA). The European Union is negotiating free trade agreements with the Association of Southeast Asian Nations (ASEAN), the Community of Andean Countries (CAN), Central America, the Common Southern Market (MERCOSUR), and the Gulf Cooperation Council (GCC).

Section 2: The Outcome : The Reduction of Trade Barriers

As a consequence of the dynamics of local and global political economy, restrictive trade policies –in general- have gradually lost ground in both hemispheres. Tariffs, the most restraining and visible trade measure, shrunk worldwide in the last three decades. The average world tariff declined from 16.0% in 1975 to 6.5% in year 2000 (Graph N° 1)⁶. Even though average tariffs in the developing world still remain higher than those reported in rich countries (7.0% vs. 3.6%), reductions in average tax on imports in emerging economies have been remarkable (Graph N° 2). Statistical evidence reveals that average global decreases have not been driven by particular cases (Graph N° 3).

On the other hand, the tendency over time followed by Non-Tariff Barriers (NTB's) in the period 1975-2000 is not well known⁷. The lack of an internationally accepted definition and classification of NTB's, the complexity involved in encapsulating different types of such policies (i.e. quotas and technical, sanitary and environmental-protective measures) into a single level of trade restrictiveness, and the methodological challenge to convert them in terms of import value, have made it extremely difficult for international organizations and scholars to keep a statistical

⁶ Average tariffs have been calculated as the ratio between total import duties and total imports. Source: World Development Indicators. World Bank.

⁷ According to the Coding System of Trade Control Measures (TCMCS) – a body of the United Nations Commission for Trade and Development (UNCTAD)- Non-Tariff Barriers (NTB's), also known as Non-Tariff Measures (NTM), include the following categories of policies: price control, finance, automatic licensing, quantity control, and technical measures.

track of NTB's over time⁸. Data for 96 countries are available only from 1996 to 2005, although each one registers in average one observation for the whole period.

Although data limitations exist, three conclusions about the evolution of NTB's in the period under analysis have emerged. First, the decline in absolute terms in non-tariff measures has been remarkably slower and much less extensive in comparison to that observed in tariff rates. Second, their relative importance and visibility as trade-restrictive instrument has considerably increased due to the degree of tariff liberalization across countries in recent decades. In the second half of the nineties, NTB's, on average, added an additional 70% to the level of trade restrictiveness imposed by tariffs (Kee, Nicita and Olarreaga, 2005). Finally, other modalities of NTB's have surfaced –particularly antidumping measures and Rules of Origin (ROO)-, which, originally designed to assure fair trade, have been progressively considered as political economy instruments to offset the benefits of tariff liberalization⁹. Based on a 155 cross-country gravitational model, Estevadeordal and Suominen (2005) found that highly restrictive ROO discourage aggregate trade flows.

⁸ Only after the mid nineties, UNCTAD began the Trade Analysis and Information System (TRAINS), a database containing the most complete, reliable and comprehensive information about NTB's.

⁹ In its most general concept, Rules of Origin (ROO) define the minimum value added produced within the preferential agreement area a good must contain to be conferred the favored tariff treatment. In theory, ROO avoids that parties out of the trade agreement utilize preferential areas as transshipping platforms. However, when highly severe and inflexible, ROO could offset tariff liberalization benefits by forcing local producers to rely extensively on local inputs, sometimes more expensive and of lower quality. The use of ROO has dramatically increased due to the proliferation of bilateral preferential trade agreements at a global scale.

Finally, the gradual abandonment in the use of monetary policy as a tool to promote export-oriented strategies -with the prominent exception of China- has clearly facilitated international trade flows over time. Political, economic and social distress caused by the persistence of local authorities in sustaining fixed-exchange regimes have become more visible in the aftermath of recent global financial crises. Even under low-risk scenarios, freer capital and more dynamic trade flows have increased the economic trade-offs that national governments face when monetary policy is subordinated to trade policy. From the early seventies to the beginning of the nineties –a period in which a significant number of emerging economies implemented broad economic liberalization programs- 33 developing countries abandoned fixed exchange regimes, a sign revealing the lesser degrees of freedom emerging economies possess to manipulate exchange rates. The tendency in favor of more flexible exchange policies was interrupted in the mid nineties but regained dynamism at the end of the decade, as a consequence of the Asian crisis in 1997-98 (Graph N° 4).

In summary, even though it is not clear if recent waves of globalization have favored the expected changes on NTB's in terms of flexibility and scope towards free trade, both the persistent, substantial and widespread decreases in tariff rates –the most trade-restrictive measure- and the increasing abandonment of monetary policy as a trade policy instrument have resulted in a remarkable retreat of global trade protection in the last thirty years.

Chapter 3: Trade Integration and Well-Being

In world history, very few times national and global forces have coincided and committed to push a common international policy agenda as for free markets and trade integration at the end of the twentieth century. As mentioned earlier, trade liberalization policies have been embraced worldwide not only because they were conceived as a win-win solution but also because they were supposed to facilitate developing countries to growth, to achieve higher living standards in favor of their poor population and, therefore, to help them to converge or bridge the gap with rich nations. Besides, this sentiment was not exclusively rooted in national and global political authorities; at the beginning of the 21st century, six out of ten people around the globe perceived globalization, broadly conceived, as beneficial for human progress (World Economic Forum, 2002).

Section 1: Is There an Empirical Link Between Trade Openness and Well-Being?

However, after almost three decades of progressive free trade policy implementation, increasing doubts about the beneficial impact of trade openness on economic and social well-being have emerged in both the academic sphere and the public realm. Wide-ranging voices, from laureate economists to displaced workers and peasants in the streets of Manila and La Paz, are not much convinced that integration to international markets is delivering the expected –and promised– social

benefits. The lack of association between trade liberalization and improvements in indicators of quality of life -such as education, health and other living standards- appears more evident in developing countries, which paradoxically were supposed to benefit the most from global trade integration.

In fact, a first look at cross-country data reveals no correlation between changes in trade policy and changes in selected indicators of well-being in recent decades. Graph N° 5 exhibits the partial correlation between average annual changes in tariff rates and average annual changes in a set of indicators of quality of life over the period 1980-1995: infant mortality rate at birth, life expectancy, an index of education achievement and the Human Development Index (HDI)¹⁰. Each equation was controlled by the initial level of the dependent variable.

At first glance, changes in trade policy –measured as the average annual variation in tariff rates- appear to explain little about the evolution of health, education and human development conditions across countries in the last three decades¹¹. Among the four regressions shown, only those linking trade integration to infant mortality rates and the HDI show statistical significance at 95% level of

¹⁰ The education achievement index is composed by the illiteracy level (with a weight of 2/3) and the simple average of primary, secondary, and tertiary enrollment rates (1/3). The HDI was created by the United Nations (UN) in 1990 and included as a central piece in its *Human Development Report*, an annual UN publication. The HDI was built on the basis of three components: life expectancy at birth, academic achievement, and standard of living, measured as the real GDP per capita adjusted for purchasing power parity (PPP). See Appendix N° 1 for further details.

¹¹ Data show the same results when analyzing the period 1975-2000, but sample is severely restricted to 33 observations. It amplifies to its maximum size (ranging from 55 to 63 observations) in the period 1980-1995.

confidence. However, by taking away just a couple of outliers from the tails of both variables' distribution, any trace of statistical significance evaporates¹².

Alternative sources to explore the association between trade openness measures and any dimension of well-being different than average income are difficult to find. Surprisingly, although the existing substantial research on trade integration, very few studies in the field have focused their attention in disentangling the linkages between both variables. Shortage in the area of cross-country regression analysis is even more notorious. Among these few writings, the work by Wei and Wu (2004) is the closest analysis dealing with the effect of trade liberalization on alternative indicators of quality of life. Using five-year intervals for the period 1982-1997, they examine the association between a couple of measures of trade openness -tariff rates and trade to GDP ratio- and health outcomes, in particular, life expectancy and infant mortality. Panel regression analysis reports some evidence on the correlation between lower levels of trade protection and improved infant mortality and life expectancy rates.

Section 2: Trade Openness and Income : A Related Question

Instead, most economists in the field have been more interested in answering a related but somewhat different question: does trade integration promote economic growth and/or higher average incomes? And the inquiry, although receiving great

¹² Singapore and Malaysia, in both cases.

attention, is still wide open. Methodological drawbacks regarding the measurement of the main independent variable and the shortcomings in dealing with reverse causality problems in the relationship between some indicators of trade openness and income have brought skepticism about the existing empirical evidence. At this point, it is important to distinguish between two related but different questions: (1) Does trade volumes affect well-being?, and (2) Does trade policy have an impact on well-being? Clearly, from a policy prescription standpoint the interest of the present investigation lies on answering the second question. Trade flows, as discussed later, depend on multiple factors, some of them far beyond the reach of national governments. Trade policy is susceptible to be designed, shaped, implemented, and evaluated.

After examining in detail the most influential studies that attribute to outward-oriented trade policy significant weight in explaining income differences across countries, Rodrik and Rodriguez (2000) conclude that the results reported in all of them are mostly driven by the use of either proxies of trade openness that are highly correlated with other sources of economic performance or poor measures of trade barriers. Among the former stand out variables measuring the extent of the black market premium and distortions in the exchange rate, which mirror more accurately the consequences of bad monetary and fiscal practices rather than those of trade policy. The study focuses on eight papers: Dollar (1992), Ben-David (1993), Sachs and Warner (1995), Edwards (1998), Frankel and Romer (1999), Lee (1993), Harrison (1996) and Wacziarg (1998). In the following lines, the study will briefly examine the most important criticisms found in Rodrik and Rodriguez (2000)

regarding some of the existing literature. Conclusions from Dollar (1992) exclusively rely on the strong significance reported of the index of real exchange rate distortion, and the index of real exchange variability when regressed against income per capita. Those indexes, according to Dollar, capture information from trade policy since both relate to outward/inward orientations, by measuring if exchange rates are favorable to exporters and for how long. Rodrik and Rodriguez stress that three conditions must be satisfied to hold such argument, if: (1) there are no export taxes or subsidies in place, (2) there are no differences in national price levels due to transport costs, and (3) the law of one price holds continuously (local and international price differences are exclusively explain by transport costs). Obviously, the three conditions clash with reality.

The influential paper also challenges results from Sachs and Warner (1995) that found a strong association between reductions in trade protection and average income, using an index of five different criteria to classify an economy as close\open to international markets. The Sachs-Warner indicator is a dummy variable, with a value of zero (close to trade) according to any one of the following criteria, if a economy: (1) had average tariff rates higher than 40%, (2) NTB's cover more than 40% of imports, (3) had a socialist economic system, (4) had a state monopoly for major exports, and (5) its black market premium exceeded 20% between the 1970's and 1980's. Using data provided by the authors, Rodrik and Rodriguez demonstrate that almost all of the information captured by the trade openness dummy comes from the last two criteria. Then, they argument that both, the presence of state monopolies

and the instability of black market premium explain more policy and institutional cross-country differences rather than differences in trade policy. Likewise, papers by Harrison (1996) and Wacziarg (1998) have been challenged for using some similar proxies for trade policy.

The paper by Edwards (1998) is criticized in other grounds. The cited study, using nine different existing proxies of trade openness, finds six of them string and significant explaining factor productivity growth in weighted least squares regressions. The indicators for trade openness are: (1) the Sachs-Warner index, (2) the subjective World Bank's trade strategy index, (3) the Edward-Leamer openness index, based on information on average residuals from trade flows regressions, (4) the black market premium, (5) average import tariffs, (6) coverage of NTB's, (7) the subjective Heritage Foundation index of distortions in international trade, (8) trade duties as percentage of total trade (export plus imports), and (9) the Holger-Wolf's regression-based index of import distortions for 1985. According Rodrik and Rodriguez, the use of GDP per capita levels in 1985 as weighting variable (presumably used to correct for heteroskedasticity) to run the least square regressions is behind the results. Given the fact that oil-exporter countries have high levels of income per capita, they were heavily weighted in the sample. If that information is combined with the fact that most of these countries remained relatively close to international markets and registered very low factor productivity growth in the eighties, then –as suggested by Rodrik and Rodriguez- it should not come to a surprise to find a significant association between trade openness and factor

productivity growth. In fact, when oil-exporter countries are taken out from the sample, such relationship disappears in all but three model specifications.

The extensive use of trade shares to GDP as an indicator of trade openness, on the other hand, has received serious criticisms. The most damaging in disqualifying it as a good proxy for trade integration refers to the fact that it denotes trade *outcomes*, not *policies*, and the former are influenced by factors well beyond the decision making process such as complementary policies affecting economic growth, geographical variables (proximity to international markets, access to sea, initial natural endowments and country size) and demographic conditions (population density). Also, trade shares appear to be a poor proxy of trade openness in countries highly dependent on export-oriented commodities, since changes on sales overseas are significantly sensitive to variations in international commodity prices, as experienced over the past two decades (Birdsall and Hamoudi, 2002). In fact, the simple correlation coefficient between volumes of trade (exports plus imports) as portion of GDP and tariff rates –a variable that contains significant information about choices in trade policy- is very small (-0.08) in the period 1975-2000.

An interesting common denominator found in the literature prone to attributing trade integration a decisive role in explaining income differences across countries is the fact that most of them do not use tariff rates and NTB's –the best available variables containing relevant, although not complete, information about trade policy- as indicators of trade openness. One plausible explanation is data

limitations. Cross-national average tariff rates are accessible from 1975 to 2004 but only 60 observations are reported at the beginning of that period, reaching a maximum of 97 countries in year 2000. Trade shares, in contrast, are available from 1970 to 2004 with a sample size ranging from 128 to 166 observations, respectively, which makes them –for example- a good candidate to be employed in panel regression analysis. Another reasonable justification for the limited use of policy-oriented measures is the methodological obstacles in aggregating different levels (tariffs) and forms (non-tariff policies) of protection into a single measure. Finally, a third reason why some fervent advocates of free trade make limited use of policy-oriented measures as proxies of trade openness in regression analysis may be linked to what others have found when such specifications were included: there is no direct, unambiguous relationship between tariff rates and NTB's barriers, and incomes¹³.

Section 3: The Nature of the Relationship Between Trade Openness and Well-Being:

What Does the Theory Say?

The uncertainty found in the existing literature about the nature of the relationship between trade integration and income should not come at surprise, since what the evidence actually displays goes hand in hand to what trade theory could sustain. As epitaph of one of the most comprehensive analysis about trade theory, Edward F. Buffie concludes, “If defenders of protection are too quick to dismiss the policy prescriptions of neoclassical economics, it is equally true that proponents of

¹³ See Sachs and Warner (1995), Edwards (1998), Harrison (1998) and Wacziarg (1998).

export promotion have repeatedly made claims far stronger than either theory or empirical evidence can support...At present, far more is known about the consequences of bad trade policy than about the makeup of optimal trade policy” (2001,5).

In this line of thinking, Bardhan (2006) summarizes plausible theoretical cases in which trade liberalization -contrary to what classical trade theory suggests- could lead to lower wages or incomes, among them: (a) in a Heckscher-Ohlin model, if a poor country possesses huge endowments of non-labor factors of production (i.e. mineral resources); (b) in a three-good model (non-tradable, exportable and importable), if some factors of production are not mobile across sectors (i.e. labor). Under this logic, for example, displaced workers due to external competition may face high restrictions to move to other occupations because of rigidities in the labor market such as inflexible laws, credit market imperfections and lack of access to retraining; (c) increased competition may encourage local producers to rely on low-waged, less productive labor force to reduce costs; and, (d) cost pressures could persuade business to outsource some services, part of them from the informal sector, resulting in the substitution of formal jobs by low-waged ones.

Existing differences in factor productivity among participants in free trade, no matter their initial factor endowments, could also substantially change the income-convergence predictions of classical trade theory. As an example, Easterly (2004) argues that the relative scarcity of labor in a rich country could be largely off set by

higher relative productivity in this factor, allowing the wealthy economy to become labor-abundant and, therefore, to export labor-intensive goods. Under a scenario dominated by significant differences in labor and capital productivity in favor of developed countries, trade integration may foster income inequality among rich and poor countries rather than favoring their confluence.

Results from trade theory models particularly applicable to developing countries go also against to what classical economics propose about the interactions between trade protection levels and income. Based on an optimizing dynamic model that incorporates export, import-competing and non-tradables production, Buñie (2001) build a theoretical framework for emerging economies that assumes underemployment, underinvestment and a governmental budget constraint at the initial equilibrium. To achieve the highest level of employment, two different trade policies can be chosen: an escalated tariff structure (low barriers to capital goods, medium to intermediate goods, and high to consumer goods) plus export promotion (subsidies) *or* import substitution, and then export promotion.

Even only considering rich economies in the analysis, theory contemplates scenarios in which free trade could damage wage earners. This possibility has been clearly explained by Rodrik (1997) in his influential *Has Globalization Gone Too Far?* According to him, trade integration has altered labor markets in developed countries in two ways: it caused (1) the inward shift of the demand for low-skill labor and (2) the increase on its elasticity. The first negative effect on wages could be

potentially significant when trading with developing countries endowed with abundant low-skilled labor. Since most global trade engages only rich nations, this effect is expected to be small. However, the second effect takes place regardless the identity of the trade partners. The increase in the elasticity of the demand for low-skilled labor makes easier for employers to substitute workers, by acquiring imports or investing abroad. As a consequence, worker's power to bargain is severely damaged, increasing earnings volatility and reducing non-wage benefits.

Therefore, according to what existing empirical evidence and trade theory have to say, there is no direct, unique, indisputable or unambiguous relationship between trade integration and increased income. Trade theory, however, is one step forward: at least, it has suggested the possibility of a contingent association regarding free trade and income, even identifying some of the conditions under which opening up the economy to international markets could translate into higher productivity and wages. Now, it is the turn of its research counterpart to try facing the same challenge.

Section 4: New Challenges for Empirical Research: In Search of a Contingent Relationship Between Free Trade and Well-Being

It is relatively easy to find theory models showing that the impact of trade liberalization on income *depends* on factors beyond trade policy. It is difficult to find empirical exercises testing for the same interaction. In fact, it was not until the end of 2005 that two studies sponsored by leading international institutions started to think

about the possibility of an empirical conditional relationship between free trade and economic or alternative measures of well-being. In this direction, the *Human Development Report 2005* dedicated significant attention in identifying external and internal conditions that countries should enjoy to unleash social benefits in a context of free trade. Among the former, multilateral and reciprocal “Rules of the Game” offer the greatest potential for human development at global scale. Unfortunately, the current dynamic in establishing rules governing international trade severely restricts low-income countries prospects for development since it imposes high market restrictions to their more competitive products and, at the same time, it constantly compels them to open their borders in a broader manner. But –the document continues-, even if fair, equally enforced international rules are taken for granted, trade liberalization still could not result in tangible social benefits in the absence of some within-country policy actions. This internal agenda to be implemented includes the development of an industrial and technological strategy, the adoption of a gradual tariff liberalization program, the inclusion of disadvantaged populations into formal markets through the provision of basic capabilities, the creation of safety nets, and the acceptance of social and environmental costs involved in international trade. Although the study offers an in-depth and comprehensive discussion of the conceptual framework regarding the nature of a conditional relationship between trade integration and human development, it presents no quantitative, cross-country evidence supporting its main arguments.

Some empirical evidence backing the idea of a contingent interaction between trade openness and income is presented in Chang, Kaltani and Loayza (2005). Based on panel data growth regressions for the period 1960-2000 and using the Generalized Method of Moments (GMM) procedure to control for endogeneity problems and unobserved country-specific factors, the authors report a positive and strong effect of trade openness on economic growth, which is reinforced when certain levels of complementary, internal conditions are fulfilled, such as high school enrollment rates, commercial credit availability, access to basic public infrastructure, labor market and firm entry flexibility. The study describes the last three requirements as urgent since most developing countries have not achieved the minimum standards in those categories to experience economic gains from trade. Even though the investigation deserves the merit of opening what is expected to be an intense debate on a renewed nature of the interaction between trade and income, it reveals some important caveats. From the conceptual point of view, the study excludes external factors (i.e. the “Rules of the Game”) as determinant in the association between both variables and it focuses exclusively on the internal ones. Measurement errors, as explained above, are also persistent since trade shares to GDP are used as proxy to trade openness. In addition, to resort in the assumption that by-nature-time-varying-variables, such as institutional ones, have remained unchanged in the whole four-decade period under analysis (due to data availability problems) presents methodological and conceptual drawbacks. On one hand, it makes difficult to assess their impact on the dependent variable –unless more complicated and less reliable procedures are employed- since one of the main features of the GMM model consists in controlling for the unobserved country-

specific factors by eliminating the time-unvarying variables from the regression equation. Even if the time-unvarying variables are kept in the equation, their coefficients could not be identified in regression analysis. Furthermore, from a conceptual perspective, the assumption that institutional variables such as political regime, governance quality, labor market regulation, and firm-entry flexibility into markets have stayed unmoved in the last forty years lacks of empirical support and is not consistent with recent literature in the field of development that confers to changes in institutional factors a prominent role in explaining advances on progress. Finally, from the perspective of assessing the potentialities of international trade for human development, the study falls short in complementing the analysis by using a GDP-alternative measure of well-being as (possibly because it was beyond its purpose) as dependent variable and considering a wider spectrum of internal conditions that favors not only average economic and social gains but also their more equitable distribution.

Chapter 4: Filling the Gap in Empirical Research: New Ways of Looking at the Relationship Between Trade Integration and Well-Being

From the perspective of exploring the potentialities of trade integration on well-being, the existing literature exposes three main limitations. *First, the use of broader and alternative measures of welfare to complement the analysis has been absent.* The vast majority of studies has focused exclusively on the impact of trade openness on GDP related indicators, such as economic growth or income per capita levels, a linked but different exercise. *Second, the use of policy-oriented indicators, built with information from tariff rates, NTB's, and trade-restraining subsidies to measure trade openness is non-existent.* Instead, as discussed earlier, conventional literature on the field has employed proxies of trade protection that contain significant measurement errors. *Third, the search for a possible contingent or conditional relationship between free trade and well-being has not been a priority in the agenda of mainstream literature with the exception of sporadic and isolated studies, despite the fact that trade theory has long recognized that possibility.* The stock of related research has mainly targeted its attention on finding a direct, unique and unambiguous association between trade openness and average wealth, but it has not considered the possibility of a conditional connection between both variables. In other words, the literature has not tested the hypothesis that maybe trade integration has the potential to unleash positive economic and social benefits *only if* certain conditions,

within and outside the reach of national governments are in place. The proposed research intends to fill these gaps.

Section I: Using Alternative Measures of Well-Being

In spite of the multidimensional character of “quality of life”, for decades GDP per capita has primarily been used to measure aspects of well-being. For many economists, paraphrasing Daniel Cohen (2006), “a nation’s gross domestic product is the alpha and omega of economic development”. There appear to be two main reasons behind this preference. The first one responds to statistical matters. National income indicators have certain demonstrated advantages for statistical analysis, such as its broad spatial and temporal coverage and the lower probability of measurement errors that facilitates its use in comparative analysis. There are also practical reasons. GDP per capita, which is measured in monetary units, is a concept that is understood by and convenient for politicians, business people, and citizens in general. The simplicity in which it is communicated adds to its attractiveness. GDP per capita is, for many people, an exceptional simple way to express an extremely complex concept: the status of quality of life. In addition, GDP related measures are analogous to the system used to elaborate national accounts and, therefore, they can be easily associated with most macroeconomic indicators.

Although its expanded usage, extensive empirical evidence suggests that observed changes in indicators showing alternative dimensions of well-being and

changes in production per capita do not always go at the same rhythm, and, in some cases, even in the same direction. Some evidence reveals that, despite aggregate growth at the national level, poverty, unemployment, underemployment, and social exclusion could persist and, in some cases, continue to increase. In Latin America, for example, disappointing social results contrast with continuing economic growth registered in the last four decades, with the sole exception of the era dominated by the debt crisis in the eighties. Using data from 20 countries -17 of which are Latin American-, Foster and Székely (2001) show that, on average, the incomes of the poorest population not only did not grow at the same speed as GDP per capita, but also they improved at a considerably lower rate in comparison to high-income families. The diagnosis of the nineties is even worse. In average, 15% real growth in GDP per capita in the region contrasts with the expansion of unemployment and the return of poverty rates to levels observed at the beginning of the decade (Rey de Marulanda and Guzman, 2003). If the least favored do not benefit *pari passu* with economic growth or aggregate consumption, advances in production will solve the problem of poverty very slowly, if at all. In the same direction, Anand and Ravallion (1993) assert that the importance of growth rests on how its benefits are distributed in the community, and to what degree growth improves the provision of public services.

A straightforward explanation to the discrepancies observed in advances in well-being and those in average national income indicators rely on the fact that the concept of GDP was not created to measure social and distributional improvements. It was conceived to track changes in aggregate production and, in particular, to help

policy makers to diagnostic potential recessive economic cycles. As Paul Samuelson (1998) pointed out, the importance of the GDP is rooted in the fact that “it provides a general vision of the state of the economy... [and] allows one to judge whether the economy is contracting or expanding”. The United States was the first country in publishing a series of GDP figures in 1937, in an effort to understand the overall economic situation and to test alternative expansionary policies in face of the traumatic effects of the Great Depression¹⁴. At the beginning of the 1940s, the use of GDP related measures gained more relevance as they were utilized as inputs to plan military expenses in the context of the Second World War and the subsequent reconstruction of Europe through the Marshall Plan. In the next decade, when growth theory gained increasing followers and international organizations came into place as guardians of monetary and fiscal stability, the notion of GDP acquired mounting relevance for comparative analysis across countries and regions.

Given the limitations of GDP-related variables as indicators of quality of life, complementary and alternative measures of welfare are needed to deepen the analysis about the links between trade openness and well-being. For that purpose, two conventional measures of quality of life, infant mortality and life expectancy rates, will complement –along with income–the quantitative evaluation. Although it seems clear that infant mortality and life expectancy rates are conceptually different than

¹⁴ The original database was presented to the United States Congress in 1937 and was included in the report *National Income:1929-1935*. The project was assigned to Simon Kuznets, who led a working group in the Research Department of the Commerce Committee. Prior to and during the first years of the Great Depression, information about global economic trends was very fragmented. Those responsible for the economic policy of the United States designed their policies using isolated data, such as the growth of stock indices, automobile sales, and unreliable indices on industrial productivity of certain sectors (Froyen, 1998).

income (and eventually could contribute to the analysis by compensating for any measurement error in the dependent variable), it will be helpful to anticipate if both variables add new relevant information before quantitative analysis is performed. And, at least preliminarily, it seems to be the case.

Graphs N°6a through 6d display the simple correlation plots for average annual changes in GDP per capita for the period 1980-1995 versus levels in infant mortality and life expectancy rates in year 1995 at a global scale and only considering low-income countries in the sample, respectively¹⁵. In all cases, the association between economic growth and both variables does not display a clear, defined pattern. In fact, simple correlation coefficients are significantly small¹⁶. For purposes of deepening the evaluation about the links between trade openness and well-being, this investigation will use infant mortality and life expectancy rates as complementary to income to measure welfare in a broader manner.

Section 2: The Use of Policy-Oriented Measures of Trade Openness

Although tariff rates and NTB's, relative to conventional trade shares, contain more relevant information about trade policy, their calculation poses some challenges.

In the first case, any tariff measure should resolve the obstacle of aggregating

¹⁵ According to World Bank's classification, low-income countries are those with GDP per capita below US\$4,000 in PPP terms. By year 2000, 63 countries satisfied that condition.

¹⁶ When considering the whole sample, simple correlation coefficients between infant mortality and life expectancy rates and changes in income levels reach only -0.01 and 0.06, respectively. For low-income countries, those coefficients remain small (-0.03 and -0.12). The study performed the same exercise between *changes* in income and *changes* in both indicators of quality of life, showing the same results.

different rates across goods. Simple averages, import-weighted tariff averages, and custom duties as percentage of total imports are among the best known alternative solutions to the problem. However, these measures show some shortcomings. Simple average tariff, on one hand, underestimates (or overestimates) the importance of certain tariff lines by assigning all of them the same weight. Conversely, import-weighted tariffs may result in some inconsistencies: goods facing extremely high tariff rates (import value equal to zero) are assigned the same weight as goods subject to zero tariff rates. Lastly, custom duties as percentage of total imports miscalculate the level of trade protection by incorporating in the denominator the import value of commodities (i.e. oil, gas) that, in many countries, are not subject to tariffs but to other trade levies such as consumption excise taxes.

In the case of NTB's, the aggregation of diverse forms of trade restrictive policies (i.e. price controls, automatic licensing, quantity control, subsidies, and technical measures) constitutes the main challenge to surpass. Non-tariff coverage ratios (the percentage of total tariff lines subject to NTB's), although widely used, have the limitations of leaving aside differences in the severity of such policies and not taking into account the number of different types of NTB's imposed on each good.

Fortunately, a recent work by Kee, Nicita and Olarreaga (2005) makes a valuable contribution to overcome aggregation problems in both tariff rates and NTB's and builds two average ad-valorem levels of protection for each trade

restrictive policy instrument, which combined totalize the level of protection each country imposes on imports. Regarding taxes on imports, the authors calculate a Tariff Trade Restrictiveness Index, a weighted sum of protection levels built from tariff rates and import level data but also from the elasticities of demand for imports. By taking into account the sensibility of import values before changes in tariff levels, the approach goes beyond the conventional methodology used in the calculation of import-weighted tariff rates and reduces the possibility of trade protection underestimation. The index is expressed as an equivalent uniform tariff. Cross-country protection at the tariff level shows significant variation, ranging from 11% (OECD members) to 47% (most Sub-Saharan African countries).

The study also addresses the difficulty of summing up diverse forms of non-tariff measures, including agricultural domestic support in the form of subsidies, by estimating an Ad-Valorem Equivalent (AVE) for NTB's comparable to a tariff. The exercise consists of two steps. First, the quantity-impact of all NTB's on imports is calculated by predicting import values using country-specific characteristics (i.e. factor endowments such as land, capital and labor availability) and observing the deviations reported on imports in the presence of NTB's in the equation. As second step, the quantity effect is transformed into a price effect by using the import demand curve and the already available elasticity of demand for imports. Data report that trade protection of core non-tariff measures varies considerably, from *ad-valorem* 0% to 42%. AVE's of agricultural domestic support, on the other hand, go from 0% to 0.2% (which does not necessarily reveals low levels of protection in that sector but a very low dispersion of restrictive instruments across tariff lines). The highest AVE's

of agricultural domestic support are imposed by OECD countries. According to simple correlation analysis, higher levels of trade protection from core NTB's seems to be associated with higher average incomes (Graph N° 7a). This pattern is stronger when the relationship between agricultural domestic support and GDP per capita is under scrutiny (Graph 7b).

Combined, both the Tariff Trade Restrictiveness Index and the AVE's for all NTB's (including agricultural domestic support) yield to two overall measures of trade openness: the Overall Trade Restrictiveness Index (OTRI), which measures the total level of protection *imposed* by a country on imports; and the Market Access Trade Restriction Index (MAOTRI), an overall equivalent uniform tariff rate *faced* by exporters of each country in the rest of the world, built as a mirror of the first one. Since trade restrictions imposed by each country on imports are mainly influenced by domestic trade policy, this study will label OTRI as a measure of *Unilateral Trade Openness*. By the same token, given that most of international market access granted to each country's exports is the result of multilateral, regional and bilateral trade negotiations, MAOTRI will be used as a proxy of *Multilateral Trade Openness*. For both indexes, higher values are associated with higher trade restrictions and less market access, respectively. Data is available for 91 countries around year 2000.

Graph 7d displays the relationship between average income and Unilateral Trade Openness at a global scale. Even though trade restrictions from non-tariff measures increases with income, deeper tariff liberalization in rich nations (Graph

N°7c) results in a negative association between total trade protection levels and GDP per capita. On the other hand, trade restrictions faced by countries (Multilateral Trade Openness) are also inversely proportional to their average income. Exports from low-income countries face the highest trade barriers (a 20% equivalent tariff) in international markets, followed by middle (15%) and high-income economies (14%). (Graph N° 8a). Simple correlation analysis supports the notion that poorer countries face higher market access restrictions and also reveals that country-income group averages are not driven by particular cases (Graph N° 8b).

However, a point must be highlighted. Although poor countries *face* the most severe trade barriers in terms of tariff rates and NTB's, at the same time they *impose* the highest trade restrictions to the rest of the world. In net terms, low and middle-income countries impose to the rest of the world a 4% and 7% equivalent tariff, respectively (Graph N° 8a). The picture, nonetheless, changes when sector-by-sector analysis is performed. In agriculture, where developing economies enjoy competitive advantages, the situation is the inverse. Exports from low and middle-income countries confront the highest restrictions to enter international markets *even when* they impose the lowest trade barriers to agricultural products shipped from trading partners (Graph 8c). Now rich countries are those imposing a net trade protection equivalent to a 4% tariff rate to the rest of the world. This evidence supports developing countries' foreign trade policy standpoint: those supposed to be the primary "winners" in a context of free trade are bearing most of the costs derived from existing disparities in the "rules of the game", since the global markets in which

they display high levels of competence (i.e. the agriculture) remain relatively closed. The observed lower market access trade restrictions faced by low-income for agricultural goods relative to middle-income countries (39% vs. 43%, respectively) may be explained by the proliferation of preferential trade agreements granted by the United States and the EU to the least developed economies. Lower levels of protection conceded to favored poor nations in the agricultural sector may also account for the undefined pattern observed between level of trade restrictions and GDP per capita in regression analysis (Graph 7d).

Section 3: Taking Conditionality Seriously

In the Heckscher-Ohlin theoretical framework where free trade is presented as a win-win game, internal factors affecting bilateral trade are considered equal across borders. Countries engaged in free trade are presumed to possess similar social, economic and political domestic conditions capable of securing the free movement of factors of production (i.e. capital, labor and technology change) toward competitive sectors to achieve efficiency that ultimately leads to specialization and wage convergence.

However, these assumptions clash with reality. At the national level, asymmetries in stocks of human and physical capital, technological innovation, institutional and regulatory frameworks, geographical conditions, and in the degree of inclusiveness of the population -as citizens in the political arena and as consumers

and producers in the formal market- are huge across different societies, although they could make a difference in an environment dominated by global competition. When addressing the impact of trade integration on well-being, this study accounts for all these factors, as far as data is available. In other words, the research tests the hypothesis that maybe free trade has the potential to unleash positive economic and social benefits *only if* certain conditions, within and outside the reach of national governments, are in place.

Subsection 1: The Conditions

What are those conditions? The classification of the internal factors influencing the relationship between trade openness and well-being has been inspired by the nature of the expectations national governments and individuals in general have about globalization and free trade. As mentioned earlier, free trade policies have been politically embraced worldwide because not only they were conceived as a win-win solution towards global growth –with particular emphasis in keeping developing nations in track- but also to help poor countries to get their populations at the bottom of the social and economic pyramid out of poverty through a less unequal distribution of the benefits created by economic expansion.

In this sense, three “clubs” of internal conditions with the potential of shaping the impact of trade integration on well-being have been differentiated. The first group is integrated by internal conditions with probed major impact on *economic growth* according to conventional literature, which mainly includes variables determining

business competitiveness and market efficiency such as public infrastructure, financial depth, stock of human capital, level of technological development, the rule of law, and the protection of property rights. The potential impact of opening up the economy on *average* living standards could vary significantly depending on the magnitude of cross-the-border differences in factor productivity, transaction costs, and overall country-risk. For instance, a good example to show how inadequate domestic conditions linked to business competitiveness can offset or restrain the possibilities offered by trade liberalization consists in examining the differential between the cost faced by some developing countries to access international markets versus the cost of shipping their merchandise to the same destination. On average, 32 Latin American countries face a 2% tariff to enter the U.S. market; however, they pay freight costs as percentage of total merchandise for 8.3%, when the world average only reaches 5.2% without controlling by geographical distance (U.S. Census Bureau, Department of Commerce, 2000). For many Latin American countries the main obstacle to gain access to the U.S. market is not longer the tariff, but the transport cost (IDB, 2001).

Variables believed to favor a *more equal distribution* of wealth and opportunities for well-being composed the second club. By nature, this type of internal factors facilitates the inclusion of individuals -as citizens in the political arena and as consumer-producer agents in formal markets- by providing them with rights, resources and capabilities to take advantage of new opportunities. Among them stand out the practice of democratic values and the exercise of basic political rights.

Democracy, even in its more incipient versions, secures a minimum exercise of checks and balances within the government branches. This feature, combined to basic political rights as free speech and the independence of the press, allows most of the government actions and policies to be scrutinized and the demands of the population to be heard. In this setting, rent seeking practices and economic and social policies favoring exclusive groups of society are censored and limited in comparison to other political frameworks. As Sen (1994) asserts, no famine has occurred in a democracy, and particularly, in a society enjoying free press. For example, one of the single most relevant factors that determine how inclusive a democracy is in procuring its members relatively acceptable chances to engage in society and take advantage of new prospects offered by trade integration is citizen identity (IDB, 2006). From a social point of view, undocumented citizens cannot access most social services (they may not be detected, or the identification card or birth certificate is a requisite document), enroll in school, or even marry. From an economic perspective, they are not able to open a bank account, apply for credit, open a business, or register property, necessary requirements to successfully take advantage of the opportunities generated by free trade. According to UNICEF (2006), 30% of total births are unregistered worldwide every year; Sub Saharan Africa is at the top of the list with 70%, followed by South Asia (63%), Middle East (30%), and Latin America (15%). In some areas of Bolivia, 90% of the population lacked a valid form of identification, and the majority was not included in the civil registry (Duryea, Olgiati and Stone, 2006).

All factors contained in the first two “clubs” are susceptible to change in the presence of active policymaking. National governments, with narrow or broad margins, could make a difference in the short, medium or large run if politically engaged on these reforms. However, there is a vector of factors *imposed by destiny and history* with significant potential to shape the effects of trade integration on human progress. These initial conditions, rigid to vary over time, have recently gained more attention as important determinants of economic and social development. This third “club” is composed by geography (i.e. distance to international markets, disease prevalence), ethnic diversity, and structural inequality.

The possibility of a conditional relationship between free trade and well-being appears to hold when descriptive data analysis is performed. Graphs N° 9, 10 and 11 exhibit simple correlation plots between the HDI and the two preferred measures of trade openness, the Unilateral and the Multilateral Trade Openness indexes¹⁷. Both are presented for two sets of countries: the top and the bottom 33% of the world sample for six variables, two from each “club” of the proposed internal factors. Concerning the variables associated with business competitiveness and market efficiency (the first “Club”), the slope of the regression line for the “top achievers” – in terms of public infrastructure and institutional quality- is more pronounced than that observed for the “low-achieving countries”, for both measures of trade openness (Graph N°9a through 9h). Human development and trade liberalization are not even correlated in economies with modest advances in areas with crucial impact on

¹⁷ Only for purposes of focusing and simplifying the analysis in this section, the HDI was chosen as proxy of well-being since the index comprises information from different measures of welfare: income levels, academic achievement, and life expectancy at birth.

business competitiveness (Graph N° 9b, 9f, 9h). These preliminary findings suggest that the association between trade openness –whatever measure of trade integration used- and well-being holds (or become stronger) only if certain levels of complementary policies have been undertaken.

Ethnically less diverse and less unequal societies appear to experience higher gains in human development in a context of one-way or two-way-street trade liberalization, (Graph N°11a through 11h). In most cases, ethnic plurality and structural income inequality operate as proxies of the distribution of overall opportunities (social, economic and political) and the degree of inclusiveness of the population as citizens into society and as consumer-producer agents in formal markets. Rey de Marulanda and Guzman (2003) summarize the channels through which, according to the literature, structural inequality may be associated with human development: market development, access to credit, and the medium voter preferences. First, in relatively less unequal societies, a strong middle class emerges forging a broad domestic demand for goods and services, resulting in a dynamic productive apparatus that, over the time, enjoys economies of scale and becomes highly specialized. Also, under this scenario local and national authorities participate more actively in the provision of public goods. In fact, public investment becomes more socially profitable, particularly in the transport and communication sectors, since the beneficiaries constitute the majority of the population. Second, when imperfections in the credit system arise, observed inequities in the distribution of wealth may lead to lower gains in human development. In other words, when the

single most important factor to access credit is the ownership of a collateral and human capital investment is indivisible, then quality education is only restricted to the wealthy. Over generations, the gap in skills deepens in the long term. Finally, the third channel relies on the “median voter theorem”, according to which structural inequity shapes the political process. This determines, in turn, the pattern of development of society. Assuming different initial factor endowments among citizens (capital and labor), a scenario dominated by great inequity lead to the allocation of fewer units of capital to the median voter. Consequently, strong political pressures from the electorate in favor of redistributive and tax policies emerge on the scene, damaging long-term investment and growth prospects.

Democracy, measured by the Polity Score, reports less consistent results. When testing the association between one-way-street trade integration and well-being, more democratic societies show higher gains in human development, as expected. However, results using multilateral trade openness go in the opposite direction: fragile democracies seem to benefit the most from free trade! The complexity and aggregate nature of the Polity Score may be behind these results. The index captures information from many dimensions intrinsic to political regimes, some of them involving very fuzzy concepts (Davis, 2005)¹⁸. Given the fact that the exercise of basic democratic rights as free speech, free association, and independent

¹⁸ The Polity Score results from the summation of two sub-indexes, the democratic and autocratic scores, both of them with values ranging from 0 to 10 and 0 to -10, respectively. Each of those indexes, in turn, are built based on perceptions from five different political regime dimensions: competitiveness of executive recruitment, openness of executive recruitment, constraints on chief executive, regulation of participation, and competitiveness of participation. According to Spiro (2005), the complexity in the construction of the Polity Score yield odd results: France “is not considered as democratic after 1981, but El Salvador is; and Belgium was not a democracy until 1956, but for 1946 Colombia, Guatemala, and Turkey are coded as democracies”

press are considered in this study as the most important channels through which democracy may unleash the potentialities of trade openness for human development, the Freedom House Political Rights Index, a variable that captures much more specific information, constitute a more adequate choice. Now, preliminary results from simple correlation analysis appear as expected. The association between trade integration (unilateral and multilateral) and well-being is more pronounced in societies where the practice of basic political rights is more expanded (Graphs N° 10c through 10h).

Chapter 5: Methods to be Employed: Quantitative Strategy

As mentioned earlier, this investigation proposes the exploration of the potentialities of trade integration for well-being by adding three innovative components with respect to the existing literature. *First, the use of broader and alternative measures of welfare to complement the analysis (particularly infant mortality rates, and life expectancy).* The vast majority of studies has focused exclusively on the impact of trade openness on GDP related indicators, such as economic growth or income per capita levels, a linked but different exercise. *Second, the use of policy-oriented indicators to measure overall trade openness, built with information from tariff rates, NTB's, and trade-restraining subsidies (including those adopted in the agricultural sector).* The new data set allows testing the impact of two different measures of trade integration on well-being: unilateral trade openness (trade restrictions *imposed* by each country on imports, which are mainly influenced by domestic trade policy) and multilateral trade openness (trade restrictions *faced* by each country's exports, also a good *proxy* of each country's international market access, largely the result of dual and multiparty negotiations). Instead, conventional literature on the field has employed proxies of trade protection -mostly quantifying trade outcomes-, which contain significant measurement errors. *Third, the search for a possible contingent or conditional relationship between free trade and well-being, which has not been a priority in the agenda of mainstream literature despite the fact that trade theory has long recognized that possibility.* The stock of related research has mainly targeted its attention on finding a direct, unique and unambiguous

association between trade openness and average income, but it has not considered the possibility of a conditional connection between both variables. In other words, this investigation tests the hypothesis that maybe trade integration has the potential to unleash positive economic and social benefits *only if* certain conditions, within and outside the reach of national governments, are in place.

Section 1: The Quantitative Approach

Table N° 1 summarizes the main features of the quantitative approach to be used. In total, the study uses two regression analysis settings (time-series and transversal cross-country), three measures of well-being (average income per capita, infant mortality rates, and life expectancy), five proxies of trade openness, and 32 control variables that, according to conventional literature, have an influence on welfare standards. Among those related to trade are: PPP-adjusted trade shares, calculated as the summation of total imports and exports relative to GDP expressed in purchasing power parity terms; predicted trade shares based on a gravitational model using geographical variables as calculated in Frank and Romer (1999); average tariff rates, defined as total tariff revenues as share of total imports; unilateral trade openness, the overall trade restrictiveness index, which measures the overall equivalent *ad valorem* tariff rate imposed by each country on imports; and the multilateral trade openness, the overall market access index that measures the overall equivalent *ad valorem* tariff rate faced by each country's exports in the rest of the

world¹⁹. The last two variables, built with information from tariff rates, NTB's, and trade-restraining subsidies (including those adopted in the agricultural sector), are taken from Kee, Nicita, and Olarreaga (2005). All variables have been included in both panel and cross-country analysis settings based on data availability. Although life expectancy is accessible for panel regression analysis, its significant low variability over-time make difficult to obtain consistent inferences across the selected model specifications.

Regarding the use of control variables, just five (public infrastructure, domestic credit, education achievement, macroeconomic stability, and democracy) cover the span of time required by panel regression analysis (1980-2000). The rest of them (27), which capture new developed, original, and relevant information for the purpose of this investigation, is only susceptible to be included in cross-country analysis. In this setting, to avoid multicollinearity problems when regression analysis is performed (some controls are correlated among them) and at the same time to take full advantage of the information captured by them, factor analysis is employed on three conceptually different groups of control variables (or "Clubs") believed to significantly influence well-being through different channels in a context of progressive trade integration²⁰. Before factoring, the variables were carefully grouped

¹⁹ Following Frank and Romer (1999), predicted trade shares are the result of a gravitational model where bilateral trade shares are regressed against a set of mainly geographical variables such as land area, bilateral distance, share border and landlocked indicators, population, and common language. The variable has passed the "American Economic Review" test, and since then, has been widely used as an outcome-oriented trade openness indicator in the existing literature.

²⁰ Factor analysis is used to find latent variables or factors among observed variables. In the presence of multiple variables and the increasing possibility of multicollinearity, it can be used to reduce their number based on shared similar characteristics. The resulting factors, which can be incorporated in further regression analysis, are able of explaining the observed variance in the original set of variables.

in these “Clubs” according to their intrinsic conditions to influence (1) economic growth, and (2) the distribution of the benefits generated by markets. A third group was composed by (3) conditions imposed by destiny and history -all of them found to be associated to structural inequality - with significant potential to shape the effects of trade integration on human progress. Annex N° 1 describes the data in more detail. The principal factor components resulted from factor analysis, which now shows acceptable levels of correlation for regression analysis, have been labeled as *Business Competitiveness and Market Efficiency* (Club 1), *Democracy* (Club 2), and *Structural Inequality* (Club 3)²¹.

The reason why factor analysis was not carried out to obtain a principal factor component for the second “Club” is straightforward. Even though several indicators measuring democratic values have been developed in recent years, the vast majority of them still suffer from cross-country sample size limitations²². This constraint leaves the investigation with two options, the Polity Score and the Freedom House Political Rights Index, both available for 152 and 187 countries for year 2000, respectively. Nonetheless, preliminary regression analysis showed in chapter four and extensive literature in the field (Spiro, 1994; Davis, 2005) suggest that the Polity

²¹ Factor analysis was heavily facilitated by the fact that the initial grouping of variables –based on theoretical criteria, in order words, based on how well every variable fitted the conceptual definition of each “Club” – matched the second grouping of variables, based on how statistically correlated they were with respect to each other. Simple correlation coefficient among controls variables and those resulting from principal factor components are shown in Annex N° 2. This finding supports the argument that, conceptually and statistically, the three groups of variables contain relevant but different information, and they may have an effect on well-being through different channels.

²² More than twenty different indicators measuring multiple dimensions of democracy have been constructed in the last five years, at regional and global scale. However, sample size ranges from 20 to 70 observations. The Inter American Development Bank (IADB)’s governance database, DataGob, has collected data from most of them (<http://www.iadb.org/datagob>).

Score may be too aggregated and also captures information from many dimensions of political regimes, some of them involving very fuzzy concepts. In addition, since the central goal of factor analysis is computing the commonalities of correlated variables, the essential procedures of this quantitative tool find completely useless the incorporation of two variables where, conceptually, the first encompasses all the information contained in the second one, which appears to be case. Given the fact that the exercise of basic democratic rights as free speech, free association, and independent press are considered in this study as the most important channels through which democracy may unleash the potentialities of trade openness for human development (for reasons already sustained), the Freedom House Political Rights Index, a variable that captures much more specific information about those singular democratic practices, constitute a more adequate choice.

A couple of precisions regarding the last group of variables. Although in principle the four variables contained in “Club 3” denotes cross-country geographical aspects, all of them have been intimately linked in the existing literature to structural inequality. In fact, the Index of Malaria Risk Transmission may not only capture the direct effects of land and labor productivity and transport costs on income as stated by Sachs (2003), but also is a good proxy for persistent social exclusion and inequality. Engerman and Sokoloff (1997) elaborate the thesis that former colonies geographically located in tropical areas –where coincidentally malaria disease incidence is the highest- developed over time social structures relatively more unequal than those with mild weather. According to the authors, tropical crops

(coffee, sugar, cotton) need abundant and cheap labor to achieve economies of scale to become profitable. In the former colonies, that restriction was relatively easy to solve through the use of slave labor force and the exploitation of indigenous communities. Over time, and even after the independence, these societies evolved fragmented and exclusive. Other two variables, Ethnic Fragmentation Index and Distance to the Equator, seem to capture similar information (La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998). The average income Gini coefficient for the period 1980-2000 is, in itself, a good proxy of structural inequality (Deininger and Squire, 2001).

Lastly, it is important to discuss up front a potential methodological problem when including policy-oriented trade openness measures in the right side of the equation. Theory suggests a possible endogenous relationship between trade protection and income (or eventually alternative proxies of well-being): trade liberalization may lead to higher income, but progressive industrialization may also encourage further reductions in trade barriers. Nonetheless, this study sustains that the presence of double causality in this particular case lacks of strong empirical evidence. Although it seems the case for most OECD countries, tariff liberalization in the developing world has been predominantly influenced by exogenous waves of structural reforms rather than the endogenous consequences of industrialization processes. As previously mentioned, local and global political economy played a crucial role in dismantling trade barriers in emerging economies through democratization, new global conceptions about development, and the discredited role

of centrally-planned economies. Contrary to the endogeneity presumption stands the fact that much of the trade liberalization reform in the developing world was carried out when the worst economic shock affecting those economies –the debt crisis of the eighties- was on its highest point. From all 73 developing countries undergone unilateral trade reforms since 1975, 63% undertook such reforms in the beginning of the nineties (Wacziarg and Welch, 2003). Previously displayed data also seem to tell a different story. Even though per capita income is negatively correlated with *tariff* levels (Graph N° 7c), the association between the former and trade protection from core NTB's and from agricultural domestic support policies is exactly the inverse (Graphs N° 7a and 7b). In other words, maybe countries embark on further tariff rate reductions as they industrialize and become richer, but it is not the case for other important types of trade restrictive policies such as non-trade barriers and governmental support to specific sectors. In fact, when OECD members are excluded from the sample (from Graph N° 7d), the statistical significance of the displayed negative correlation between the overall trade openness index and per capita income evaporates.

An additional potential source of endogeneity comes from the relationship between institutional quality (which is partially contained in “Club 1”) and average income. If good institutions foster economic growth, then it is plausible that progressive richer societies will be keen to promote further improvements on economic and social institutions. The issue is widely discussed in La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998), Acemoglu, Johnson and Robinson (2001), and

Rodrik, Subramanian, and Trebbi (2002). Although the presence of endogeneity between “Club 1” (the principal factor component from 27 different variables, in which the rule of law is the only variable containing information about institutional quality) and average GDP per capita could be challenged, this investigation will include results from regression analysis using settlement mortality rates as instrument for “Club 1”, the Business Competitiveness and Market Efficiency factor component, when regressed against income per capita and life expectancy rates. This study expects to find no significant changes in such results in comparison to those reported by OLS regression analysis²³.

Section 2: A “Building Block” Strategy

The quantitative approach follows a “building block” strategy. As analytical starting point, literature-driven model specifications and conventional data used to gauge the impact of trade openness on well-being are tested to replicate the standard experiment, using fixed-effects panel regression analysis for the period 1980-2000. As second step, and building on the results from the time-series framework, conventional measures of trade openness are interacted with the five available internal complementary conditions, in search of evidence of a possible conditional association between trade integration and indicators of quality of life. Results are

²³ Settlement mortality rates were taken from Phillip Curtin (1989, 1998) and are available for 64 countries. According to Acemoglu, Johnson and Robinson (2001), the institutional building process experienced in the former colonies was mainly influenced by the feasibility of developing settlements of newcomers after the European conquest. In turn –they argue–, the probability of settlement expansion was mostly affected by geographic conditions such as the incidence of tropical diseases. In places with low tropical disease prevalence, European-style institutions were reproduced; in territories with high disease risk transmission, only natural resource extractive states were established.

contrasted with those found by Chang, Kaltani and Loayza (2005), who performed very similar experiments. By this point, aside from adding infant mortality rates as an alternative measure of well-being, the quantitative work is just reproducing existing efforts and contrasting results. Once this benchmark analysis is done, the study moves to cross-country analysis, where most of the original contribution is done, by progressively adding more relevant, newly developed data. Now, using OLS regression analysis in a proposed model specification that incorporates the factors labeled Business Competitiveness and Market Efficiency, Democracy, and Structural Inequality as control variables, the study first compare findings when both standard - outcome-oriented proxies of trade openness (trade shares)- and the preferred -policy-oriented measures of trade liberalization- are included separately as main explanatory variables. Then, it includes simultaneously the four trade openness measures to evaluate the robustness of each one. Results are also contrasted when income per capita and life expectancy are incorporated separately as indicators of quality of life. Finally, in the same transversal cross-country arrangement, the three “Clubs” of internal conditions are interacted with the favorite trade liberalization indexes - unilateral and multilateral trade openness- in search of a conditional association between trade policy and well-being.

Section 3: What to Expect from Panel Regression Analysis?

As showed by conventional literature on the field, **the study expects to find a strong and significant effect of PPP-adjusted trade shares on incomes but, unlike**

the same sources, these results would receive quite different interpretations.

Trade shares, being a poor proxy for trade integration (it denotes trade *outcomes*, not *policies*), may enter the equation as statistically significant because they contain lots of information from complementary policies affecting economic growth, geographical variables, and demographic conditions (i.e. population density). This effect could be amplified by the fact of having very few controls in the equation. They also may reflect the impact of international economic cycles in countries highly dependent on export-oriented commodities, since changes on sales overseas are significantly sensitive to variations in international commodity prices, as experienced over the past two decades (Birdsall and Hamoudi, 2002).

As for predicted trade shares based on geographical data, the investigation anticipates significant although sign-inverted coefficients. Since this outcome-oriented trade indicator comprises significant geographical information, and the latter, in turn, is intimately associated with structural inequality, it should not come to a surprise if the mentioned proxy of trade openness reports a negative and strong relationship with well-being along different model specifications, as demonstrated by evidence found in the literature on income and inequality. Joining efforts in search for the same explanation, Rodrik (2002) identifies public health and institutional quality as additional channels through which trade –measured with data on geography- can affect income, negatively. Once again, this anticipated effect could be amplified in panel regression analysis due to the inexistence of a variable in the equation controlling by asset distribution patterns. On the other hand, average tariff rates, even

though a better approximation to trade integration since they contain some information about policy, are expected to be sensible across model specifications because they do not encapsulate evidence from the other important sources regarding trade restraining policies such as NTB's and subsidies, which paradoxically are considered in the actual debate about trade integration and development as determinant in explaining cross-country differences in trade protection levels.

With respect to control variables such as **public infrastructure, domestic credit, education achievement, and macroeconomic stability, they are expected to enter the equation with strong, robust, and significant coefficients when regressed against income, supporting the vast evidence presented by the literature on economic growth.** Nonetheless, there is a high probability that some of them with no clear impact on income distributive patterns could appear not significant in explaining differences on welfare indicators that change on the margin, such as infant mortality rates. Domestic credit (measured as total credit directed to the private sector relative to GDP) is a good candidate to be dominated by this effect. In fact, public infrastructure (through better physical access to markets and social services), education (more and better job opportunities), and macroeconomic stability (improved purchasing power) could have a more direct impact on welfare distribution arrangements than that predicted from private credit, whose effects depend on a series of assumptions, such as the type of allocation of the financial resources and their productivity. Finally, democracy -because of the aggregate nature and complexity of the Polity Score- could yield inconsistent and not anticipated results.

In the time-series framework, the investigation foresees to find evidence of a conditional relationship between trade openness and well-being. Since both conventional trade openness indicators and control variables are expected to register strong and significant coefficients in the original model specification, then trade-based interaction variables are also supposed to report explanatory power when regressed against indicators of living standards. Once again, these results may be contaminated by severe measurement errors contained in the main independent variables as well as by the limited relevant information contained in few control variables.

Because of data restrictions imposed by the particularities and innovations of the proposed hypothesis, cross-country regression analysis becomes the best quantitative approach to address the research question. The policy-oriented overall measures of trade integration, which are supposed to correct the severe measurement errors presented in conventional proxies of trade openness used in panel regression analysis, are only available for one point in time, around year 2000. The study faces similar limitations regarding the inclusion of new developed and relevant control variables in the model (encompassed in the three “Clubs” of internal conditions), additional data that feed and improve the time-series setting by incorporating new and broader information from multidimensional policy areas and structural country-specific characteristics beyond just growth-driven factors.

Section 4: Then, What to Expect from Cross-Country Regression Analysis

First, regressed against income and now controlled by much more relevant information, both conventional trade shares should appear not significant, supporting one of the study’s main points. This result should be conclusive if the statistical irrelevance of both measures persists in the presence of all other trade openness indicators in the same equation. For their part, **the three “Clubs” of internal conditions are expected to report strong, robust, and significant coefficients.** When replacing income by life expectancy as indicator of quality of life, two notorious changes should occur. On one hand, it is likely that PPP-adjusted and predicted trade shares –as shown in extensive literature- explain life expectancy. However, as this investigation defends, it is highly plausible that the resulted strong association between both variables may not reflect the virtues of trade in terms of human progress, but those of technology and information transmission – highly correlated with trade shares- on health status (Deaton, 2004). On the other hand, the cluster of variables comprising information from growth-driven factors (the first “Club”) may not enter significantly in the equation because they are well fitted to explain cumulative measures of well-being (income) but not necessarily distributional ones (life expectancy) ²⁴.

With respect to the unilateral and multilateral trade openness indexes, the investigation expects to find the first not significantly associated with well-

²⁴ Guzman (2006), testing the importance of institutions, trade openness, and geography on well-being, finds very similar results when regressing trade shares against life expectancy and controlling for additional variables.

being, but the second strong and highly related, across diverse model specifications before interacting it with complementary internal conditions. Trade theory and evidence found from General Equilibrium Models (GEM), an econometric-alternative tool used to address the impact of trade liberalization on welfare, could be very informative to understand what to expect from the coefficients of the preferred measures of trade integration, the unilateral and the multilateral trade openness indexes²⁵. According to theory, trade liberalization may impact household's income through three channels: changes in prices of consumption goods (via domestic tariff reductions), changes in tax burden or subsidy systems across socio-economic segments of the population (through eventual changes in tax policy caused by losses in import duties or the creation of safety nets to cushion the effects of external shocks), and changes in labor market conditions (the net outcome from the creation and the destruction of jobs as consequence of deviations in relative trade protection levels across productive sectors) (McCulloch, Winters, and Cirera, 2006; Bussolo and Round, 2004; Vos, Taylor, and Paes de Barros, 2002). Nonetheless, based on results from GEM's that quantitatively evaluate the relative importance of those channels in transmitting the effects of tariff reductions on household's incomes, the third channel –changes in labor markets- has been, by far, the most important (Hertel, Preckel, and Reimer, 2001; Hertel, Ivanic, Preckel, Cranfield, and Martin,

²⁵ General Equilibrium Models (GEM) are quantitative models that simulate the real dynamics of the economy. In their design, they incorporate complex interrelations among sectors and agents in the economy such as firms, families, and the government. GEM models are now widely used to assess the impact of policy reforms across sectors and household's welfare in countries, regions, and even the world. They report disaggregated results at the microeconomic level, which are consistent with the macroeconomic accounts.

2003; Ganuza, Morley, Robinson, Vos, 2005; Bussolo and Lay, 2003; Bussolo and Mensbrugghe, 2006).

Based on these two pieces of information, multilateral trade openness has more chances to appear significantly associated to welfare indicators because it has the potential to account for very significant changes on the *demand* for employment by tracking gains (or losses) in global market access. For its part, one-sided trade liberalization alone, through the dynamics of its three transmission channels, could result in a zero-sum game in terms of general welfare, since at these stances trade policy is more dominated by its distributive rather than income-generating forces. In fact, adjustments in relative internal prices favoring the urban consumer-oriented household used to do so at the expense of small rural producers, and vice versa; the funding of pro-poor safety nets tends to hurt the disposable income of middle class families via a grater tax burden to formal employees; the reduction in the tariff of inputs benefits local industries specialized in the production of consumer goods but hurts infant manufactures operating along the production chain. Moreover, internal labor movements (controlling by any change in cross-the-border market conditions), may result in either increases or reductions in total employment depending on the labor-intensiveness of the favored sectors.

Regarding the fundamental question of the investigation, a conditional relationship between trade openness and well-being is expected to hold in cross-country examination. For reasons related to those exposed in the previous paragraph,

the study anticipates that multilateral trade openness (trade restrictions *faced* by each country's exports, also a good *proxy* of each country's international market access, largely the result of dual and multiparty negotiations) **will show significant explanatory power over indicators of quality of life *only if* some internal conditions or complementarities (captured in the three "Clubs") are fulfilled.** **This result implies finding strong and significant coefficients for the trade-based interaction variables, but weak ones for those corresponding to the trade openness index alone in the same equation.** This finding would go hand in hand with the main argument sustained by this study, which has permanently pointed out that according to trade theory and empirical evidence found in econometric-alternative tools, the effect of trade liberalization on welfare (particularly on income) depends on diverse assumptions and policy complementarities.

More precisely, how the additional *demand* for employment generated by gains in international market access translate into *actual job opportunities and/or higher real wages* depends on multiple factors beyond trade policy such as labor flexibility, human capital accumulation, the degree of within-industry competition, the size of the informal sector, and the true shape of the labor supply curve, just to cite a few. First, the degree of labor mobility or the flexibility enjoyed by workers in moving towards trade-induced expanding sectors may determine the magnitude of beneficiary households. Second, gains through increases in household's wages also depend on their relative skills to perform successfully and become more productive in new market opportunities created by trade integration. Third, the market structure

along the production chain in the export-oriented sectors affects both price transmission and productivity gains. On one hand, reductions in prices of goods resulting from tariff liberalization would hardly benefit final consumers (households, enterprises) if market power were exerted at critical stages of the production/distribution process, capturing price-induced gains. On the other hand, market dominance may severely restrict the entry and exit of firms –and therefore hurting prospects for market efficiency- if used to restrict access to networks, to encourage exclusive dealing and refusal-to-deal practices (UNCTAD, 1999). Finally, the size of the informal sector and the initial level of employment –which influence the true shape of the labor supply curve- may determine if the eventual sectoral expansionary forces from free trade translate into either more jobs with unvarying wages, or unchanged in numbers but better-paid jobs.

Chapter 6: Results

Section 1: Panel Regression Analysis

Table N° 2 summarizes the results from fixed-effects panel regression analysis for the period 1980-2000, using conventional data found in existing works addressing the impact of trade openness on well-being, measured by income per capita and infant mortality rates. Separately, the three different proxies for trade integration enter the equation strong, highly significant, and showing the expected sign when regressed against GDP per capita. As argued, the interpretation of these results, however, differs from that stated in standard literature that defends the existence of a direct link between trade openness and income levels. First, trade shares may appear significant since they capture lots of information from diverse policies and reforms affecting economic growth, geographical and demographic variables. Second, predicted trade shares built with information from geographical data are, rather than a proxy for trade openness, a measure of structural inequality, health status, or institutional quality (Sachs, 2003; Rodrik, 2002); therefore, they are supposed to significant and negatively affect income, in line with the evidence obtained by most studies in the field. Average tariffs, the best available policy-oriented measure for panel regression analysis but paradoxically hardly used in this kind of experiment, is strong and significantly associated with income, suggesting that higher trade restrictive policies hurts income. The inconsistencies of conventional measures for trade integration are

more revealing when regressed against infant mortality rates, where no clear pattern is found.

As anticipated, public infrastructure, domestic credit, and education achievement are highly relevant explanatory variables. Domestic credit is however the exemption to the rule in explaining infant mortality rates along all model specifications (it appears with inverted sign), complying with the study's expectations, which stated that, in comparison to public infrastructure and education achievement, the way through which credit impacts distributional measures of well-being may be a long and winding road. Interestingly, macroeconomic stability, measured as inflation levels, is not significant in any specification, possibly because both trade shares are PPP-adjusted variables, and hence also incorporate information from changes in consumer price indexes. The Polity Score, the best accessible proxy for democracy in the time-series setting, reports inconsistent but expected results when using different measures of trade openness, mainly because it contains too aggregated information about democratic practices.

Now, when testing a possible conditional association between trade openness and well-being, all trade-based interaction variables are highly significant showing the expected direction, being democracy the sole anticipated exception (Table N° 3 through N° 7). Most of the coefficients for trade openness are also relevant explanatory variables, though they are systematically significant when infant mortality rates enters the left side of the equation. In other words, in the panel

regression setting trade openness seems, in general, to have a direct impact on quality of life and this effect is enhanced if public infrastructure is more developed, credit is available, and the stock of human capital is competitive. The findings are in line with those reported by Chang, Kaltani and Loayza (2005), who perform a very similar experiment using income as dependent variable and predicted trade shares as sole proxy for trade integration²⁶. The authors mainly rely on these results to build a case in favor of trade openness as a direct and indirect income-generating factor through the fulfillment of complementary policies.

Section 2: Cross-Country Regression Analysis

For a variety of reasons, findings from panel regression analysis are not sufficient to claim the relevance of trade openness in explaining, direct or conditionally, observed cross-country differences in indicators of quality of life. Though it was indeed necessary to perform such analysis to replicate what has been done in the field as an analytical benchmark, further cross-country regression analysis is indispensable to correct for severe measurement errors contained in conventional variables used to measure trade openness and to reduce omitted variable problems via the inclusion of more relevant and newly developed data sets that covers information from multidimensional policy areas and structural country-specific conditions beyond growth-driven factors. Furthermore, the access to original data

²⁶ Interestingly, the authors also found significant but negative coefficients for predicted trade shares when regressed against income; however, they are silent about the possible interpretation of such results.

amplifies the scope of policy areas susceptible to be interacted with trade integration, in comparison to what has been done in current available research.

Therefore, the first exercise in cross-country analysis consists of testing the significance of conventional measures of trade openness believed to contain significant measurement errors once controlling for more relevant information, and contrasting the results with those obtained in panel regression analysis. This is done in Table N° 8 (Columns 1 and 2). Now, when regressed against income, trade shares are not significant in a model that incorporates more and relevant information than that captured by control variables used in panel regression analysis, which is comprised in transversal analysis by principal component factors labeled Business Competitiveness and Market Efficiency, Democracy, and Structural Inequality from 27 different variables affecting well-being²⁷. In other words, once information from diverse policies affecting economic growth (“Club 1”) and from geography (“Club 3”) is added, as expected trade shares relative to GDP and predicted trade shares becomes insignificant, respectively. The results are confirmed when all four available indicators of trade openness are included simultaneously in the equation (Column 4). A recurrent finding, from which this investigation also cannot escape, is the strong and significant association between trade shares and health status indicators (Table N° 8; Column 5, 6 and 7). However, as already discussed, it is highly plausible that the resulted strong coefficients may not reflect the virtues of trade in terms of well-being, but those of technology and information transmission –highly correlated with trade

²⁷ Average tariffs were not included in cross-country analysis due to sample-size limitations. The number of observations reaches only 50 around year 2000.

shares- on health status (Deaton, 2004). The impressive diffusion of information and technology used to prevent common illnesses and to improve basic health care conditions, usually attributed to globalization but beyond trade policy, seems to have played a much more important role.

In turn, the coefficients of the preferred policy-oriented trade openness measures (that include information from tariffs, NTB's and trade-restraining subsidies such as those adopted in the agricultural sector) appear with the expected sign and level of significance (Columns 3, 4, 7 and 8). On one hand, the unilateral trade openness index, which measures the overall equivalent *ad valorem* tariff rate imposed by each country on imports, is not significant across model specifications, supporting the idea that one-way trade liberalization alone could result in a zero-sum game in terms of general welfare, since at these stances trade policy is more dominated by its distributive rather than income-generating forces, which evidence the conflicting interests between urban vs. rural households, low vs. middle classes, and local producers vs. import-oriented sectors. On the other hand, at first glance the coefficient of multilateral trade openness index (overall equivalent *ad valorem* tariff rate faced by each country's exports in the rest of the world and a *proxy* of each country's access to international markets) enters negative, strong, robust, and significant. As countries face lower access restrictions to international markets, their well-being increases. Given that gains in international market access may have a *potential* direct impact on production and demand for employment, and therefore,

may facilitate the achievement of economies of scale, its substantial relevance in determining well-being is, at least at this point, justified.

Internal conditions are relevant explanatory variables in determining differences in wealth accumulation (Table N° 8; Columns 1 through 4). The low correlation among them and their importance in explaining GDP per capita suggest they affect income through different channels. Countries with more competitive firms and more efficient markets, and societies where the respect for basic political rights such as free speech, free association, and independent press is more expanded, achieve greater income levels. For its part, structural inequality hurts general living standards. As mentioned, because in most cases structural inequality operates as proxy of the distribution of overall opportunities (social, economic and political), it is believed to affect negatively well-being through three channels: market development, access to credit, and the medium voter preferences. All these anticipated results are coherent with evidence registered in existing literature. Similar conclusions can be drawn when life expectancy acts as dependent variable, excepting for the coefficients of the cluster of variables comprising information from growth-driven factors. As also predicted, Business Competitiveness and Market Efficiency is key in determining differences in cumulative measures of well-being (income), but not necessarily distributional ones (life expectancy) (Guzman, 2006)²⁸. The investigation replied the

²⁸ Guzman (2006) reports that after controlling for competing factors and correcting for endogeneity problems, institutional quality shows a robust and strong association with average income; however, when the GDP-related indicator is replaced by the life expectancy in the same equation the significance of institutions evaporates in all specifications and cedes its hegemony in explaining cross-country income differences to geographic variables -such as risk of malaria transmission- which is believed to contain relevant information about distributional patterns of capabilities and opportunities in society.

basic model specification using instrumental variables to correct for potential sources of endogeneity between well-being and institutional quality, being “Club 1” the instrumented variable. Results do not differ from original findings²⁹.

Table N° 9 show the regression results when the unilateral trade openness index is interacted with the three “Clubs” of internal conditions believed to have a significant influence in a context of progressive trade integration. Results confirm that one-way-trade liberalization has neither a direct nor a conditional impact on well-being (measured by average income and life expectancy) even in the presence of complementary favorable conditions. Only the interaction term between unilateral trade openness and structural inequality is significant when regressed against income, which indicates that one-sided reductions in trade protection may lead to a general decrease in average living standards in highly unequal countries (Table N° 9, Column 4). Interestingly, in theory the interaction of the forces from both variables can actually yield such result: because one-sided trade liberalization produces mainly redistributive effects on income, in countries where socio-economic assets and opportunities are concentrated the “winners” from changes in trade policy are probable those possessing major financial and political resources to influence public policy.

²⁹ See results in Annex N° 4. Settler mortality rates are used as instrument for “Club 1”. Findings resemble those reported in original model specification when regressed against life expectancy rates. When average income enters the equation as dependent variable, unilateral trade openness reports marginal statistic significance. However, results should be taken cautiously due to a significant drop in the number of observations (from 71 in OLS version to 37 in the instrumented version).

Results of cross-country regression analysis including interaction variables between multilateral trade openness and control variables are displayed in Table N° 10. Now, controlling by relevant interaction variables and contrary to what was found in the basic model specification (Table N° 8, Columns 3 and 7), results show no evidence of a direct, unambiguous impact of multilateral trade openness on living standards. In short, the access to new markets, alone, does not guarantee neither the generation of wealth nor the achievement of improved social indicators when controlling by interaction terms. This seems quiet obvious. Even a significant enlargement in market size may have no economic or social returns if local producers do not posses export capacity and other minimal favorable conditions such as adequate technology, public infrastructure, access to credit, a business enabling environment, and so on. As also pointed out, even assuring the fulfillment of the former conditions, how the additional *demand* for employment generated by gains in international market access translate into *actual job opportunities and/or higher real wages* depends on multiple factors beyond trade policy such as the degree of labor mobility across sectors (labor flexibility), the household's relative skills to move and to perform successfully in new market opportunities created by trade integration (education), the market structure along the production chain in the export-oriented sectors (degree of within-industry competition), the size of the informal sector and the initial level of employment (the true shape of the labor supply curve).

Consistent with that line of thinking, the study finds acceptable evidence of a conditional relationship between two-way-street trade openness and indicators of

quality of life. In addition, the findings suggest that in a context of trade integration, complementary conditions may affect well-being for quite different channels. As argued, variables associated with the achievement of business competitiveness and market efficiency seem to complement gains in international market access in rising cumulative welfare indicators such as average income, but not distributional ones, like life expectancy, indicator that changes on the margin (Columns 2 and 6). The reason behind this logic is simple: market efficiency assures output maximization, but not necessarily equal distribution. On the contrary, the exercise of specific democratic practices promotes a better distribution of the benefits created by the access to larger markets, but appears to have a not significant role in inducing higher average incomes under two-sided trade integration (Columns 3 and 7). And that is because democratic regimes, though displaying no clear income-generating forces, as a minimum guarantee the respect for some basic values (i.e. free expression, voice, accountability), which facilitates the channeling of wide-ranging demands for better distribution of resources and opportunities for development.

According to the results from regression analysis, this investigation arrives to two conclusions. *First*, unilateral or one-way-street trade liberalization is not associated with higher levels of well-being, showing neither a direct impact nor a conditional one in the presence of complementary conditions. Therefore, in the case of unilateral trade openness the original hypothesis proposed by this study is rejected. *Second*, gains in international market access do not alone guarantee the achievement of higher levels of well-being, but it shows significant potential for development in

the presence of favorable internal conditions. Thus, in the case of multilateral trade openness, the original hypothesis is accepted.

Section 3: South East Asia and Latin America: The Importance of Education and Structural Inequality Defining Development Gains from Trade Openness

Latin America and Southeast Asia, in particular those countries characterized as “high-performance Asian economies” (HPAE), offer a helpful framework for the analysis of the impact of complementary policies on well-being in a context of progressive trade openness³⁰. Economic prosperity and social advances made by the HPAE and the delay in Latin American advancement were an indisputable reality as of the end of the twentieth century.

Several studies give ample statistical and empirical evidence about the remarkable patterns of economic growth, accumulation of human capital and indicators of well-being registered by the so-called “four Asian tigers” and the newly industrialized Asian economies. Table 11 summarizes some of the most important human development indicators for six Latin American economies and six high-performance Asian economies in the 1990s. On average, the standard of living and per capita production in the Southeast Asian countries in question are 30% and 80%,

³⁰ The HPAE includes the “four Asian tigers” (Singapore, Republic of Korea, Hong Kong and Taiwan) and the newly industrialized countries (Malaysia, Thailand, and Indonesia).

respectively, above what was registered by their Latin American counterparts³¹. When adding high life expectancy and more rapid accumulation of human capital, gains in human development are also significant.

Today those figures do not surprise anyone. What is really surprising is that only 40 years ago the situation was exactly the opposite. In fact, in 1960 the quality of life of an average Latin American was significantly better than that of an average inhabitant of countries that are now high-performance Asian economies. Table 12 reproduces the human development indicators for similar countries in 1960. The wealth generated by the economies of what are now considered part of the “Asian miracle”, represented on average barely half of what had been achieved in Latin America. With the exception of Hong Kong, none of the HPAE had surpassed the economic activity levels of the weakest countries in the Latin American sample, such as, for example, Colombia. Likewise, the standard of living in Southeast Asia was, on average, 30% lower than what was enjoyed in Latin America. Including the population of Indonesia in the calculation, in 1960 life expectancy in Latin America was 10 years higher than in the HPAE. In short, four decades ago the levels of human development were clearly more favorable for Latin America.

What happened in these 40 years? What did Latin America do or fail to do to have such disappointing advances in human development? In 40 years, the average

³¹ The standard of living, one component of human development, has been calculated on the basis of GDP per capita and taking into account the foundation that the level of income can act as an important medium or instrument to raise the quality of life (Sen, 1996). The index has been constructed on the basis of the square roots of the production values per person in order to reflect the marginal utility of income.

standard of living of the HPAE more than doubled (1.4 times) and that of Latin America had only modest improvement (0.26). While the GDP per capita in Southeast Asia nearly quintupled in the same period, the GDP per capita in Latin America barely grew by half of its 1960 value. As confirmed by the United Nations, in only 40 years the HPAE went from having the lowest advances in human development, to being classified as societies with greatest progress in human development at the end of the twentieth century. That means the citizens of these select economies can enjoy a level of life only surpassed by the populations of the member countries of the OECD.

Although different interpretations have been proposed to understand these two opposing paths (market-friendly vs. interventionist policies: World Bank, 1995; the role of the promotion of industrial, agrarian and social policies: Ranis, 1990; Haggard, 1994; Larraín and Vergara, 1993; Balassa, 1988; constructive vs. obstructive government interventionism: Dornbusch and Edwards, 1990; the effects of demographic evolution in economic growth: Williamson, 1993; Coale and Hoover, 1958), empirical evidence presented by this study could shed light about another possible interesting channel: the role played by the initial complementary conditions in a context of progressive trade integration in the configuration of the pattern of human development. Although the implementation of free trade policies were interrupted in Latin America in the seventies by the adoption of the import-substitution model, in the last thirty years average tariff levels in both regions

remained very close (see Graph N° 12), suggesting that openness to international trade, alone, may not explain such diverging development patterns.

However, the fulfillment of some internal complementary conditions to trade integration, such as the initial level of human capital accumulation and structural inequality, may explain such divergences. Figures included in Table 13 suggest interesting interpretations. The “four tigers of Asia” and the “newly industrialized Asian economies” were, individually and collectively, significantly more equitable with better human capital in contrast with Latin America in 1960. According to the Gini indices, not only was income more poorly distributed in Latin America, but the level of concentration of land ownership reached spectacular levels³². Malaysia, the most unequal society in the Asian region did not even approach the levels of inequity seen in the Latin American sample. In conclusion, the most equitable societies in their initial phases of development achieved greater advances in human development in a context of progressive trade integration.

The “initial conditions” of human capital and, above all, its potential for future decades, were also more favorable in Southeast Asia. In view of the fact that certain figures relating to human capital mask reality, it is necessary to analyze these figures with care. In spite of Latin America making notable advances in access to schooling, particularly primary school, compared to their Asian counterparts, the Latin American education system was unable to retain an already captive student population, which

³² In 1960, 5% of the *haciendas* (productive agricultural units) owned 80% of the land, while 80% of the small productive units were operated by owners of 5% of the land (Barraclough, 1973).

resulted in only a low number of students completing the education cycle. On average only 53% of the Latin American population in selected countries had access to primary school in 1960; nevertheless, barely 14%—nearly one quarter of those who registered—finished school. In contrast, 33% of the population in the HPAE were enrolled at least in primary school, but 18%—more than half—finished satisfactorily. The relatively low proportion of population without any type of formal instruction in Latin America reflects the ability of the education system to attract students, but it obscures the high percentage of students who drop out at the end of the first or second year of primary school. These dropouts could expand the ranks of those with limited or no preparation and who, in the most extreme case, would have represented 71% of the total population. The diagnosis was similar for secondary education and above in both regions. On balance, 31% of the total population of the HPAE had at least completed primary school in 1960, while in the countries analyzed in Latin America that figure rose to 29% of the population. In spite of attempts to recruit a larger number of students, which implied a major fiscal effort, there was a lower accumulation of human capital in Latin America.

Likewise, the potential for accumulation of human capital was favorable for Asian economies. For generations born in the 1960s, the possibilities for securing a basic education were significantly superior to those in Latin America. The rates of net enrollment for primary and secondary education in 1970 reached 87% and 37%,

respectively, in the HPAE compared with 83% and 25%, respectively, in Latin America³³.

Another interesting finding from the data is the case of Chile. Although the social improvements achieved by Chile do not resemble those recorded by most HPAE's, the positive relationship between acceptable initial complementary conditions to trade and well-being is strong. Chile was the best-equipped Latin American economy, in terms of labor force education and distribution of other productive assets, to take advantage of progressive trade openness (Table N° 11). At the same time, it was the most successful economy in achieving human development improvements in comparison to their Latin American counterparts.

³³ The net rate of registration is the ratio between the students registered in an education level at the ages corresponding to that level and the entire population of that age. The gross rate of registration is the ratio between the total number of students enrolled in a respective education level, without considering age, and the total population of that age cohort. To further explore the analysis of rates of registration, see Barro (2000).

Chapter 7: Conclusions and Policy Implications

In times in which the global community is going through an unavoidable process of integration with irreversible effects on the distribution of benefits and burdens across societies, assessing the impact of free trade on well-being becomes an important task. Addressing such a complex interaction, however, requires a good understanding of the true nature of the relationship between the forces shaping globalization and those fostering human development. Only after that, effective policies, at the national and international level, could be designed and implemented with the primary goal to reduce the already existent but increasing tensions created by the new economic model, whose consequences, unfortunately, have overflowed the frontiers defined by markets and could compromise the viability of the international order itself.

Based on very limited empirical and theoretical support, the argument that trade liberalization is a “one-size-fits-all” solution to development -with little regard to the social, economic, institutional, political and geographic particularities of each society- has already had profound effects in the developing world, by shaping trade policy in these economies and by creating expectations that are well beyond its reach. In the end, good intentions from fervent supporters of free trade could unchain the exactly opposite effect: new waves of frustration leading to potential social distress in the near future.

This investigation intended to contribute to the existing literature not only by incorporating new data and methodological approaches, but particularly by suggesting new and fresh ways to look at the interactions between trade openness and well-being. It also hopes to contribute to reconciling trade theory and empirical evidence on trade and development. Specifically, it insinuates the kind of free trade policies with greater potential to positively affect living standards, and the circumstances under which those policies may enhance their potentialities for human progress.

Three main lessons can be drawn from the whole analysis. First, trade liberalization tied to no external market concessions may report just short-term, specific, and limited welfare gains. One-sided reduction in trade protection, for example, may be a justified response under broad economic reform programs aimed at stabilizing relative prices and macroeconomic aggregates. Such policy could also be defensible if intended to define a consistent tariff structure according to the characteristics and comparative advantages of the economy. Lastly, the unilateral abandonment of trade restrictive policies, such as the dismantlement of subsidy programs, is a positive step when rent-seeking practices take advantage from policies supposedly designed to address much more benevolent purposes, as the correction of market failures and the search of improvements in efficiency. For the most part, trade theory, evidence from General Equilibrium Models (GEM's), and results from this investigation, suggest that the unilateral liberalization of trade may result in a zero-sum game since its redistributive forces (through adjustment in internal prices,

eventual changes in tax and social policy, and the recomposition of the labor market) prevail over the wealth-generating ones.

The “bulk” of the gains from trade integration seems to be associated with global market access. This is the second lesson. Given the fact that the more direct and the greater impact of trade liberalization on household’s income is channeled through adjustments in labor markets, the significant enlargement of market size may report net welfare returns since it has the *potential* to account for very significant changes on production and the demand for employment. And, because global market access is not a public good, the shortcut to aspire to it is, unavoidably, the reciprocal conferral of trade concessions through bilateral or multilateral trade negotiations. In this sense, calls for multiparty, reciprocal, and fair “rules of the game” governing international trade seem to find empirical support. Even classic trade theory, the most simplistic and optimistic portray of the impacts of trade integration, conveys such claim by predicting shared gains among participants of free trade only if cross-the-border trade restrictions are eliminated proportionally.

Finally, a third and fundamental lesson can be extracted: complementary policies and initial conditions are very important. Even by considerably expanding international market access, multilateral trade liberalization may not yield the expected positive results on well-being in the absence of some important favorable internal conditions. In this sense, multiparty and symmetric trade openness represents, more than a solution, an *opportunity* for human development. An opportunity in the

sense that some policies at the reach of national authorities, such as improvements in different dimensions of business competitiveness, the enforcement of the rule of law, the respect for democratic values, and the progressive inclusion of individuals as citizens and participants in formal markets, can make a difference in terms of human progress in a context of free trade, which, by the way, no society is able to escape. Likewise, although structural inequality is very difficult to overcome since it is rooted in historical and cultural phenomena and geography is immutable, the recognition of their role in shaping the impact of trade reform on well-being may be used in raising awareness about the importance of the implementation of policies to offset their potential damage on overall welfare. Examples of such policies are those aimed at reducing the disparities in education achievements and health status across the socioeconomic ladder, the creation of job training programs for displaced workers, and the implementation of conditional cash-transfer schemes. Overall, the presented findings support the implementation of policies conducive to a “National Agenda for Trade”, aimed at identifying and putting into practice sectorial policies with high potentialities for human development in a context of free trade.

The study should be clear at this point: according to the findings, trade openness, particularly access to international markets, is a necessary but not sufficient condition to reach prosperity. By the same token, complementary policies initial conditions are important to aspire to higher living standards, but through the exploitation of the opportunities offered by progressive reciprocal trade integration. Both trade openness and complementary conditions reinforce each other.

The conditional relationship between trade openness and well-being leads to a second thought: even though both symmetric international “rules of the game” and favorable complementary internal policies appear to jointly report a significant impact on living standards, it seems that the actual political debate, particularly in the developing world, is currently giving the first one a remarkable priority. This partiality in overweighting the unfair trade treatment as “the” explanatory cause of the world’s poor misfortune maybe risky, and unfortunately, it has already influenced public policy in low and middle-income countries. In fact, most emerging economies, judging by their budget priorities and the allocation of fiscal revenues, are placing little attention to creating safety nets or reallocating social spending in favor of the most vulnerable as a cushion against external shocks originated by the internationalization of trade. Tanzi (2000) at global scale and Rey Marulanda, Ugaz and Guzman (2006) for 19 Latin American countries show evidence suggesting that neither the increase on public spending nor a less regressive execution of fiscal resources in favor of the poor have occurred in both settings when global integration was in steady expansion. In this sense, the most valuable message from this investigation lies in the importance that both the reciprocal access to international markets and the pursuit of favorable complementary conditions should receive in the external and internal political debate about free trade and development.

Appendices

Appendix N° 1: Data Description and Sources

Appendix N° 2: Simple Correlation Coefficients: Variables Used in Factor Analysis

Appendix N° 3: Sample of Countries Used in Preferred Model Specifications

Appendix N° 4: OLS Instrumental Variables Cross-Country Regression Analysis.

Basic Equation

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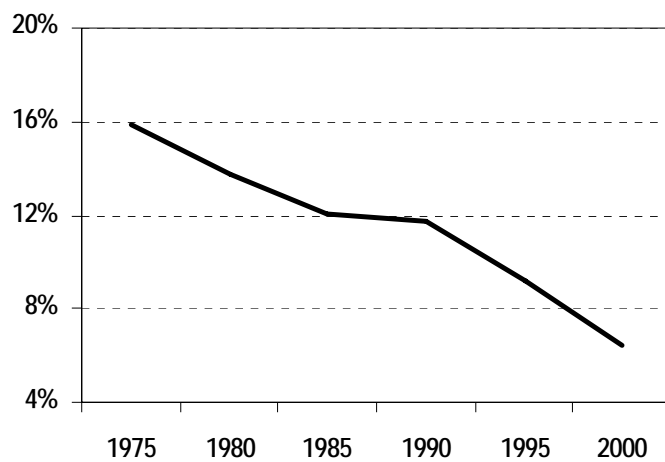
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http://www.wto.org/english/tratop_e/region_e/region_e.htm

Graph N° 1

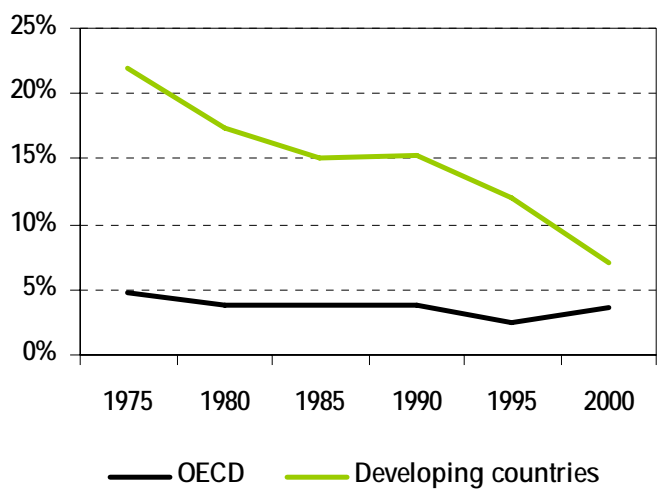
Average World Tariff ¹



Source: World Development Indicators. World Bank. 1/ Import duties as percentage of total imports

Graph N° 2

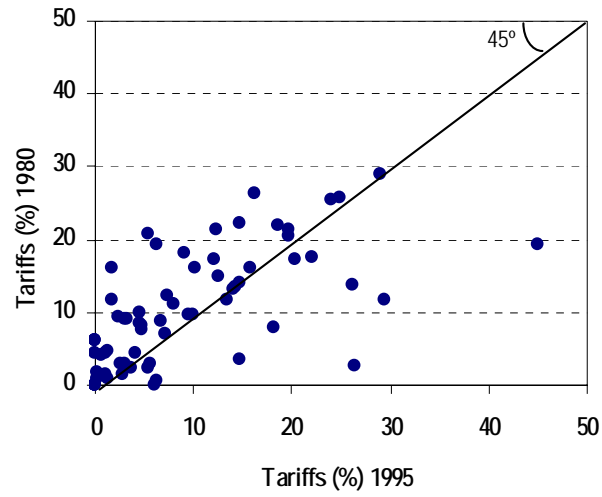
Average Tariff by Country Income Group ¹



Source: World Development Indicators. World Bank. 1/ Import duties as percentage of total imports

Graph N° 3

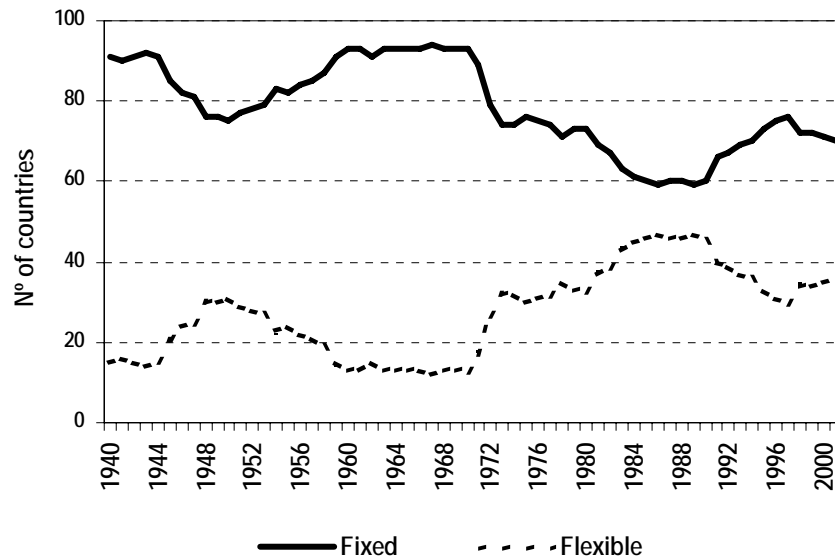
Average tariffs



Source: World Development Indicators. World Bank.

Graph N° 4

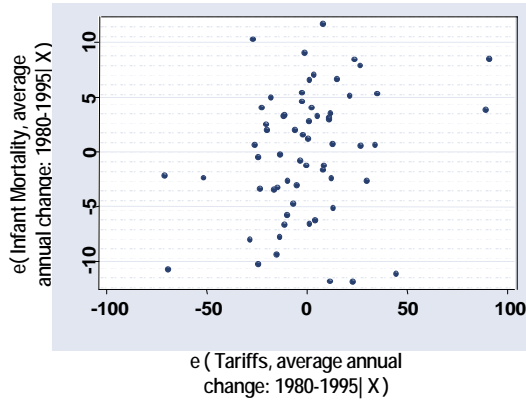
Fixed vs. Flexible Exchange Regimes: 1940-2000 ¹



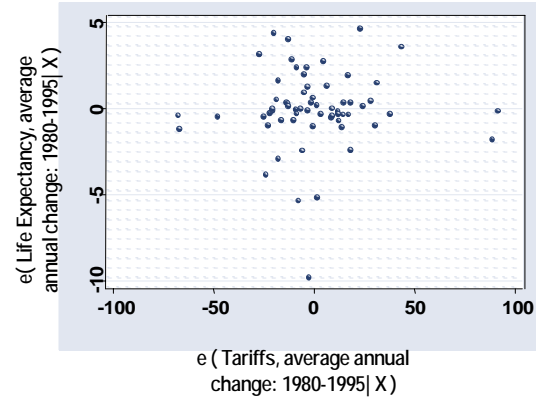
Source: Reinhart and Rogoff (2003). 1/ Fixed regimes aggregates de following cases: No separate legal tender; pre announced peg or currency board arrangement; pre announced horizontal band that is narrower than or equal to +/-2%; de facto peg; pre announced crawling peg; pre announced crawling band that is narrower than or equal to +/-2%; de factor crawling peg; and de facto crawling band that is narrower than or equal to +/-2%. Flexible regimes aggregates: moving band that is narrower than or equal to +/-2% (i.e., allows for both appreciation and depreciation over time); managed floating; freely floating and freely falling.

Graph N° 5

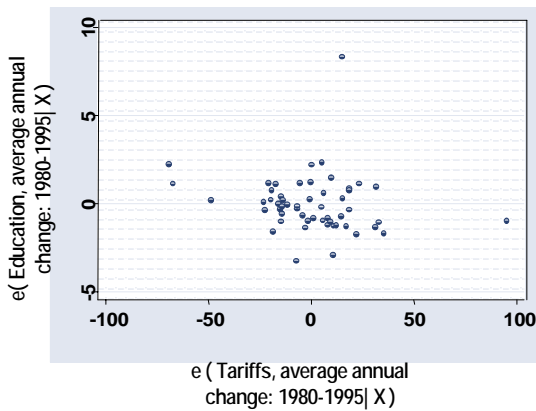
Trade Policy vs. Selected Indicators of Quality of Life: 1980-1995



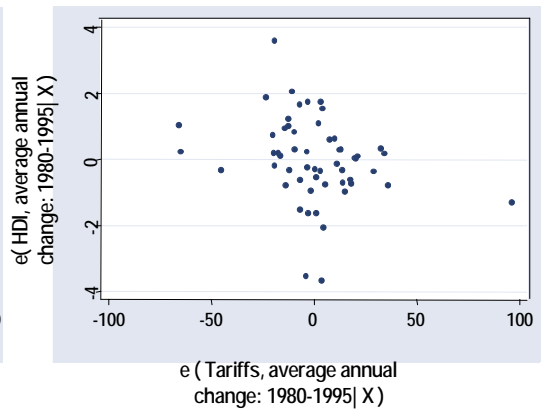
Graph N° 5a



Graph N° 5b



Graph N° 5c



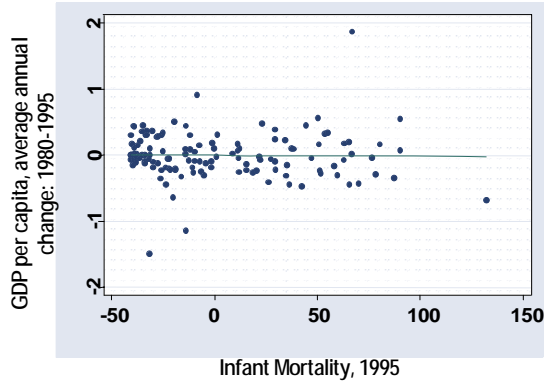
Graph N° 5d

Source: Human Development Report, United Nations (UN); World Development Indicators. World Bank.

Graph N° 6

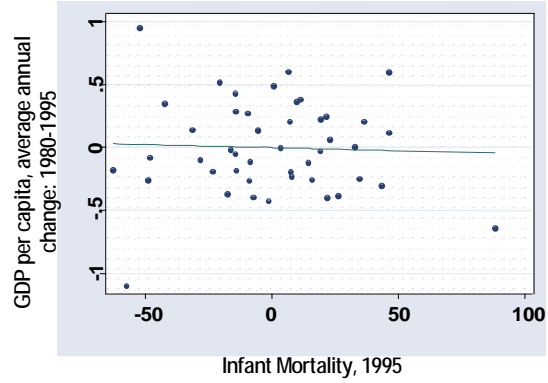
Alternative Well-Being Measures and GDP per capita, 1980-1995: Simple Correlations

All Countries



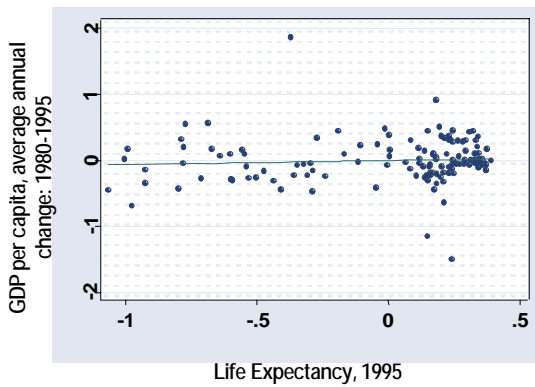
Graph N° 6a

Low-income Countries



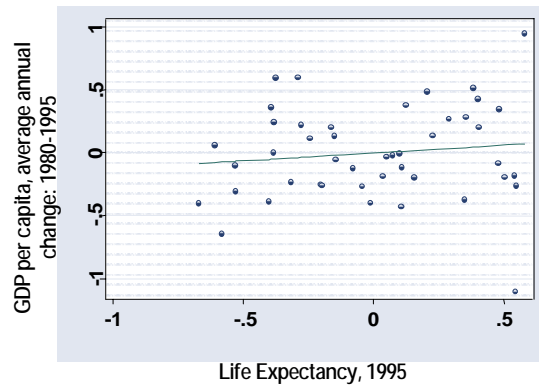
Graph N° 6b

All Countries



Graph N° 6c

Low-income Countries



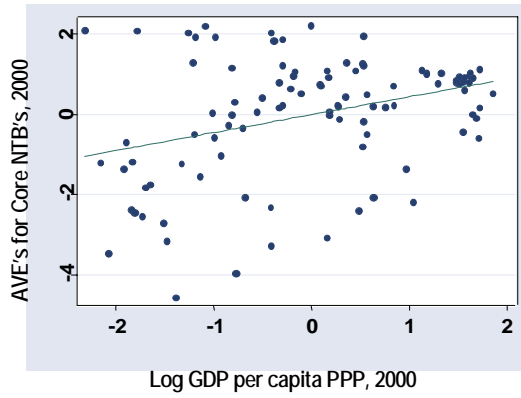
Graph N° 6d

Source: Human Development Report, United Nations (UN); World Development Indicators. World Bank.

Graph N° 7

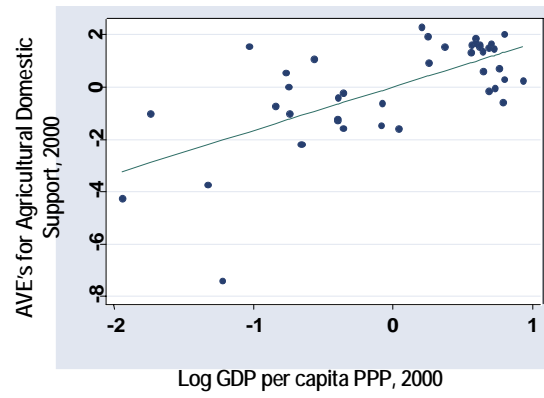
Trade Protection and Income, 2000

Core NTB's Protection



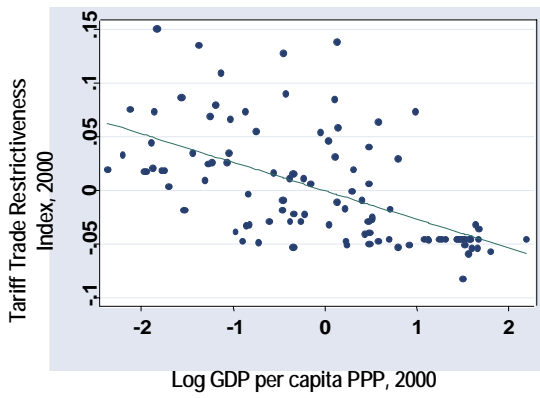
Graph N° 7a

Agricultural Domestic Support



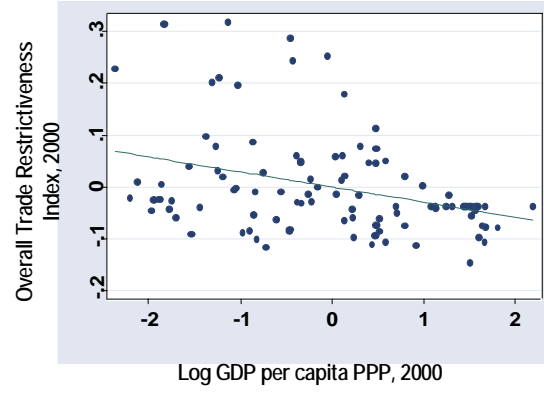
Graph N° 7b

Tariff Protection



Graph N° 7c

Unilateral Trade Openness

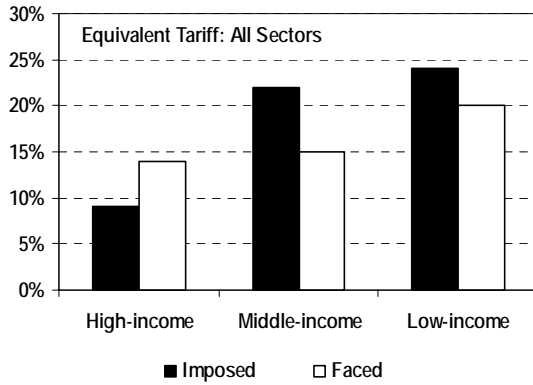


Graph N° 7d

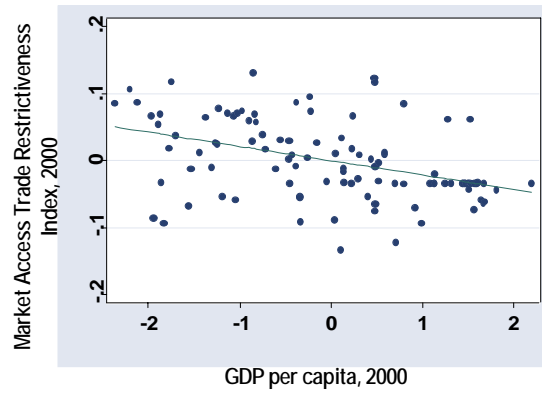
Source: Kee, Nicita and Olarreaga (2005); World Development Indicators. World Bank.

Graph N° 8

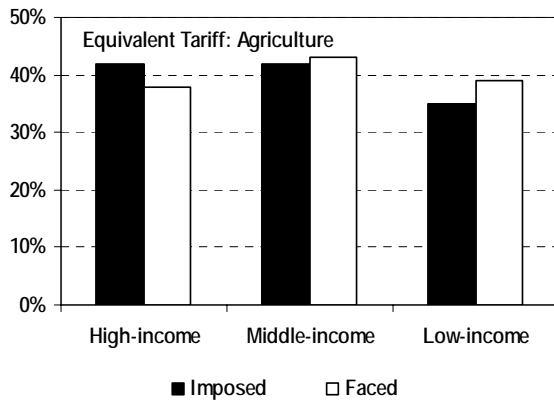
Unilateral (Imposed Restrictions) vs. Multilateral (Faced Restrictions) Trade Openness, 2000



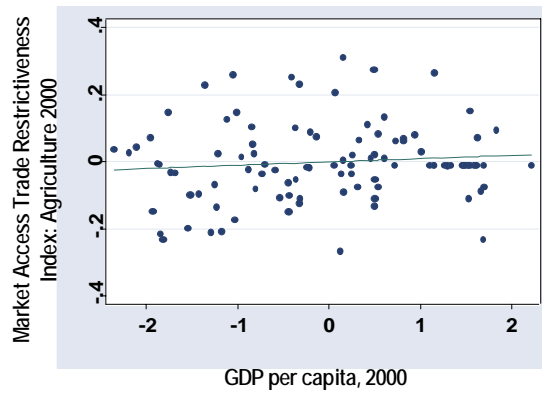
Graph N° 8a



Graph N° 8b



Graph N° 8c



Graph N° 8d

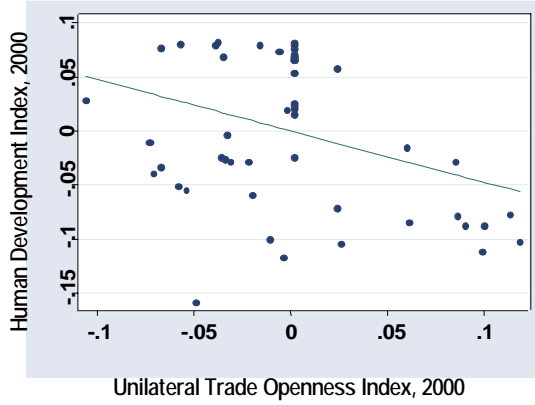
Source: Kee, Nicita and Olarreaga (2005); World Development Indicators. World Bank.

Graph N° 9

Human Development and Trade Integration (Club 1)

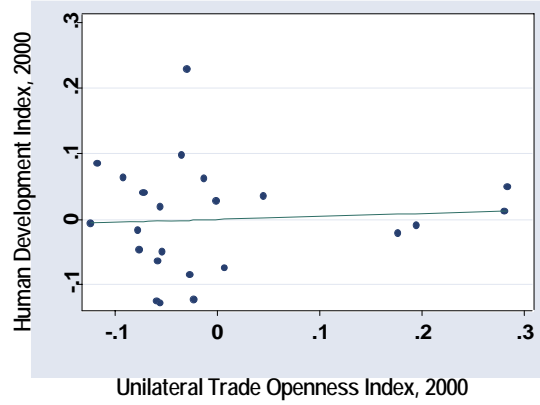
Public Infrastructure (Main telephone lines per 1,000 individuals)

Top Achieving Countries

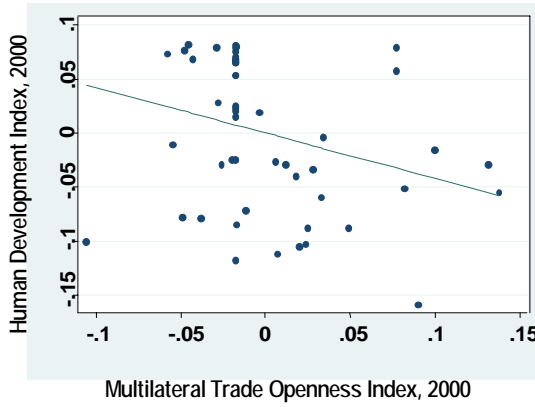


Graph N° 9a

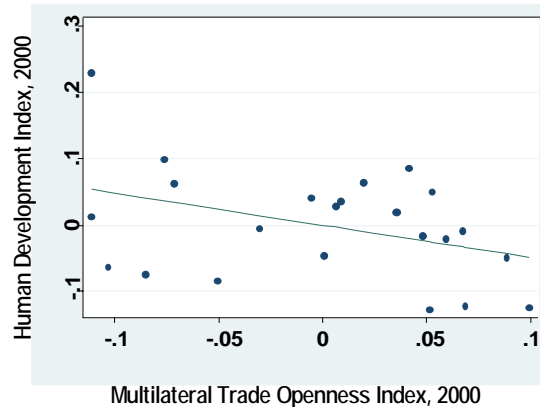
Low Achieving Countries



Graph N° 9b



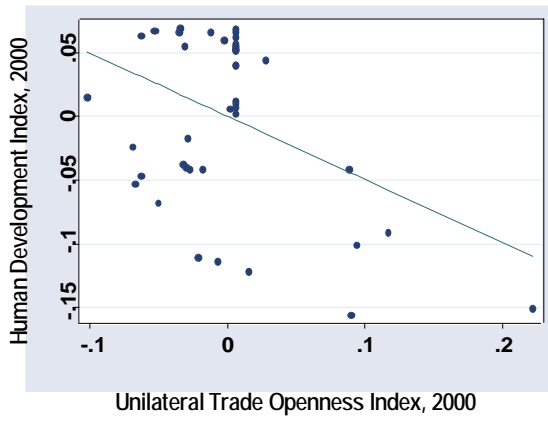
Graph N° 9c



Graph N° 9d

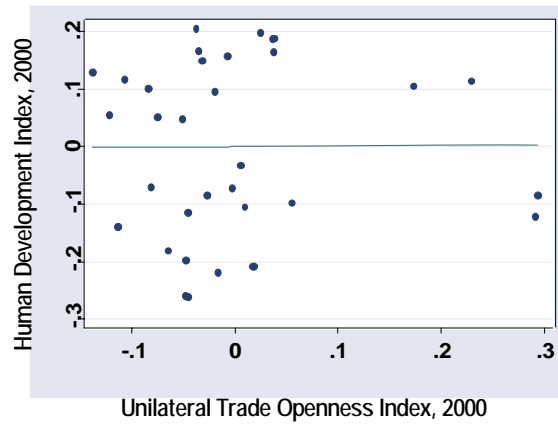
Rule of Law Index

Top Achieving Countries

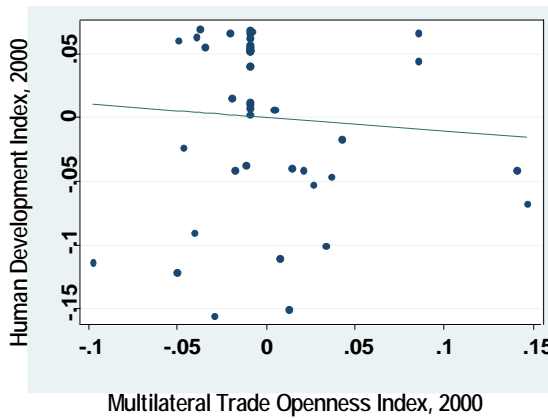


Graph N° 9e

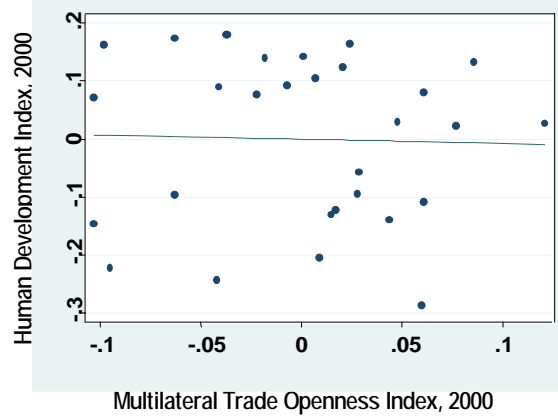
Low Achieving Countries



Graph N° 9f



Graph N° 9g



Graph N° 9h

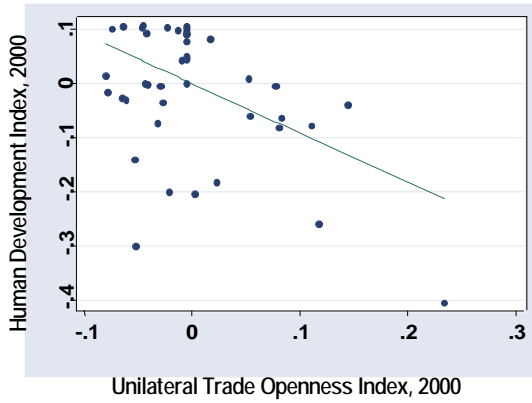
Source: Kee, Nicita and Olarreaga (2005); Human Development Report (2005); Kaufmann, Kraay and Mastruzzi (2005)

Graph N° 10

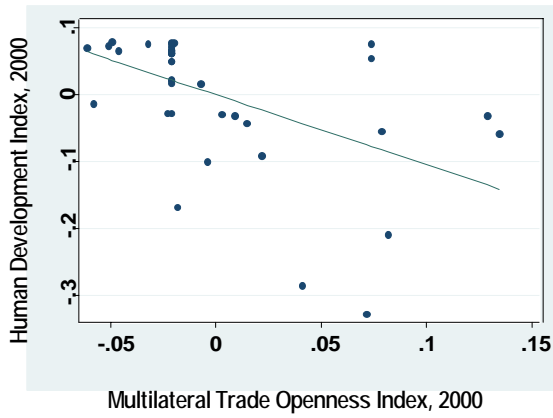
Human Development and Trade Integration (Club 2)

Democracy (Polity Score)

Top Achieving Countries

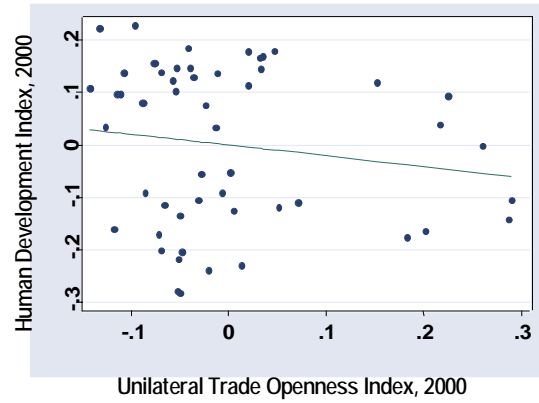


Graph N° 10a

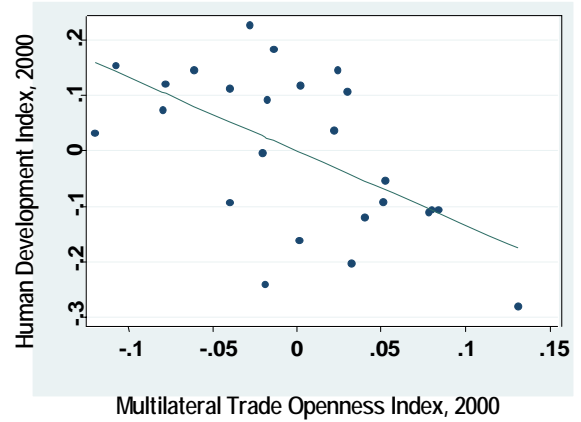


Graph N° 10c

Low Achieving Countries



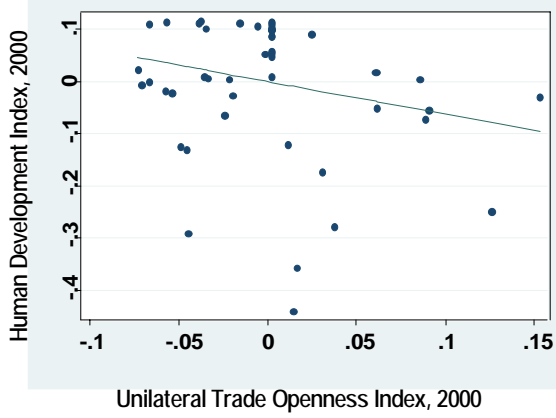
Graph N° 10b



Graph N° 10d

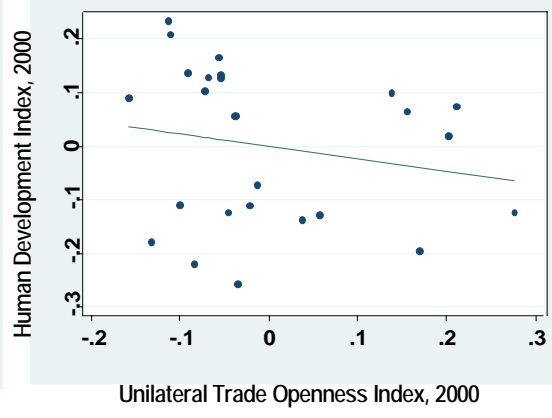
Political Rights (Freedom House Score)

Top Achieving Countries

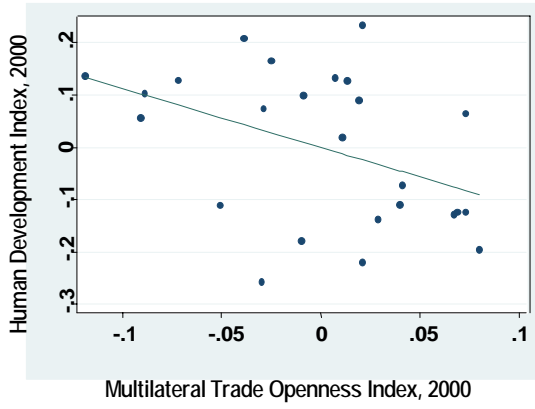


Graph N° 10e

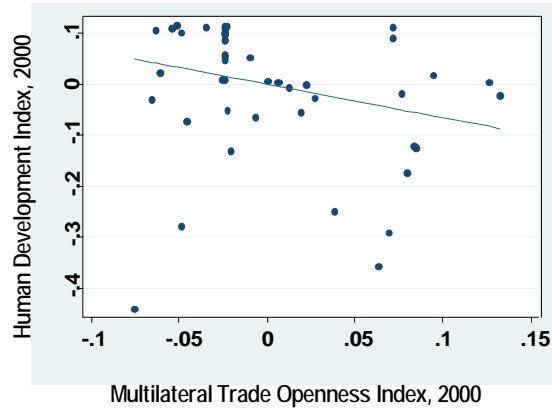
Low Achieving Countries



Graph N° 10f



Graph N° 10g



Graph N° 10h

Source: Kee, Nicita and Olarreaga (2005); Human Development Report (2005); Polity Database (2005); Freedom House (2007).

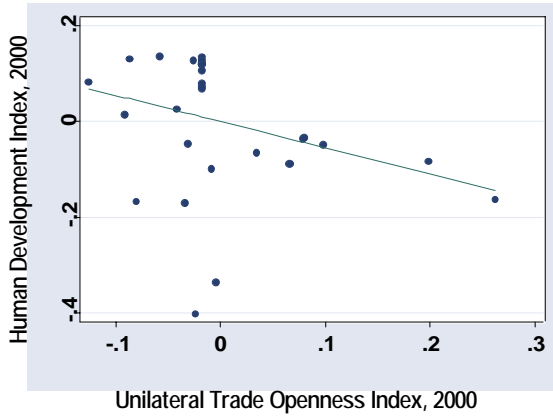
Graph N° 11

Human Development and Trade Integration (Club 3)

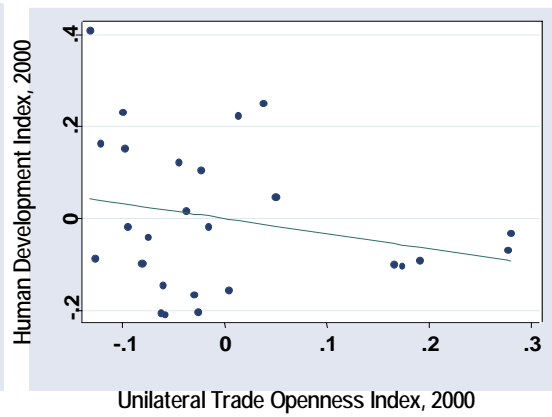
Cultural and Ethnic Diversity (Ethnic Fragmentation Index)

Less Diverse

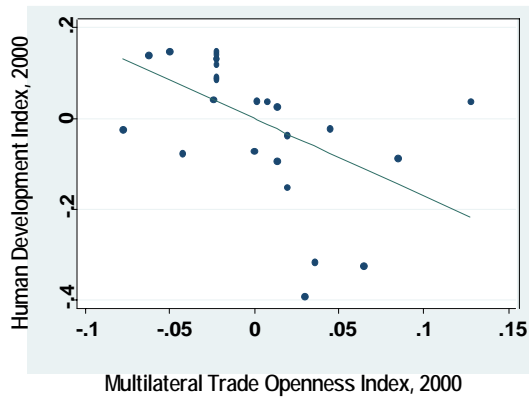
More Diverse



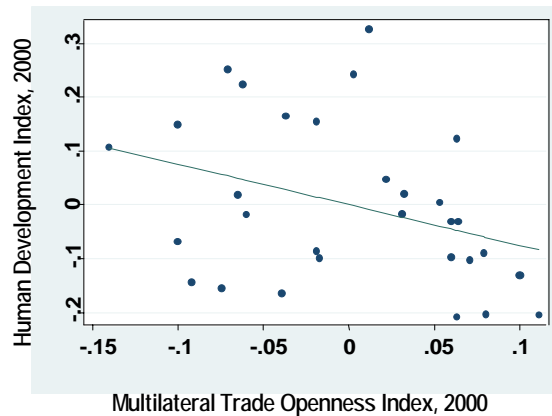
Graph N° 11a



Graph N° 11b



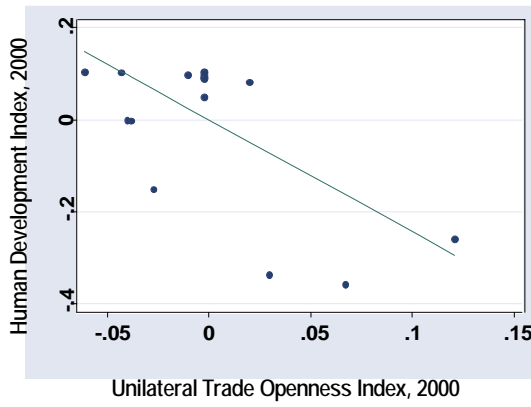
Graph N° 11c



Graph N° 11d

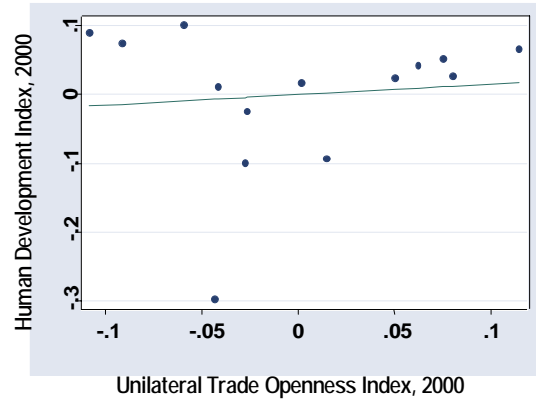
Structural Inequality (Income Gini Coefficient 1970)

More Egalitarian Countries

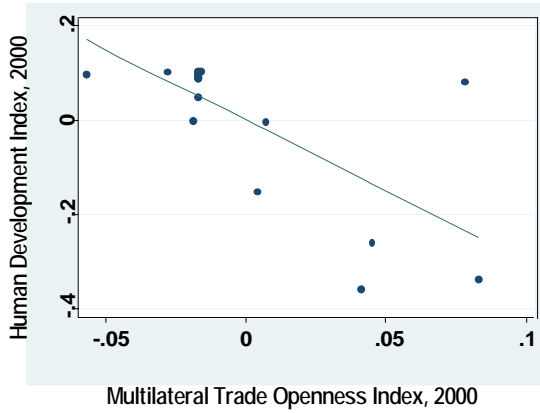


Graph N° 11e

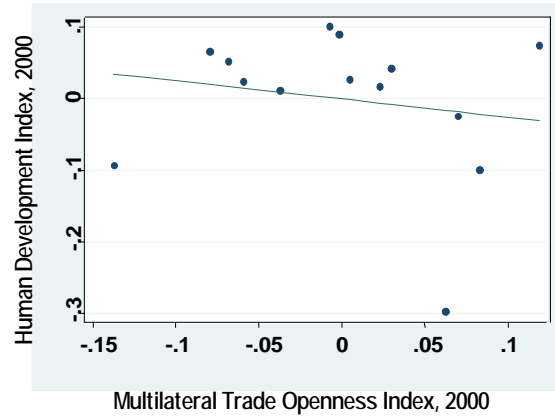
Less Egalitarian Countries



Graph N° 11f



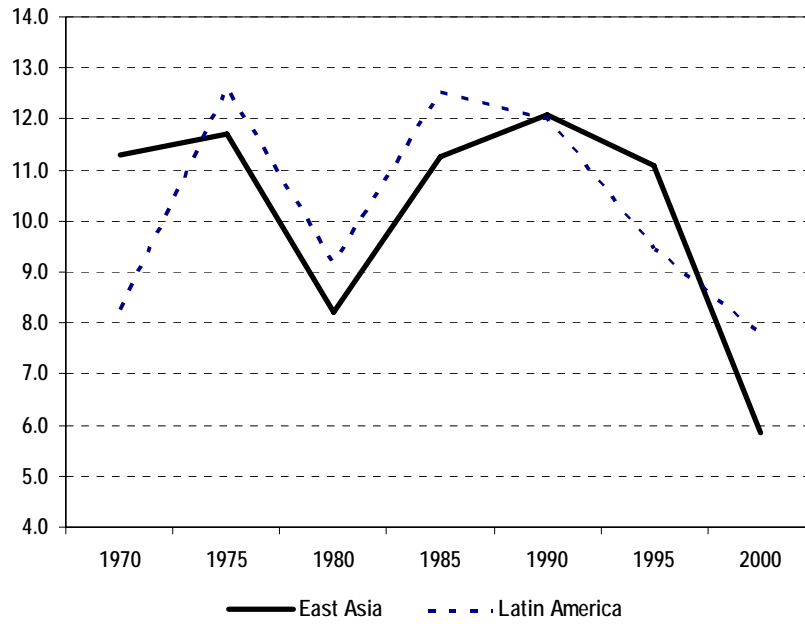
Graph N° 11g



Graph N° 11h

Source: Kee, Nicita and Olarreaga (2005); Human Development Report (2005); La Porta, others (1998); Deininger and Squire (2001)

Graph N° 12: Average Tariff Rates 1970-2000, by region



Source: World Development Indicators. World Bank.

Table N° 1**Quantitative Strategy: Summary**

Variable / Approach	Panel Analysis (1980-2000)	Cross-Country Analysis (2000)
Well-Being	GDP Per Capita, PPP Infant Mortality	GDP Per Capita, PPP Life Expectancy
Trade Openness	Trade shares, PPP-adjusted Trade shares, predicted as F&R Average Tariffs	Trade shares, PPP-adjusted Trade shares, predicted as F&R Unilateral Trade Openness Multilateral Trade Openness
Internal Conditions	Public Infrastructure Domestic Credit Education Achievement Macroeconomic Stability Democratic Practices	Club 1: Business Competitiveness and Market Efficiency (22 variables) Club 2: Democracy (one variable) Club 3: Structural Inequality (4 variables)

Source: See Appendix N° 1

Table N° 2

Fixed Effects, Panel Regression Analysis ¹
Cross-country panel data, 1980-2000, five-year periods
BASIC EQUATION

Independent / Dependent Variable	GDP Per Capita PPP (US\$, 2000)			Infant Mortality Rates		
	(1)	(2)	(3)	(4)	(5)	(6)
Trade Openness 1: PPP-Adjusted Trade Shares	0.145 (0.034)***			1.263 (2.028)		
Trade Openness 2: Trade/Geography/Structural Inequality (as Frank and Romer, 1999)		-0.190 (0.093)***			-12.819 (5.317)***	
Trade Openness 3: Tariff Liberalization (Sign-inverted average tariffs)			0.026 (0.010)***			0.469 (0.501)
Public infrastructure (fixed line and telephone subscribers per 1,000 people, in logs)	0.180 (0.026)***	0.183 (0.027)***	0.231 (0.031)***	-6.493 (1.577)***	-6.906 (1.569)***	-7.542 (4.453)***
Domestic credit depth (domestic credit to private sector as % GDP, in logs)	0.103 (0.022)***	0.125 (0.022)***	0.102 (0.028)***	2.610 (1.260)***	2.736 (1.234)***	0.992 (1.269)
Education achievement (average years of schooling over 25 years)	0.053 (0.018)***	0.066 (0.019)***	0.040 (0.019)***	-16.749 (2.092)***	-17.026 (2.117)***	-14.839 (1.829)***
Macroeconomic stability (inflation, in logs)	-0.006 (0.008)	-0.007 (0.009)	0.000 (0.010)	0.370 (0.483)	0.255 (0.485)	0.275 (0.429)
Democratic practices (polity score)	-0.003 (0.002)	-0.004 (0.002)*	-0.005 (0.003)***	-0.154 (0.120)	-0.110 (0.122)	-0.122 (0.125)
R-sq (within)	0.854	0.849	0.860	0.745	0.753	0.780
Groups/Observations	94/402	91/392	89/333	94/402	91/392	92/345

1/ All regressions controlled by year dummies

****Statistically significant at 99% level of confidence*

***Statistically significant at 95% level of confidence*

**Statistically significant at 90% level of confidence*

Table N° 3

Fixed Effects, Panel Regression Analysis ¹
Cross-country panel data, 1980-2000, five-year periods
INCORPORATING INTERACTION TRADE OPENNESS AND DOMESTIC CREDIT

Independent / Dependent Variable	GDP Per Capita PPP (US\$, 2000)			Infant Mortality Rates		
	(1)	(2)	(3)	(4)	(5)	(6)
Trade Openness 1: PPP-Adjusted Trade Shares	-0.094 (0.078)			-5.304 (4.397)***		
Trade Openness 2: Trade/Geography/Structural Inequality (as Frank and Romer, 1999)		-0.531 (0.134)***			-31.506 (7.716)***	
Trade Openness 3: Tariff Liberalization (Sign-inverted average tariffs)			-0.066 (0.052)			-8.828 (2.355)***
Public infrastructure (fixed line and telephone subscribers per 1,000 people, in logs)	0.190 (0.026)***	0.183 (0.026)***	0.238 (0.031)***	-6.219 (1.537)***	-7.056 (0.543)***	-6.997 (1.415)***
Domestic credit depth (domestic credit to private sector as % GDP, in logs)	-0.121 (0.069)**	-0.099 (0.068)	0.140 (0.035)***	-12.796 (3.899)***	-9.458 (3.897)***	5.002 (1.581)***
Education achievement (average years of schooling over 25 years)	0.053 (0.018)***	0.053 (0.019)***	0.039 (0.019)***	-15.312 (2.066)***	-16.720 (2.084)***	-14.128 (1.781)***
Macroeconomic stability (inflation, in logs)	-0.007 (0.008)	-0.012 (0.008)	-0.001 (0.009)	0.283 (0.471)	-0.033 (0.485)	0.143 (0.417)
Democratic practices (polity score)	-0.003 (0.002)	-0.004 (0.002)***	-0.005 (0.002)**	-0.095 (0.118)	-0.101 (0.120)	-0.050 (0.122)
Trade Openness * Domestic credit depth	0.075 (0.022)***	0.102 (0.030)***	-0.022 (0.012)**	5.253 (1.262)***	5.619 (1.706)***	-2.245 (0.556)***
R-sq (within)	0.860	0.855	0.862	0.753	0.760	0.795
Groups/Observations	94/402	91/392	89/333	92/343	92/344	92/345

1/ All regressions controlled by year dummies

****Statistically significant at 99% level of confidence*

***Statistically significant at 95% level of confidence*

**Statistically significant at 90% level of confidence*

Table N° 4

Fixed Effects, Panel Regression Analysis ¹
Cross-country panel data, 1980-2000, five-year periods
INCORPORATING INTERACTION TRADE OPENNESS AND EDUCATION ACHIEVEMENT

Independent / Dependent Variable	GDP Per Capita PPP (US\$, 2000)			Infant Mortality Rates		
	(1)	(2)	(3)	(4)	(5)	(6)
Trade Openness 1: PPP-Adjusted Trade Shares	0.052 (0.051)			-5.330 (2.913)**		
Trade Openness 2: Trade/Geography/Structural Inequality (as Frank and Romer, 1999)		-0.349 (0.098)***			-19.058 (5.789)***	
Trade Openness 3: Tariff Liberalization (Sign-inverted average tariffs)			-0.056 (0.031)**			-5.287 (1.608)***
Public infrastructure (fixed line and telephone subscribers per 1,000 people, in logs)	0.193 (0.027)***	0.193 (0.026)***	0.261 (0.032)***	-6.015 (1.563)***	-6.744 (1.555)***	-6.068 (1.468)***
Domestic credit depth (domestic credit to private sector as % GDP, in logs)	0.108 (0.022)***	0.121 (0.021)***	0.095 (0.027)***	3.110 (1.253)***	2.710 (1.222)***	0.899 (0.235)
Education achievement (average years of schooling over 25 years)	-0.019 (0.034)	-0.044 (0.033)	0.056 (0.020)***	-19.982 (2.311)***	-20.021 (2.393)***	-9.884 (2.216)***
Macroeconomic stability (inflation, in logs)	-0.005 (0.008)	-0.010 (0.008)	0.000 (0.009)	0.351 (0.476)	0.093 (0.484)	0.212 (0.418)
Democratic practices (polity score)	-0.003 (0.002)	-0.003 (0.002)	-0.005 (0.002)***	-0.144 (0.118)	-0.076 (0.121)	-0.067 (0.122)
Trade Openness * Education achievement	0.020 (0.008)***	0.040 (0.010)***	-0.013 (0.004)***	1.514 (0.488)***	1.531 (0.591)***	-0.915 (0.243)***
R-sq (within)	0.858	0.857	0.865	0.753	0.758	0.792
Groups/Observations	94/402	91/392	89/333	94/402	91/392	92/345

1/ All regressions controlled by year dummies

****Statistically significant at 99% level of confidence*

***Statistically significant at 95% level of confidence*

**Statistically significant at 90% level of confidence*

Table N° 5

Fixed Effects, Panel Regression Analysis ¹
Cross-country panel data, 1980-2000, five-year periods
INCORPORATING INTERACTION TRADE OPENNESS AND PUBLIC INFRASTRUCTURE

Independent / Dependent Variable	GDP Per Capita PPP (US\$, 2000)			Infant Mortality Rates		
	(1)	(2)	(3)	(4)	(5)	(6)
Trade Openness 1: PPP-Adjusted Trade Shares	0.0647 (0.053)			-5.813 (3.090)**		
Trade Openness 2: Trade/Geography/Structural Inequality (as Frank and Romer, 1999)		-0.357 (0.105)***			-17.155 (6.162)***	
Trade Openness 3: Tariff Liberalization (Sign-inverted average tariffs)			-0.029 (0.044)			-7.083 (2.044)***
Public infrastructure (fixed line and telephone subscribers per 1,000 people, in logs)	0.132 (0.036)***	0.091 (0.039)***	0.261 (0.039)***	-11.455 (2.269)***	-9.315 (2.340)***	-3.803 (1.721)***
Domestic credit depth (domestic credit to private sector as % GDP, in logs)	0.107 (0.022)***	0.119 (0.021)***	0.095 (0.028)***	3.067 (1.253)***	2.639 (1.234)***	0.276 (1.248)
Education achievement (average years of schooling over 25 years)	0.050 (0.018)***	0.058 (0.019)***	0.037 (0.019)***	-15.121 (2.135)***	-16.780 (2.121)***	-13.245 (1.828)***
Macroeconomic stability (inflation, in logs)	-0.006 (0.008)	-0.009 (0.008)	0.000 (0.009)	0.326 (0.476)	0.171 (0.488)	0.204 (0.418)
Democratic practices (polity score)	-0.003 (0.002)	-0.003 (0.002)	-0.005 (0.002)***	-0.116 (0.119)	-0.081 (0.123)	-0.707 (0.122)
Trade Openness * Public infrastructure	0.022 (0.011)***	0.043 (0.013)***	-0.008 (0.006)	2.019 (0.672)***	1.104 (0.797)	-1.221 (0.321)***
R-sq (within)	0.857	0.854	0.861	0.753	0.754	0.793
Groups/Observations	89/331	89/332	89/333	92/343	92/344	92/345

1/ All regressions controlled by year dummies

****Statistically significant at 99% level of confidence*

***Statistically significant at 95% level of confidence*

**Statistically significant at 90% level of confidence*

Table N° 6

Fixed Effects, Panel Regression Analysis ¹
Cross-country panel data, 1980-2000, five-year periods
INCORPORATING INTERACTION TRADE OPENNESS AND MACROECONOMIC STABILITY

Independent / Dependent Variable	GDP Per Capita PPP (US\$, 2000)			Infant Mortality Rates		
	(1)	(2)	(3)	(4)	(5)	(6)
Trade Openness 1: PPP-Adjusted Trade Shares	0.213 (0.040)***			5.351 (2.575)***		
Trade Openness 2: Trade/Geography/Structural Inequality (as Frank and Romer, 1999)		-0.1396 (0.096)			-11.438 (5.545)***	
Trade Openness 3: Tariff Liberalization (Sign-inverted average tariffs)			0.048 (0.014)***			2.514 (0.641)***
Public infrastructure (fixed line and telephone subscribers per 1,000 people, in logs)	0.194 (0.027)***	0.182 (0.027)***	0.240 (0.030)***	-6.126 (1.570)***	-6.961 (1.571)***	-7.091 (1.393)***
Domestic credit depth (domestic credit to private sector as % GDP, in logs)	0.099 (0.021)***	0.127 (0.022)***	0.099 (0.027)***	2.545 (1.249)***	2.816 (1.238)***	0.947 (1.213)
Education achievement (average years of schooling over 25 years)	0.044 (0.018)***	0.061 (0.019)***	0.036 (0.020)**	-15.49 (2.132)***	-16.995 (2.118)***	-13.258 (1.780)***
Macroeconomic stability (inflation, in logs)	0.075 (0.029)***	0.027 (0.020)	-0.0361 (0.017)***	4.697 (1.770)***	1.180 (1.156)	-2.997 (0.795)***
Democratic practices (polity score)	-0.003 (0.002)	-0.0033 (0.002)	-0.005 (0.002)***	-0.133 (0.119)	-0.100 (0.122)	-0.069 (0.120)
Trade Openness * Macroeconomic stability	-0.031 (0.011)***	-0.018 (0.010)***	0.016 (0.006)***	-1.653 (0.651)***	-0.519 (0.589)	1.436 (0.299)***
R-sq (within)	0.859	0.851	0.864	0.751	0.753	0.800
Groups/Observations	94/402	91/392	89/333	94/402	91/392	92/345

1/ All regressions controlled by year dummies

****Statistically significant at 99% level of confidence*

***Statistically significant at 95% level of confidence*

**Statistically significant at 90% level of confidence*

Table N° 7

Fixed Effects, Panel Regression Analysis ¹
Cross-country panel data, 1980-2000, five-year periods
INCORPORATING INTERACTION TRADE OPENNESS AND DEMOCRATIC PRACTICES

Independent / Dependent Variable	GDP Per Capita PPP (US\$, 2000)			Infant Mortality Rates		
	(1)	(2)	(3)	(4)	(5)	(6)
Trade Openness 1: PPP-Adjusted Trade Shares	0.150 (0.034)***			0.852 (2.039)		
Trade Openness 2: Trade/Geography/Structural Inequality (as Frank and Romer, 1999)		-0.207 (0.094)***			-13.716 (5.389)***	
Trade Openness 3: Tariff Liberalization (Sign-inverted average tariffs)			0.069 (0.024)***			0.310 (1.140)
Public infrastructure (fixed line and telephone subscribers per 1,000 people, in logs)	0.176 (0.026)***	0.1816 (0.027)***	0.2169 (0.032)***	-6.223 (1.582)***	-6.976 (1.571)***	-7.502 (1.480)***
Domestic credit depth (domestic credit to private sector as % GDP, in logs)	0.101 (0.022)***	0.122 (0.022)***	0.104 (0.027)***	2.791 (1.626)***	2.606 (1.242)***	0.979 (0.127)
Education achievement (average years of schooling over 25 years)	0.056 (0.018)***	0.0659 (0.019)***	0.037 (0.019)**	-17.021 (2.094)***	-16.921 (2.120)***	-14.797 (1.854)***
Macroeconomic stability (inflation, in logs)	-0.006 (0.008)	-0.0064 (0.008)	-0.002 (0.009)	0.425 (0.483)	0.261 (0.485)	0.279 (0.431)
Democratic practices (polity score)	0.003 (0.007)	-0.009 (0.007)	-0.0163 (0.006)***	-0.811 (0.431)**	-0.449 (0.372)	-0.083 (0.285)
Trade Openness * Democratic practices	-0.003 0.003	0.003 (0.003)	0.005 (0.002)**	0.239 (0.151)*	0.168 (0.175)	-0.017 (0.111)
R-sq (within)	0.855	0.849	0.862	0.748	0.754	0.780
Groups/Observations	94/402	91/392	89/333	94/402	91/392	92/345

1/ All regressions controlled by year dummies

****Statistically significant at 99% level of confidence*

***Statistically significant at 95% level of confidence*

**Statistically significant at 90% level of confidence*

Table N° 8

OLS Cross-Country Regression Analysis ¹
ALL TRADE OPENNESS MEASURES SIMULTANEOUSLY

Independent / Dependent Variable	GDP Per Capita PPP (US\$2000)				Life Expectancy Rates			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Trade Openness 1: PPP-Adjusted Trade Shares	0.016 (0.089)			-0.077 (0.121)	0.058 (0.033)**			-0.037 (0.041)
Trade Openness 2: Trade/Geography/Structural Inequality (as Frank and Romer, 1999)		0.023 (0.094)		0.060 (0.125)		0.101 (0.032)***		0.153 (0.043)***
Unilateral Trade Openness (Overall Trade Restrictiveness Index)			-0.456 (0.589)	-0.428 (0.634)			0.157 (0.239)	0.279 (0.216)
Multilateral Trade Openness (Market Access Trade Restrictiveness Index)			-2.193 (0.959)***	-2.666 (1.006)***			-0.782 (0.390)**	-1.049 (0.344)***
Business Competitiveness (factor component, 22 variables)	0.560 (0.098)***	0.568 (0.091)***	0.476 (0.093)***	0.499 (0.099)***	0.029 (0.037)	0.030 (0.030)	0.026 (0.038)	0.018 (0.034)
Political Rights (political rights index, Freedom House)	-0.144 (0.046)***	-0.143 (0.045)***	-0.162 (0.045)***	-0.170 (0.049)***	-0.032 (0.017)**	-0.034 (0.015)***	-0.036 (0.018)**	-0.036 (0.016)***
Structural Inequality (factor component, 4 variables)	-0.216 (0.126)**	-0.196 (0.123)	-0.3682 (0.132)***	-0.321 (0.138)***	-0.063 (0.047)	-0.078 (0.041)**	-0.111 (0.054)**	-0.147 (0.047)***
R-sq	0.906	0.908	0.917	0.926	0.863	0.880	0.870	0.902
N° Countries	78	77	71	69	78	77	71	69

1/ All regressions controlled by regional dummies

****Statistically significant at 99% level of confidence*

***Statistically significant at 95% level of confidence*

**Statistically significant at 90% level of confidence*

Table N° 9

OLS Cross-Country Regression Analysis ¹

UNILATERAL TRADE OPENNESS: INTERACTING WITH THREE “CLUBS” OF INTERNAL CONDITIONS

Independent / Dependent Variable	GDP Per Capita PPP (US\$2000)				Life Expectancy Rates			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Unilateral Trade Openness (Overall Trade Restrictiveness Index)	-0.456 (0.589)	-0.676 (0.777)	-0.781 (1.933)	0.241 (0.654)	0.157 (0.239)	0.341 (0.314)	-0.316 (0.783)	0.158 (0.277)
Multilateral Trade Openness (Market Access Trade Restrictiveness Index)	-2.193 (0.959)***	-2.150 (0.970)***	-2.246 (1.012)***	-2.262 (0.930)***	-0.782 (0.390)**	-0.817 (0.392)**	-0.858 (0.410)**	-0.781 (0.393)**
Business Competitiveness (factor component, 22 variables)	0.476 (0.093)***	0.543 (0.179)***	0.475 (0.094)***	0.483 (0.909)***	0.026 (0.038)	-0.028 (0.724)	0.025 (0.038)	0.027 (0.038)
Political Rights (political rights index, Freedom House)	-0.162 (0.045)***	-0.159 (0.046)***	-0.174 (0.079)***	-0.188 (0.045)***	-0.036 (0.018)**	-0.038 (0.018)**	-0.052 (0.032)*	-0.036 (0.019)**
Structural Inequality (factor component, 4 variables)	-0.3682 (0.132)***	-0.357 (0.136)***	-0.369 (0.134)***	-0.129 (0.169)	-0.111 (0.054)**	-0.121 (0.055)**	-0.113 (0.054)**	-0.111 (0.071)
Unilateral Trade Openness * Business Competitiveness		-0.440 (1.001)				0.367 (0.404)		
Unilateral Trade Openness * Political Rights			0.073 (0.414)				0.106 (0.167)	
Unilateral Trade Openness * Structural Inequality				-1.431 (0.655)***				-0.002 0.277
R-sq	0.917	0.924	0.924	0.930	0.870	0.872	0.870	0.870
N° Countries	71	71	71	71	71	71	71	71

1/ All regressions controlled by regional dummies

****Statistically significant at 99% level of confidence*

***Statistically significant at 95% level of confidence*

**Statistically significant at 90% level of confidence*

Table N° 10

OLS Cross-Country Regression Analysis ¹

INTERNATIONAL MARKET ACCESS (MULTILATERAL TRADE OPENNESS): INTERACTING WITH THREE “CLUBS” OF INTERNAL CONDITIONS

Independent / Dependent Variable	GDP Per Capita PPP (US\$2000)				Life Expectancy Rates			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Unilateral Trade Openness (Overall Trade Restrictiveness Index)	-0.456 (0.589)	-0.633 (0.591)	-0.379 (0.587)	-0.574 (0.585)	0.157 (0.239)	0.113 (0.243)	0.229 (0.239)	0.101 (0.236)
Multilateral Trade Openness (Market Access Trade Restrictiveness Index)	-2.193 (0.959)***	-1.470 (1.043)	0.477 (2.147)	-1.718 (0.989)**	-0.782 (0.390)**	-0.602 (0.430)	0.492 (0.889)	-0.560 (0.399)
Business Competitiveness (factor component, 22 variables)	0.476 (0.093)***	0.235 (0.174)	0.468 (0.092)***	0.482 (0.092)***	0.026 (0.038)	-0.032 (0.071)	0.027 (0.037)	0.029 (0.037)
Political Rights (political rights index, Freedom House)	-0.162 (0.045)***	-0.144 (0.046)***	-0.060 (0.086)	-0.152 (0.045)***	-0.036 (0.018)**	-0.031 (0.019)*	0.023 (0.037)	-0.031 (0.018)*
Structural Inequality (factor component, 4 variables)	-0.368 (0.132)***	-0.372 (0.131)***	-0.376 (0.487)***	-0.124 (0.199)	-0.111 (0.054)**	-0.113 (0.054)**	-0.138 (0.055)***	0.002 (0.080)
Multilateral Trade Openness * Business Competitiveness		1.723 (1.053)*				0.426 (0.434)		
Multilateral Trade Openness * Political Rights			-0.675 (0.487)				-0.358 (0.210)*	
Multilateral Trade Openness * Structural Inequality				-1.840 (1.125)*				-0.854 (0.454)*
R-sq	0.917	0.927	0.926	0.927	0.870	0.872	0.878	0.877
N° Countries	71	71	71	71	71	71	71	71

1/ All regressions controlled by regional dummies

***Statistically significant at 99% level of confidence

**Statistically significant at 95% level of confidence

*Statistically significant at 90% level of confidence

Table N° 11**Human Development Indicators: 1960**

	Living Standard ¹ Index	GDP per capita ² (US\$ 1985)	Life Expectancy ³ (Años)	HDI 1960 Index
<i>LAC</i>				
Argentina	0.49	4,481	65	0.67
Mexico	0.38	2,825	57	0.52
Brazil	0.30	1,780	55	0.39
Chile	0.39	2,897	57	0.58
Colombia	0.29	1,686	57	0.47
Peru	0.32	2,031	48	0.42
Simple Average	0.36	2,617	57	0.51
<i>HPAE's</i>				
Singapur	0.29	1,626	64	0.52
Korea	0.21	898	54	0.40
Hong Kong	0.34	2,231	66	0.56
Thailand	0.21	940	53	0.37
Malaysia	0.27	1,409	54	0.33
Indonesia	0.17	641	41	0.22
Simple Average	0.25	1,291	55	0.40

1/ Square root of GDP per capita. Penn Tables

2/GDP per capita PPP, 1960

3/ 1960, World Bank

Table N° 12

Human Development Indicators: 1990

	Living Standard ¹ Index	GDP per capita ² (US\$ 1985)	Life Expectancy ³ (Años)	HDI 1990 Index
<i>LAC</i>				
Argentina	0.50	4,708	74	0.84
Mexico	0.56	5,825	72	0.80
Brazil	0.46	4,043	67	0.76
Chile	0.48	4,335	76	0.83
Colombia	0.42	3,303	70	0.77
Peru	0.34	2,189	69	0.75
Simple Average	0.46	4,067	71	0.79
<i>HPAE's</i>				
Singapur	0.80	11,698	78	0.89
Korea	0.60	6,665	73	0.88
Hong Kong	0.90	14,854	80	0.89
Thailand	0.43	3,570	69	0.76
Malaysia	0.52	5,117	72	0.78
Indonesia	0.32	1,973	66	0.68
Simple Average	0.59	7,313	73	0.81

1/ Square root of GDP per capita. Penn Tables

2/ GDP per capita PPP, 1990

3/ 1990, World Bank

Table N° 13

Initial Complementary Conditions: Education and Structural Inequality in East Asia and Latin America

	Gini Income Index	Gini Land Index	No Educ. (%)	Primary Tot Full (%) (%)		Secondary Tot Full (%) (%)		Superior Tot Full (%) (%)		Enroll. Primary ¹ (%)	Enroll. Second ¹ (%)	Illiteracy (%)
<i>LAC</i>												
Argentina		0.86	12	73.4	19.9	11.6	5.3	3	1.8	95	34	7
Mexico	0.57	0.62	46	48.3	10.4	4.3	1.5	1.4	0.8	83	17	25
Brazil	0.53	0.83	43.1	42.8	11.6	12.1	4.3	2	1.4	70	17	32
Chile	0.46		20.2	55.3	22.1	22.4	11	2.1	1.4	90	28	12
Colombia	0.52	0.86	35.1	51.3	10.9	11.9	3.9	1.9	1.3	22
Peru	0.55	0.94	42.8	44.9	11.7	9.7	4.1	2.6	1.8	78	27	28
Simple Average	0.52	0.82	33.2	52.7	14.4	12.0	5.0	2.2	1.4	83	25	21
<i>HPAE's</i>												
Singapur	0.39	.	54.3	20.6	8.3	25	8.3	0	0	94	44	27
Korea	0.32	0.35	56.9	29.6	26.2	10.9	5.8	2.6	1.9	94	38	13
Hong Kong	0.41	.	30.8	47.1	19.3	17.3	8.1	4.7	2.7	87	33	22
Thailand	0.42	0.46	48.1	46.4	33.9	4.9	1.6	0.6	0.6	20
Malaysia	0.51	0.75	58.5	32.7	11.5	7.2	2.4	1.5	1.3	88	33	42
Indonesia	0.33	0.55	75.5	22.6	7.6	1.9	0.5	0.1	0	72	..	44
Simple Average	0.40	0.53	54.0	33.2	17.8	11.2	4.5	1.6	1.1	87	37	28

Source: Deininger and Squire (1996), Barro and Lee (1994), World Bank (2002)

1/ Net enrollment rate, 1970

Appendix N° 1

Data Description and Sources

Variable	Description	Source
Well-being		
Income	GDP per capita, PPP-adjusted (in logs)	World Development Indicators
Infant Mortality	Infant mortality rates, per 1,000 live births (in logs)	World Development Indicators
Life Expectancy	Life expectancy, years (in logs)	World Development Indicators
Trade Openness		
Measure 1: Trade Shares, PPP-adjusted	Ratio of the summation of total imports and exports and GDP expressed purchasing power parity terms, in logs	World Development Indicators
Measure 2: Trade Shares, predicted	Predicted trade shares based on a gravitational model using geographical variables as calculated in Frank and Romer (1999), in logs	Lopez-Córdova and Meissner (2005)
Measure 3: Average Tariffs	Total tariff revenues as share of total imports, in logs	World Development Indicators
Measure 4: Unilateral Trade Openness	Overall Trade Restrictiveness Index, which measures the overall equivalent <i>ad valorem</i> tariff rate imposed by each country on imports. Built with information from tariff rates, NTB's, and trade-restraining subsidies (including those adopted in the agricultural sector). Higher values correspond to higher levels of protection.	Kee, Nicita, and Olarreaga (2005)
Measure 5: Multilateral Trade Openness	Overall Market Access Index, which measures the overall equivalent <i>ad valorem</i> tariff rate faced by each country's exports in the rest of the world. Built with information from tariff rates, NTB's, and trade-restraining	Kee, Nicita, and Olarreaga (2005)

subsidies (including those adopted in the agricultural sector). Higher values correspond to higher trade restrictions to access international markets.

Internal Conditions		
Public Infrastructure	Fixed phone lines subscribers (per 1,000), in logs	World Development Indicators
Domestic Credit	Total credit to private sector (as % of GDP), in logs	World Development Indicators
Education Achievement	Average years of schooling, population over 25 years	Barro and Lee (2000)
Macroeconomic Stability	Inflation, consumer prices (var %), in logs	World Development Indicators
Democratic Practices	Polity Score	Polity Project
Club 1: Business Competitiveness and Market Efficiency	Principal factor component from 22 variables linked to business competitiveness and market efficiency, as follows:	Author's own calculations
	Growth Competitiveness Index: The quality of the macroeconomic environment, the state of the country's public institutions, and the level of the country's technological readiness (1=lower, 7=higher)	World Economic Forum
	Auditing and accounting standards: Financial auditing and reporting standards regarding company financial performance in your country are (1=extremely weak, 7=strong) among the best in the world	World Economic Forum
	Local supplier quality: The quality of local suppliers in your country is (1=poor, as they are inefficient and have little technological capability, 7=very good, as they are internationally competitive and assist in new product and process development)	World Economic Forum

Intensity of Local Competition: Competition in the local market is (1=limited in most industries and price-cutting is rare, 7=intense in most industries as market leadership changes over time)	World Economic Forum
Company Spending on Research and Development: Companies in your country (1= do not spend money on research and development, 7=spend heavily on research and development relative to international peers)	World Economic Forum
Local Equity Market Access: Raising money by issuing shares on the local stock market is (1=nearly impossible, 7=quite possible for a good company)	World Economic Forum
Fixed line and mobile phone subscribers (per 1,000 individuals)	World Development Indicators
Postal Efficiency: Do you trust your country's postal system sufficiently to have a friend mail a small package worth US\$100 to you? (1=not at all, 7=yes, trust the system entirely)	World Economic Forum
Port Efficiency Index: Port facilities and inland waterways in your country are (1=underdeveloped, 7=as developed as the world's best)	World Economic Forum
Air Transport Infrastructure Quality: Passenger air transport in your country is (1=infrequent and inefficient, 7=as extensive and efficient as the world's best)	World Economic Forum
Railroad Infrastructure Development: Railroads in your country are (1=underdeveloped, 7=as extensive and efficient as the world's best)	World Economic Forum
Overall Infrastructure Quality:	World Economic Forum

General infrastructure in your country is (1=poorly developed and inefficient, 7=among the best in the world)

Total Credit (as % of GDP)

World Development Indicators

Financial Market Sophistication: The level of sophistication of financial markets in your country is (1=lower than international norms, 7=higher than international norms)

World Economic Forum

Technological Readiness: Your country's level of technological readiness (1=generally lags behind most other countries, 7=is among the world leaders)

World Economic Forum

Rule of Law Index: Measures institutional quality, one of the six indices on institutional quality developed by Kaufmann, Kraay and Zoido-Lobaton (2002). The index values fluctuate between -2.5 and 2.5; the highest values are associated to societies where adherence to the law is predominant.

Kaufmann, Kraay and Zoido-Lobaton (2002).

Irregular Payments in Judicial Decisions: In your industry, how commonly would you estimate that firms make undocumented extra payments or bribes connected with getting favorable judicial decisions? (1=common, 7=never occurs)

World Economic Forum

Judicial Independence: Is the judiciary in your country independent from political influences of members of government, citizens, or firms? (1=no, heavily influenced, 7=yes, entirely independent)

World Economic Forum

Property Rights Index: Property rights, including over financial assets, are (1=poorly defined and not protected by law, 7=clearly

World Economic Forum

	defined and well protected by law)	
	Extend of Informal Sector: How much business activity in your country would you estimate to be unofficial or unregistered? (1=none, all business are registered, 7=more than 50% of economic activity is unrecorded)	World Economic Forum
	Time for Export: time necessary to comply with all procedures required to export (days)	Doing Business
	Time for Import: time necessary to comply with all procedures required to import (days)	Doing Business
Club 2: Political Rights	Political Rights Index (1=more extended political rights, 7=less extended use of political rights)	Freedom House
Club 3: Structural Inequality	Principal factor component from 4 variables linked to structural inequality, as follows:	Author's own calculations
	Distance to the Equator (degrees)	Rodrik (2002)
	Income Gini Coefficient (Average 1980-2000)	Deininger and Squire (2001)
	Malaria Ecology Index: Index of malaria risk transmission that combines data on temperature, mosquito abundance of the type <i>plasmodium falciparum</i> , and vector type (preference for human or animal blood).	Sachs (2003)
	Ethnic Fragmentation Index	La Porta; others (1999)

Appendix N° 2

Simple Correlation Coefficients: Variables Used in Factor Analysis

	gci_wef	audit_f	suppli-f	compet-f	resear-f	stock_f	lgfn	postal-f	port_wef	air_wef	railro-f	infra_f	lgcredit	finans-f	tech_wef	ro	corrup-f	judici-f	pright-f	inform-f	timeex-b	timeim-b	pr_fre-m	disteq	gini_i-e	me	etno_l-a
Club 1	gci_wef	1																									
	audit_wef	0.8567	1																								
	supplier_wef	0.901	0.8791	1																							
	compet_wef	0.8169	0.8456	0.8649	1																						
	research_wef	0.8731	0.8038	0.8871	0.7736	1																					
	stock_wef	0.6977	0.8789	0.7724	0.7875	0.6781	1																				
	lgfn	0.7917	0.6789	0.7825	0.6066	0.6618	0.5257	1																			
	postal_wef	0.8928	0.7804	0.8119	0.7858	0.8075	0.695	0.6702	1																		
	port_wef	0.8671	0.7646	0.8388	0.7052	0.8067	0.6136	0.7195	0.7506	1																	
	air_wef	0.8656	0.8126	0.8636	0.7736	0.8012	0.6634	0.7224	0.7616	0.8689	1																
	railroad_wef	0.8352	0.7156	0.8011	0.6795	0.8592	0.6083	0.6191	0.8404	0.7898	0.7252	1															
	infra_wef	0.9341	0.8276	0.878	0.7626	0.8585	0.6667	0.7444	0.8296	0.9157	0.8958	0.8543	1														
	lgcredit	0.7305	0.6822	0.7729	0.6494	0.6678	0.628	0.712	0.6497	0.701	0.7463	0.5961	0.7401	1													
	finansoph_f	0.8848	0.9062	0.9261	0.8107	0.8416	0.7851	0.7654	0.7614	0.8129	0.8624	0.719	0.8667	0.7585	1												
	tech_wef	0.9342	0.8315	0.9303	0.8088	0.901	0.699	0.7981	0.8017	0.8602	0.8679	0.7844	0.9124	0.7442	0.9157	1											
	ro	0.9169	0.8166	0.8625	0.7533	0.7963	0.6497	0.7881	0.8523	0.799	0.7881	0.7798	0.8784	0.7203	0.8299	0.8704	1										
	corrup_wef	0.8962	0.8625	0.8446	0.7628	0.7835	0.7022	0.699	0.7938	0.7931	0.7908	0.7364	0.8562	0.683	0.8224	0.8384	0.8893	1									
	judicial_wef	0.8476	0.8196	0.7735	0.7856	0.7702	0.6787	0.5418	0.7933	0.7281	0.7284	0.7006	0.8065	0.5809	0.7597	0.7774	0.8362	0.9002	1								
	prights_wef	0.9279	0.8893	0.8841	0.8329	0.8494	0.7553	0.6919	0.8676	0.8318	0.8382	0.7871	0.8905	0.726	0.8768	0.8698	0.898	0.9084	0.9204	1							
	informal_wef	-0.8785	-0.76	-0.7706	-0.6896	-0.7639	-0.5796	-0.6776	-0.8129	-0.8026	-0.7933	-0.7392	-0.8506	-0.647	-0.7523	-0.8103	-0.863	-0.8194	-0.7703	-0.8612	1						
timeexport-b	-0.6975	-0.5953	-0.7083	-0.5992	-0.5643	-0.5015	-0.7658	-0.5311	-0.6901	-0.6658	-0.4843	-0.6613	-0.6897	-0.6584	-0.7018	-0.6733	-0.6004	-0.505	-0.6102	0.5888	1						
timeimport-b	-0.7366	-0.6141	-0.7236	-0.6167	-0.5911	-0.5017	-0.7963	-0.5829	-0.7163	-0.6876	-0.5275	-0.6954	-0.7271	-0.6847	-0.7361	-0.7062	-0.6284	-0.5257	-0.6505	0.6337	0.9549	1					
Club 2	pr_freedom	-0.5244	-0.5092	-0.5502	-0.4227	-0.4097	-0.3988	-0.6158	-0.3938	-0.4128	-0.4594	-0.3499	-0.4718	-0.4889	-0.5939	-0.5422	-0.6152	-0.4986	-0.4502	-0.5039	0.381	0.4645	0.5209	1			
Club 3	disteq	0.634	0.5017	0.5878	0.4603	0.5293	0.3226	0.645	0.6301	0.52	0.4586	0.6518	0.5638	0.3616	0.5079	0.5593	0.6762	0.576	0.4952	0.5646	-0.5592	-0.4423	-0.4976	-0.4703	1		
	gini_income	-0.4071	-0.2666	-0.3277	-0.337	-0.3785	-0.2245	-0.347	-0.4811	-0.3665	-0.2357	-0.518	-0.3312	-0.1732	-0.2576	-0.3335	-0.4607	-0.3427	-0.3354	-0.3608	0.431	0.2563	0.301	0.2369	-0.612	1	
	me	-0.3509	-0.3239	-0.3992	-0.2693	-0.2866	-0.2043	-0.6457	-0.2735	-0.281	-0.3942	-0.2834	-0.2977	-0.4175	-0.347	-0.3712	-0.3483	-0.2752	-0.1256	-0.2523	0.3013	0.5463	0.5112	0.3358	-0.4663	0.184	1
	etno_laporta	-0.366	-0.1907	-0.3364	-0.2249	-0.2448	-0.0562	-0.6003	-0.3472	-0.3207	-0.3403	-0.2613	-0.3263	-0.2992	-0.3071	-0.366	-0.3926	-0.3125	-0.1714	-0.273	0.3826	0.3691	0.4036	0.3664	-0.5331	0.2971	0.589

	Club1	Club 2	Club3
Club1	1		
Club 2	-0.5514	1	
Club3	-0.5656	0.4773	1

Appendix N° 3

Sample of Countries Used in Preferred Model Specifications

Nº	Country	Nº	Country	Nº	Country
1	Albania	26	Honduras	51	Philippines
2	Algeria	27	Hungary	52	Poland
3	Argentina	28	India	53	Portugal
4	Australia	29	Indonesia	54	Romania
5	Austria	30	Ireland	55	South Africa
6	Bangladesh	31	Italy	56	Spain
7	Belgium	32	Japan	57	Sri Lanka
8	Bolivia	33	Jordan	58	Sweden
9	Brazil	34	Kenya	59	Switzerland
10	Cameroon	35	Madagascar	60	Tanzania, U. Rep. of
11	Canada	36	Malawi	61	Thailand
12	Chad	37	Malaysia	62	Trinidad and Tobago
13	Chile	38	Mali	63	Tunisia
14	China	39	Mauritius	64	Turkey
15	Colombia	40	Mexico	65	Uganda
16	Costa Rica	41	Morocco	66	United Kingdom
17	Denmark	42	Mozambique	67	United States
18	Ecuador	43	Netherlands	68	Uruguay
19	El Salvador	44	New Zealand	69	Venezuela
20	Ethiopia	45	Nicaragua	70	Vietnam
21	Finland	46	Nigeria	71	Zimbabwe
22	France	47	Norway		
23	Ghana	48	Pakistan		
24	Greece	49	Paraguay		
25	Guatemala	50	Peru		

Annex N° 4

OLS Instrumental Variables Cross-Country Regression Analysis ¹

BASIC EQUATION

FIRST STAGE REGRESSIONS		
Independent / Dependent Variable	Club1 (1)	Club 1 (2)
Settler Mortality Rates (in logs)	-0.253 (0.108)***	-0.257 (0.103)***

SECOND STAGE REGRESSIONS		
Independent / Dependent Variable	GDP Per Capita PPP (US\$2000)	Life Expectancy Rates
	(1)	(2)
Unilateral Trade Openness (Overall Trade Restrictiveness Index)	-1.173 (0.744)*	-0.055 (0.244)
Multilateral Trade Openness (Market Access Trade Restrictiveness Index)	-2.270 (1.447)*	-0.778 (0.453)**
Business Competitiveness (factor component, 22 variables)	1.023 (0.301)***	-0.114 (0.096)
Political Rights (political rights index, Freedom House)	0.054 (0.097)	-0.056 (0.030)**
Structural Inequality (factor component, 4 variables)	-0.232 (0.202)	-0.171 (0.065)**
R-sq	0.798	0.863
N° Countries	37	41

1/ All regressions controlled by regional dummies
****Statistically significant at 99% level of confidence*
***Statistically significant at 95% level of confidence*
**Statistically significant at 90% level of confidence*