FOREIGN DIRECT INVESTMENT AND ITS DETERMINANTS IN EMERGING ECONOMIES

African Economic Policy Paper
Discussion Paper Number 9
July 1998

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Morgan Stanley Dean Witter

Funded by
United States Agency for International Development
Bureau for Africa
Office of Sustainable Development
Washington, D.C. 20523-4600

ABSTRACT

This study analyzes determinants of net foreign direct investment (FDI) inflows in emerging economies between 1978 and 1995. Its theoretical framework is based on the concept of Institutional FDI Fitness, developed by the author Saskia Wilhelms. Grounded in integrative theories of foreign direct investment (FDI), the Institutional FDI Fitness theory stipulates that FDI is determined less by intransigent fundamentals than by institutional variables more amenable to change, namely policies, laws, and their implementation. The four institutions contributing to FDI Fitness are government, markets, education, and socioculture.

The FDI Fitness concept is tested in an econometric cross-section across 67 emerging economies. The econometric analysis shows government and market variables as the most significant determinants of FDI inflows. Governmental fitness is reflected in economic openness with only minimal trade and exchange rate controls. Government fitness also means a strong rule of law and low corruption, based on legal and administrative equity and transparency. Market fitness is represented by high trade volume, low taxes, high urbanization, and ready availability of credit and energy.

Given that these determinants reduce incentives for discretionary behavior and rent-seeking, the results demonstrate that, while investors are willing to negotiate, they seek stability and transparency, preferring clear-cut and consistently implemented regulations to individual privileges gained through wheeling and dealing.

The regression analysis hence corroborates the Institutional FDI Fitness theory. The manner in which policy-makers handle institutions, policies, laws, and their implementation is significantly more important to foreign direct investors than relatively intransigent factors such as population size and socioculture. The FDI Institutional Fitness theory suggests that every nation has the opportunity to identify and expand its competitive strengths to increase its share of global foreign direct investment.

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I. TOPIC AND SCOPE

This study explores determinants of net foreign direct investment (FDI) inflows in 67 emerging economies between 1978 and 1995. The purpose of the study is to assist policy-makers in attracting private capital, and to make investors' decision-making processes more objective. Given that inward FDI as a rule precedes portfolio inflows in the development process, the study concentrates on the FDI component–as opposed to the portfolio component– of private investment. FDI tends to tolerate lesser institutional–particularly financial–infrastructure than portfolio investment. The study thus aims at capturing the elements of institutional development that account for a country's receiving comparably more or less FDI.

FDI to developing countries rose to over US $95 billion in 1995 and to 38% of global FDI, nearly quadrupling from US $25 billion and 12 percent in 1990. The share of emerging economies' FDI is increasing more rapidly than that of industrialized economies. The distribution of FDI to developing countries is markedly uneven, however, with circa 50 percent flowing into East Asia and 28 percent into Latin America.[1]

Since policy efforts to attract FDI have met with differing success across countries, this study analyzes the factors that account for these differences in FDI inflows. The presupposition is that policies geared directly or indirectly toward increasing FDI inflows are most effective when designed and implemented within an institutional framework conducive to FDI. In other words, it is not sufficient to merely decree new policies, rather, national institutions–government, markets, and educational and sociocultural systems–must be efficient and effective in transmitting these policies into day-to-day FDI transactions. This institutional capacity may be termed Institutional FDI Fitness. Despite a rich literature on FDI, measurement difficulties and political sensitivities have generally prevented much attention to be focused on institutional capacity. Practitioners who have been grappling with FDI related policy and strategy implementation challenges are increasingly making their voices more heard. Expanding institutional capacity is now the goal of a number of organizations in the field.[2]

In analyzing the relationship between foreign direct investment inflows and FDI Fitness, this study concentrates on country determinants rather than industry or firm determinants of FDI. The reason is that industry and firm factors matter less when country factors are already discouraging FDI.[3]

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[1] World Bank, *Private Capital Flows to Developing Countries: The Road to Financial Integration* (New York: Oxford University Press, First Printing April 1997), 104–105.

[2] World Bank, *The World Bank Annual Report 1996* (Washington, DC: World Bank, 1996), 61, 66, 74, 157–158.

[3] Industry and firm factors acquire significance only after country factors become positive. Certain locational preconditions need to be in place before investors even consider undertaking an FDI project. Such preconditions are the focus of this study. Infrastructure as well as economic and political stability are, for most investors, insufficient, but necessary conditions (I thank Ray Vernon for our discussion of this distinction; Raymond Vernon, Conversation [Cambridge, MA: John F. Kennedy School of Government, Harvard University, 11 April 1997]). Through investment policy reform, a government switches on a green welcome signal to investors, who in turn begin to consider a country as a potential FDI location. If investors

The focus on institutional FDI Fitness as a determinant of FDI is intended to provide scholars, practitioners, policy-makers, and investors with a framework for analyzing the relationship between FDI Fitness Institutions and foreign direct investment. It should also enable these parties to develop a better understanding of each other's interests and constraints. Such improved understanding will enhance communication and cooperation in shaping institutional structures related to FDI policies and processes in a manner consistent with national development goals.[4]

II. CONCEPT OF INSTITUTIONAL FDI FITNESS

The term FDI Fitness refers to a country's ability to attract, absorb, and retain FDI. An allusion to the Darwinian concept of the survival of the fittest suggests that it is not necessarily the biggest and strongest who survive, but rather those who adapt most cleverly and fittingly to existing conditions.[5] In other words, it is not the largest countries but the fittest that obtain most FDI. Fitness denotes a state of wakefulness, the ability to react swiftly to dangers and opportunities, creativity and flexibility in carving out a niche in which a country can survive against competitors–even when these are bigger and more fit.

Small, flexible trees often withstand a storm better than sturdier ones that fail to bend.[6] Global investment and trade are perceived by some as a storm wreaking havoc onto traditional socio-economic structures. Countries that fare best are the ones flexible enough to bend with the winds, while their competitive advantage provides them firmly anchored roots from which to grow and branch out. Some small countries that seem disadvantaged in their resource-endowment have nonetheless attracted large FDI inflows. Other countries, large and with abundant raw materials, have received much less FDI than one might surmise given their natural resources. The Institutional FDI Fitness theory offers an explanation for why FDI flows are distributed so unevenly, and often out of proportion to natural resources.

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see country factors as basically favorable, they will begin to ponder how those factors fit into their overall investment strategy, including industry and firm factors. Without a green welcome light, namely strong policies and institutions, investors will find the road to FDI rather rocky due to an array of road blocks and unfavorable entry and driving conditions. In such a case, only a few sideroads to specific lucrative investments, such as mining, may be worthwhile in the investors' view.

[4] Consistency with national development objectives is vital in forging consensus on investment policy reform and implementation. While this study focuses on the causes rather than the consequences of FDI, it must be seen in the context of the ongoing debate on the merits of FDI for the host society. Increasing FDI is not an objective with an intrinsic value; instead, it ought to be treated as a means to attain budgetary and socioeconomic security in order to improve the well-being of human beings. This can be done only by achieving a fine-tuned balance in regulating FDI, adopting budgetary discipline, and conscientiously allocating capital generated by FDI. The results of this study can serve as a source of information for designing and implementing sovereign national policies to this end.

[5] Charles Darwin, *Evolution and Natural Selection* (Boston: Beacon Press, 1959). Charles Darwin, *On the Origin of Species by Means of Natural Selection* (New York: Heritage Press, 1963).

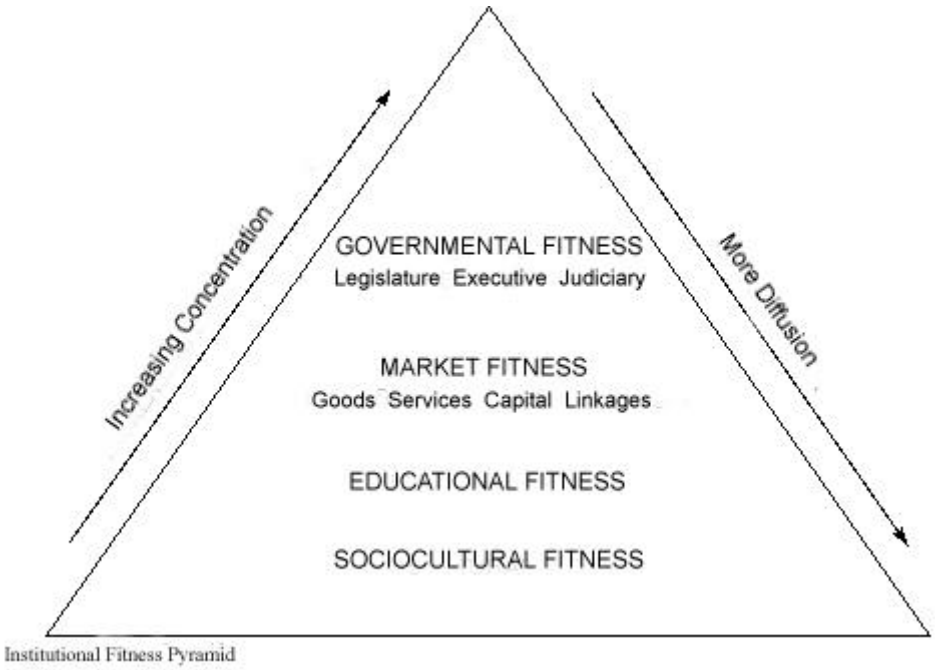
[6] The sudden, revolutionary collapse of the former Eastern bloc can be attributed largely to institutional ossification that resisted evolutionary change.

Arguably, the reason for seemingly disadvantaged countries being able to attract relatively large FDI inflows better than other more richly endowed with natural resources, is that they have found a niche in the global FDI market that makes them more attractive to foreign investors. Brains, not brawn, make the difference. Finding or creating a niche can provide an immense opportunity for countries that appear disadvantaged in the global competition for FDI. Even larger nations with a natural resource base that already attracts FDI, may take advantage of such opportunities if they do not become complacent. This fitness in recognizing and taking advantage of opportunities in the FDI field is grounded in a nation's institutions lead to the term Institutional FDI Fitness. The four FDI Fitness Institutions are government, markets, education, and socioculture.

Figure 1 below is a schematic representation of institutional fitness.

FIGURE 1. PYRAMID OF FDI FITNESS INSTITUTIONS

Concentrated at top:
centralization, power, (conscious) sway over other institutions



Concentrated at bottom:
diffusion, longer implementation time, (unwitting) permeation of other institutions

Institutional Fitness is represented by the pyramid, whereby the base of the pyramid is formed by the sociocultural system because all other institutions are derived from and permeated by this most pervasive institution. Socioculture is the oldest of institutions, it is the most diffused, complex, and all-encompassing, and therefore the most difficult and time-intensive to change. The degree to which a country's citizens are receptive to different sociocultural and business modes is a function of citizenry's level of educational attainment, exposure to foreign cultures, and integration into the global economy. High degree of receptiveness enhances a nation's capacity to attract FDI. Foreign investors, on the other hand, often make allocation decisions based on perceived cultural proximity (Eastern Europe may be seen as a suitable FDI location if investors' ancestors originate from that region, whereas Asia may be perceived as unacceptable because of absence of cultural ties, or vice versa). Accounting for sociocultural factors in business planning can enhance the rationality of investment decisions and the predictability of business operations.

Education, the next FDI Fitness Institution in the pyramid structure, is the key to a flexible socioculture that deals with different modes of thinking and acting. Education builds human capital and prepares it for successfully handling the rapidly changing global economy. Educational fitness creates an environment attractive to FDI because it improves the ability to process information, enhances creativity in research, development, and technology and thus prepares a fertile ground for FDI. The degree to which the educational system affects FDI projects depends on projects' labor intensity and skill requirements, however it will have at least an indirect impact on productivity and efficiency of FDI operations.

Markets are the economic and financial indicators of FDI Fitness. While education is an indicator of human capital, markets reflect physical and financial capital such as machinery and credit. Regarding market fitness, it may be postulated that open competitive markets with protective regulation attract more FDI than markets subjected to directive regulation.[7] Well-functioning markets are a pivotal aspect in the investment decision, because they affect the very essence of FDI projects, their financial and economic transactions.

Finally, government reigns over the other FDI Fitness Institutions: socioculture, education and markets. Investors, therefore focus on government as the primary source for actions and policies shaping FDI. Accordingly, government forms the top of the pyramid, signifying the important role of political capital in attracting FDI.

FDI Fitness Institutions interact in varying forms. Government forces shape markets, education, and socioculture; market forces affect the government, education, and socioculture; education affects the

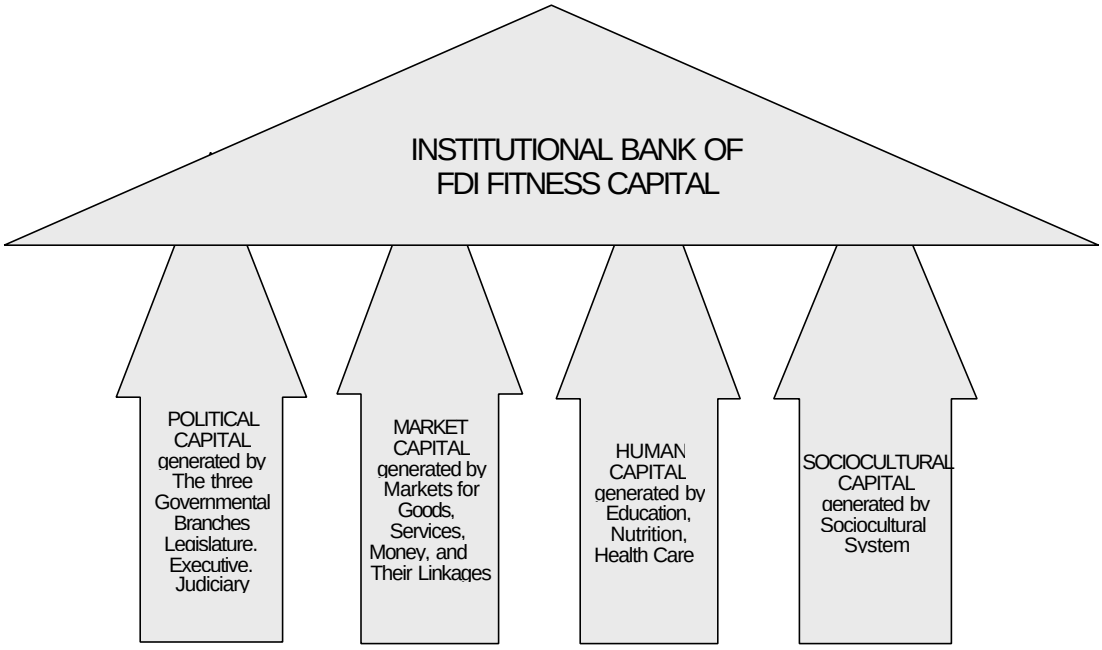
[7] Directive regulation is state intervention that throttles private initiative. On the other hand, protective regulation maintains the integrity of markets by protecting their agents against fraud (Jeswald W. Salacuse, Conversation [Medford, MA: Fletcher School of Law and Diplomacy, September 11, 1997.]) Thus, protective regulation secures the future of markets that are based on future-oriented transactions between agents. The Czech government, for example, encountered illegal dealings in its stock market after it let the market fitness pendulum swing from directive to no regulation. Governmental fitness consists of adopting the right amount of protective regulation to ensure market fitness.

human capital and consequently the government, markets, and sociocultural norms; whereas the sociocultural system is the origin of government, markets, and education.

As mentioned above, the ease with which an institution can be changed, and the time required for its change is dependent on the degree to which it is influenced by other institutions. A long-lived government may undergo changes faster than the very deeply rooted, diffused sociocultural system that permeates all aspects of society. Sociocultural change is evolutionary, unplanned, and multicausal and cannot be ascribed to an individual group of decision makers, whereas governmental change may be revolutionary, pre-planned, and due to a single cause. Between the two extremes of government and socioculture, one can find markets and education. Markets may be distorted or made competitive by government policies within days or years. Changes in the educational system take decades to alter the human capital base.

Institutional fitness can also be viewed in terms of institutional capital. Figure 2 below represents the "Institutional Bank of FDI Capital".

FIGURE 2. BANK OF FDI CAPITAL



The concept of institutional capital symbolizes national assets that accumulate with a country's capacity to attract and absorb FDI. The four types of capital are potentials that need to be unlocked, as from a vault, and activated, as through a secret code (which should be less secret after this study explains the activating factors).

Both terms, institutional capital and institutional fitness, are ways of looking at country's ability to attract FDI. The authors prefers the term institutional fitness because institutional capital implies a static set of endowments, while institutional fitness suggests that attracting FDI is a dynamic process. To attract FDI, countries must pursue it actively, instead of passively protecting local industries and natural resources. Fitness denotes an ability that has to be developed and continuously exercised.

Institutional systems tend to self-perpetuate.[8] Some sociocultural systems tends are prone to uphold their own traditions, other systems are traditionally open to foreigners and their influences and tend to continue attracting FDI. Unlike terrestrial resources, human beings around the world have a priori the same intellectual and institution-building capacities. An educational system that produces a skilled, knowledgeable workforce amenable to employment generates the talent and prosperity necessary to uphold and improve itself. Open markets tend to attract more FDI, which, in turn, perpetuates even higher FDI inflows. A government system receptive to FDI will continue to attract more FDI, thus leading prosperity, that in turn attracts even more FDI, which makes the government even more welcoming of FDI.

III. THEORETICAL FRAMEWORK AND LITERATURE

The rich literature on FDI flows, causes, and effects suggests that the applicable theories lend themselves to organization into three schools: the two traditional schools of development thinking– the dependency and modernization schools–and flowing from those traditional schools, what may be termed the integrative school.

The dependency school comprises dependencia (neo-Marxist) and structuralist theories. The modernization school is reflected in the perfect market approach as represented by the neoclassical and other perfect market theories; its imperfect market approach is embodied in industrial organization theory as well as in the theory of the firm and internalization theory. The integrative school is represented by the eclectic foreign direct investment paradigm, negotiation theory, and integrative theory. The present study is rooted in the integrative school and develops it further through the FDI Fitness theory and model.

[8] Anne O. Krueger, "Economists' Changing Perceptions of Government," *Weltwirtschaftliches Archiv* 126:3 (1990): 417-431.

1. THE DEPENDENCY SCHOOL

The dependency school, which flourished between the 1960s and 1980s, seeks to achieve more equal wealth, income, and power distributions through self-reliant and collective action of developing nations. Dependency theories see the cause of underdevelopment primarily in exploitation by the industrialized nations. The dependency school's major contribution to the FDI field is its focus on the consequences of foreign direct investment in developing countries and its critical analysis of Western development paradigms that regard FDI as unequivocally positive. Two sets of theories within the dependency school have emerged to explain the causes of underdevelopment and dependency: the dependencia/neo-Marxist subschool on the one hand and the structuralist subschool on the other.

The original dependencia or neo-Marxist subschool states that developing countries are exploited either through international trade which leads to deteriorating terms of trade (an unequal exchange in Marxist terms), or through multinational corporations transferring profits out of developing economies.

The structuralist subschool posits that international centers (industrialized countries) and domestic centers (national capital) extract resources from the peripheries, namely the poor countries or local countryside (F.H. Cardoso, A. Cordova, C. Furtado, A. Quijano, O. Sunkel). It does not criticize capitalism outright but rather points out that the peripheries do not gain from capitalism as much as the center does. According to this view, modernization, capitalization, and industrialization are limited to the export sector, causing other economic sectors to deliver according to export needs without reaping the benefits.[9]

The solution for underdevelopment offered dependency theorists encompasses various strategies of closing developing countries to international investment and trade. However, today it is widely accepted that foreign private investment is indispensable for economic growth and development and thus dependency theories are no longer a state doctrine. Nonetheless, fears of domination through foreign capital continue to be expressed in complex regulations, rent-seeking, and lagging implementation of investment reforms.[10]

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[9] See the overview by Dieter Nohlen, ed., *Lexikon Dritte Welt: Länder, Organisationen, Theorien, Begriffe, Personen* (Reinbek bei Hamburg: Rowohlt, 1991), 158-163. For a more extensive analysis of the origins and current thoughts of the dependency school, see Robert A. Packenham, *The Dependency Movement: Scholarship and Politics in Development Studies* (Cambridge, MA and London, England: Harvard University Press, 1992).

[10] Dependency theories have kept their appeal in the developing world because compared with modernization school, they strive for more radical change in the global economy. According to Salem, it may be hypothesized that more radical theories tend to be adopted by the underprivileged, who have a higher incentive for changing the status quo, but less to lose in terms of capital and other international resources than citizens of industrialized economies. Paul E. Salem, "A Critique of Western Conflict Resolution from a Non-Western Perspective," *Negotiation Journal* 9 (1993): 361–369.

2. THE MODERNIZATION SCHOOL

The modernization school was developed before the dependency school, and it remains widely influential to the present day. Modernization theorists proclaim that there is a natural order through which countries ascend to what is seen as higher developmental stages. The theorists recommend that developing countries follow in the footsteps of developed countries and overcome endogenous barriers to exogenously motivated development through industrialization, liberalization, and opening up the economy. The ability to overcome these barriers will depend on how endowed the country is with production factors such as labor, capital, and natural resources.

The modernization school views FDI as a prerequisite and catalyst for sustainable growth and development. For FDI to fulfill its crucial role, economies have to be freed from distorting state interventions and opened to foreign investment and trade. This stance is reflected in the big bang theories (postulating immediate all-encompassing privatization in Eastern Europe) and structural adjustment norms (transforming economic and political structures to overcome poverty in Latin America and Africa)

The perfect market approach of the modernization school rests on both neoclassical and perfect market theories. Early neoclassical theories explain international capital flows with differential rates of return across countries that lead to capital arbitrage, with capital seeking highest rate of return.[11] Capital arbitrage theories, however, do not explain why private investment takes the form of FDI and the theories' empirical testing has not produced clear results. Perfect market theories stem from free trade theories employing general equilibrium analyses. They assume perfect competition where all participants are price-takers–no monopolies or oligopolies–enjoying unhindered market entry and exit. Given that perfect market theories oversimplify reality, the market theory was elaborated upon by taking into account structural distortions or rigidities, which hinder an economy and thus prevent society taking full advantage of FDI.[12]

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[11] G.D.A. MacDougall, "The Benefits and Costs of Private Investment from Abroad: A Theoretical Approach," *Economic Record* 36 (1960), 13–35. MacDougall cited after Gerald K. Helleiner, "Transnational Corporations and Direct Foreign Investment," in *Handbook of Development Economics*, Volume 2, eds. Hollis Chenery and T.N. Srinivasan (Amsterdam and New York: Elsevier Science Publishers B.V., 1989), 1451. G.C. Hufbauer, "The Multinational Corporation and Direct Investment," in *International Trade and Finance: Frontiers for Research,* ed. Peter B. Kenen (Cambridge: Cambridge University Press, 1975). Hufbauer cited after J. Saúl Lizondo, "Foreign Direct Investment," in *Determinants and Systemic Consequences of International Capital Flows: A Study by the Research Department of the International Monetary Fund*, Occasional Paper 77, ed. International Monetary Fund (Washington, DC: International Monetary Fund, March 1991), 69.

[12] Distortions and rigidities rendering markets imperfect have been described, among others, by the following authors. R.A. Brecher and C.F. Diaz-Alejandro, "Tariffs, Foreign Capital, and Immiserizing Growth," *Journal of International Economics* 7 (1977): 317–322. J. Bhagwati and E. Tironi, "Tariff Change, Foreign Capital and Immiserization: A Theoretical Analysis," *Journal of Development Economics* 7 (1980): 71-83. J. Bhagwati and R.A. Brecher, "National Welfare in an Open Economy in the Presence of Foreign Owned Factors of Production," *Journal of International Economics* 19 (1980): 103-115. J. Bhagwati and R.A. Brecher, "Foreign Ownership and the Theory of Trade and Welfare," *Journal of Political Economy* 89 (1981): 497–511. R.A. Brecher and R. Findlay, "Tariffs, Foreign Capital and National Advantage with Sector-Specific

The imperfect market approach consists of industrial organization theory, the theory of the firm and internalization theory. Industrial organization theory holds macro- and micro-economic factors responsible for the real-life deviations from the perfect market model, specifically market entry barriers and transaction costs. It is based on the tenet that FDI occurs usually in oligopolies. Such market imperfections can make it more efficient for firms to diversify or integrate vertically or horizontally instead of competing against one another.

According to industrial organization theory, firms choose an investment location because of its comparative advantage after accounting for "friction" arising from transportation costs and trade barriers. The theory of the firm examines factors that influence a firm's choice of foreign investment instruments, ranging from selling a patent or trademark to a 100 percent FDI in a subsidiary. Internalization theory argues that firms keep operations internal through a 100 percent subsidiary because they want to control risk and retain control and market share.[13] Stated another way, FDI decisions are market-driven.[14] Internal markets created by transfer pricing and similar tools decrease risk and increase return for firms and at the same time promote open markets and enhancing global efficiency and optimal resource allocation.[15]

Acceptance of the imperfect market explanation still does not explain their origin. Yet, understanding host country barriers to FDI gives firms the opportunity to overcome rather than evade them. This is where the integrative school can be of help.

Factors," *Journal of International Economics* 14 (1983): 277–288. Brecher, Diaz-Alejandro, Bhagwati, Tironi, and Findlay cited after Gerald K. Helleiner, "Transnational Corporations and Direct Foreign Investment," in *Handbook of Development Economics*, Volume 2, eds. Hollis Chenery and T.N. Srinivasan (Amsterdam and New York: Elsevier Science Publishers B.V., 1989), 1,451. Trade theorist Kojima sees a country's comparative advantage as the major motivation for FDI: Kiyoshi Kojima, *Direct Foreign Investment: A Japanese Model of Multinational Business Operations* (London: Croom Helm, 1978). Kiyoshi Kojima, *Japanese Direct Investment Abroad*, Social Science Research Institute Monograph Series 1 (Mitaka, Tokyo: International Christian University, 1990).

[13] Raymond Vernon and Louis T. Wells, Jr., *Manager in the International Economy*, 4th ed. (Englewood Cliffs, NJ: Prentice-Hall, 1981), 5.

[14] P.J. Buckley and M. Casson, *The Future of the Multinational Enterprise* (London: Macmillan, 1976). S.P. Magee, "Information and Multinational Corporations: An Appropriability Theory of Direct Foreign Investment," in *The New International Economic Order*, ed. J. Bhagwati (Cambridge, MA: MIT Press, 1977), 317–340. Williamson, Buckley and Casson, and Magee cited after Gerald K. Helleiner, "Transnational Corporations and Direct Foreign Investment," in *Handbook of Development Economics*, Volume 2, eds. Hollis Chenery and T.N. Srinivasan (Amsterdam and New York: Elsevier Science Publishers B.V., 1989), 1452.

[15] Oliver E. Williamson, *Markets and Hierarchies: Analysis and Anti-Trust Implications* (New York: Free Press, 1975). A.M. Rugman and L. Eden, eds., *Multinationals and Transfer Pricing* (London: Crown Helm, 1985). Williamson and Rugman and Eden cited after Gerald K. Helleiner, "Transnational Corporations and Direct Foreign Investment," in *Handbook of Development Economics*, Volume 2, eds. Hollis Chenery and T.N. Srinivasan (Amsterdam and New York: Elsevier Science Publishers B.V., 1989), 1,452.

3. THE INTEGRATIVE SCHOOL

The integrative school attempts to transform categorical thinking on FDI by analyzing it from the perspectives of host countries as well as investors. It integrates those dependency and modernization concepts that are applicable to current FDI analysis. This study's author had developed the concept of the integrative school to account for both for the causes of FDI and for its treatment by host countries.

The eclectic paradigm, the firm and internalization theories, and industrial organization theory address FDI determinants from the viewpoint of the firm. The neoclassical and perfect market theories examine FDI from the perspective of free trade. The bargaining approach and the integrative theory shed more light on the perspective of the host nation without falling into the dependency theory's victimization trap. The Institutional FDI Fitness theory and model developed for this study stand in the tradition of the integrative school.

Having to face continuous development challenges after the ending of the cold war, brought the development community to the recognition that neither the developed nor the developing world are monolithic. Each development problem must be evaluated on its own terms, although it is possible to derive lessons from similar processes in other nations. Accordingly, integrative theories account for the multiplicity of heterogeneous variables involved in the FDI process.

An integrative FDI theory considers macro-, meso-, and meso-economic variables that determine FDI. The macro-level envelops the entire economy, the micro-level denotes firms, and the meso-level represents institutions linking the two, for example government agencies issuing investment policy to enterprises.

What distinguishes integrative FDI theory from its predecessors is that it accords more importance than previous theories to the meso-level, the sphere where macro- and micro-variables meet, and public and private sectors interact. It is in this arena that public policies are established and implemented. Thus, the meso-level is pivotal to the successful implementation of public policies. It is at the meso-level where day-to-day challenges in FDI policy implementation occur and structural rigidities are revealed. Structural rigidities may be expressed in phenomena such as corruption that can be ameliorated through measures such as appropriate training and pay for public servants. Despite its importance, the meso-level, has not received the attention it deserves because theorists are not always aware of the daily challenges that developing countries encounter in implementing economic and investment reforms. At the same time policy-makers often hesitate to speak out due to local sensibilities.

Based on the integrative school, this study has been designed as a further stepping stone toward explaining FDI in emerging economies. Hence, it integrates micro- and meso-economic FDI determinants that are beginning to gain recognition, but have not been thoroughly analyzed due to the difficulty in quantifying them.[16] Such determinants include over-regulation coexistent with a

[16] Amar Bhattacharya, Peter J. Montiel, and Sunil Sharma, "Private Capital Flows to Sub–Saharan Africa: An Overview of Trends and Determinants," Draft (Washington, DC: International Monetary Fund and World Bank, 5 December 1996), 15.

variance between written and operational codes, which leads to rent-seeking and an insecure legal environment; underdeveloped capital markets and financial intermediation; heavy-handed government interference in private sector operations and excessive state ownership; lack of educational and skill-building opportunities; and poor physical and communications infrastructure.

What is conceptualized in the theoretical section of this paper as Institutional Fitness has long been recognized by experts, especially practitioners, as a vital ingredient of economic development, albeit under different names: institutional development, institutional or bureaucratic structures, structural bottlenecks and reforms, implementation and administration. The novel approach of the Institutional FDI Fitness theory developed in the present study is combining insights into institutional structures from different disciplines and relating them specifically to FDI flows. Indeed it may be postulated that all four of the FDI Fitness levels contain important FDI determinants: government fitness, market fitness, educational fitness, and sociocultural fitness. Institutions, their policies, and law and policy implementation are crucial in increasing FDI. Unfortunately, foreign investors encounter large variances between written and operational codes and between the law on the books and the law as perceived by regulators.[17] Evidence suggests that many prospective foreign investors were deterred from establishing an FDI project once they begun to deal with a country's governmental institutions because of the variance between official and unofficial business practices.[18]

Thus, investment policy reforms place increasing emphasis on tackling implementation and structural challenges. The structural adjustment programs initiated in many developing countries in the 1980s have prepared these countries to transform themselves into emerging markets. More theoretical and empirical studies, such as the World Bank's explanation of the proverbial *East Asian Miracle*,[19] are finding a strong relationship between governmental fitness and economic growth, leading to a further intensification of reform efforts to bring about so-called good governance.

[17] These two terms originated from Jeswald W. Salacuse, conversations (Medford, MA: Fletcher School of Law and Diplomacy, 1996).

[18] In Ghana, for example, foreign direct investors cited problems with government officials as their single largest hindrance in establishing and operating a foreign direct investment project. Difficulties extended to officials ignoring laws, seeking rent, requiring the completion of forms that were nowhere available, and/or working at a significantly slower pace and being less understanding of private sector concerns than investors were accustomed to in Europe or the United States. Interestingly, domestic investors bemoaned the same problems. Foreign direct investors tended to think that domestic investors had better access to officials and more knowledge of local business practices, whereas domestic investors suspected that foreign investors were more respected by government officials, and, if not, at least had more financial resources at their disposal to speed up bureaucratic processes. Saskia K.S. Wilhelms, Interviews and Field Research (Ghana and Ivory Coast: May–September 1995).

[19] World Bank, *The East Asian Miracle: Economic Growth and Public Policy*, 2d. printing (New York: Oxford University Press, February 1994).

IV. METHODOLOGY

1. REGRESSION ANALYSIS

To attain as objective a testing of the Institutional FDI Fitness theory as possible, the study examines the performance of the theory in an econometric regression analysis that tests the concepts developed in the theoretical section.[20] There are several reasons for employing the econometric method. First, it amends the dearth of verifiable models in the otherwise remarkably rich field of FDI theories by operationalizing the Institutional FDI Fitness theory into a model that is checked against some "objective" numbers and validated or refuted. A second reason is to see whether the theory, based on the author's work and research on the topic of foreign direct investment (literature analysis, field work, interviews with private investors, government officials, and investment experts) can be generalized across a wide range of countries and time periods. Third, the econometric analysis is used to give others an opportunity to relate to the theory through quantitative analysis that is traditionally regarded as more neutral and objective than purely qualitative analysis.[21]

The econometric model is an approximation of reality as depicted conceptually in the theoretical section on FDI Fitness because operationalizing the theory into a testable model requires compromises in regard to the ideally desired variables. Variables from the original FDI Fitness theory that are not tested in this first version of the FDI Fitness model include the network of multilateral and bilateral investment treaties (BITs), regional market size or existence of regional trade schemes, degree of divestiture, existence of stock exchange, and labor costs and efficiency.[22] Data availability and reliability are the most significant constraints on a cross-section analysis of developing nations, where collecting and categorizing data is neither a priority nor conducted uniformly. Nonetheless, the available proxies allow for econometric testing of the FDI Fitness model.

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[20] The Institutional FDI Fitness theory has also been tested in an exploratory case study based on literature analysis and field research. The field study was conducted from May to September 1995 in Ghana, where the author worked at the Ministry of Finance. Further research was carried out throughout August 1995 at the African Development Bank in the Ivory Coast. Thorough insights were gained from over a hundred informational interviews with domestic and foreign investors, government officials, consultants, representatives from donor agencies, and scholars. The case study fills an information gap concerning Ghana's new legal investment framework. Saskia K.S. Wilhelms, *Institutional FDI Fitness: Determinants of Foreign Direct Investment to Emerging Economies*, PhD Thesis (Medford, MA: Fletcher School of Law and Diplomacy, February 1998).

[21] For a commentary on the pitfalls of statistical analysis, see Peter Coy, "He Who Mines Data May Strike Fool's Gold," *Business Week*, 16 June 1997, 40. To maximize the rewards from quantitative and qualitative analysis, this study employs both methods.

[22] The selection of these variables is corroborated by World Bank research, which is an indication that an addition of these variables ought to increase further the FDI Fitness model's explanatory power. World Bank, *Private Capital Flows to Developing Countries: The Road to Financial Integration* (New York: Oxford University Press, April 1997), particularly 75-103.

2. HYPOTHESIS, OBSERVATION UNITS AND METHOD

In the tradition of integrative FDI theory, the Institutional FDI Fitness theory states that it is predominantly institutions and their policies and implementation that determine foreign direct investment inflows. The testing of the FDI Fitness model therefore is expected to find a higher correlation between FDI inflows and institutional variables amenable to policy change than between FDI inflows and generic intransigent variables. (Generic variables control for broad underlying conditions that are intransigent or predetermined and thus seem inherent to a country. Location, for example, is predetermined while total population size is an inflexible factor that responds extremely slowly to policies.)

The correlation between the dependent variable FDI and the four FDI Fitness subconcepts–embodying explanatory variables for government, markets, education, and socioculture–is measured in a cross-section analysis. The regressions are conducted in the form of ordinary least squares (OLS) analysis.

The functional form is $FDI = \beta + \beta G + \beta M + \beta E + \beta S$. The acronym FDI represents the dependent variable foreign direct investment. The four capital letters denote the four explanatory concepts of FDI fitness, which are composed of four sets of independent variables. G stands for government, M for markets, E for education, and S for socioculture (0 symbolizes the intercept).

The variables and data have been selected and extracted from the World Bank's *World Development Indicators 1997,* unless noted otherwise. The data have been stacked in Excel, and econometrically analyzed in Econometric Views.

Among the countries classified as low- and mid-income economies by the World Bank's *World Development Indicators 1997,* those selected for analysis have data available on foreign direct investment inflows for each year between 1978 and 1995. As a result, the sample includes the following 67 developing countries (with acronyms from the World Bank's *World Development Indicators 1997*): Argentina (ARG), Bangladesh (BGD), Barbados (BRB), Bolivia (BOL), Botswana (BWA), Brazil (BRA), Burkina Faso (BFA), Burundi (BDI), Cameroon (CMR), Chad (TCD), Chile (CHL), China (CHN), Colombia (COL), Costa Rica (CRI), Côte d'Ivoire (CIV), Dominican Republic (DOM), Ecuador (ECU), Egypt (EGY), El Salvador (SLV), Gabon (GAB), The Gambia (GMB), Ghana (GHA), Greece (GRC), Guatemala (GTM), Guinea-Bissau (GNB), Guyana (GUY), Haiti (HTI), Honduras (HND), Hungary (HUN), India (IND), Indonesia (IDN), Jamaica (JAM), Kenya (KEN), Lesotho (LSO), Madagascar (MDG), Malawi (MWI), Malaysia (MYS), Mauritania (MRT), Mauritius (MUS), Mexico (MEX), Morocco (MAR), Nepal (NPL), Nicaragua (NIC), Niger (NER), Oman (OMN), Pakistan (PAK), Panama (PAN), Papua New Guinea (PNG), Paraguay (PRY), Peru (PER), Philippines (PHL), Rwanda (RWA), Senegal (SEN), Sierra Leone (SLE), South Africa (ZAF), Sri Lanka (LKA), Suriname (SUR), Swaziland (SWZ), Syrian Arab Republic (SYR), Thailand (THA), Trinidad and Tobago (TTO), Tunisia (TUN), Turkey (TUR), Uruguay (URY), Venezuela (VEN), Zambia (ZMB), and Zimbabwe (ZWE).

The econometric analysis is based on data collected for the years 1978 to 1995. The time period captures the effects of structural adjustment programs that in many countries began in the 1980s

and usually involved reforms of the investment environment. The 18 years are divided into three time periods to measure the correlation between FDI, averaged over three years, and the explanatory variables, averaged over the preceding five years. This approximation of reality is based on the underlying assumption that FDI projects have an incubation period of 12 to 36 months from inception to registration or actual operation. When pondering the establishment of an FDI project, potential investors concentrate on country data from the previous five years, therefore there is a lag between the explanatory and the dependent variables. The pace with which reforms take effect depends on their nature: investment law reforms may show an improvement in FDI within a few months because they directly affect foreign direct investors, whereas economic policies may take years to implement and thus alter the investment environment significantly. Making the equations recursive by keeping simultaneity to a minimum creates a methodological advantage of accounting for time lags.[23]

The first time period relates 1983-1985 FDI to 1978-1982 explanatory variables; the second measures 1988-1990 FDI and 1983-1987 explanatory variables; the third examines 1993-1995 FDI and 1988-1992 explanatory variables. For every country, each relationship between each three-year FDI period and the preceding five-year independent variable period is treated as a separate observation. Given that each of the 67 countries yields three cross-sections, the entire sample contains 201 observations.

Apart from the independent variables explaining host country determinants, time dummy variables have been introduced to control for external factors affecting FDI in a given period. The averaging over several years avoids random variability that may occur from year to year, especially in small economies (for example, when a multinational corporation makes a large investment in one year). Taking averages also bridges missing observations for the explanatory variables.

Limited data availability required compromising and giving preference to less ideal proxies if they rendered a more complete set of observations. Building of the regressions began with the variables with a complete data availability, namely, the generic variables such as total population and GDP. Creating variable combinations allowed interpretation of results taking into account changes in the variables as well as the number of observations.

Generic variables form the basis for the econometric analysis not only because of methodological considerations but also because policy-makers in real life are face generic fundamentals that change slowly over time and that are hardly amenable to influence. The main point to be tested for these generic variables is how far they predetermine foreign direct investment inflows. Are countries with small populations, for example, doomed not to receive FDI? Is Sub-Saharan Africa irreversibly set on a course of trailing behind all other regions in terms of investment–and economic–performance? Another question to be investigated in this context is to what extent GDP influences foreign direct investment inflows.

[23] The same technique was used by J. Dirck Stryker and Selina Pandolfi, *Impact of Outward-Looking, Market-Oriented Policy Reform on Economic Growth and Poverty* (Cambridge, MA: Associates for International Resources and Development, April 1997), 13.

After results were obtained in these regressions with unlogged variables, their robustness was tested by using the semi-logged and logged forms. In the semi-logged version, only the explanatory variables were logged, in the double-logarithmic form all variables were logged. Growth rates and indices remained unlogged in all specifications. One advantage of using the linear-log form is that it allows results to be expressed in percentage terms, with a 1 percent increase in one of the independent variables leading to a certain percentage change in the dependent variable. On the other hand, logging causes a loss in observations, because negative values cannot be logged. Nonetheless, the three alternative forms yielded highly similar results and thus confirm variable robustness. Therefore, the ensuing reporting of results focuses on the form with the highest sample size, the linear form.

V. HYPOTHESES, VARIABLES, AND EXPECTED FINDINGS

The Institutional FDI Fitness model postulates that it is not the intransigent generic conditions, but rather the institutions and their policies and implementation that are pivotal to increasing foreign direct investment. The Institutional FDI Fitness model predicts that, all else equal, countries with high Institutional Fitness experience higher inflows of foreign direct investment than countries with low Institutional Fitness.

High Institutional Fitness means that a country's institutions are transparent, well-functioning, reliable, and predictable. Institutional or FDI Fitness comprises the four explanatory subconcepts: governmental fitness, market fitness, educational fitness, and sociocultural fitness.

All variables and definitions stem from the *World Development Indicators 1997*[24], unless otherwise indicated.

Figure 3 below depicts the key variables of the Institutional FDI Fitness model that will be explained in the following sections.

1. DEPENDENT VARIABLE

- **FDI - FOREIGN DIRECT INVESTMENT INFLOWS, (PERCENT OF GDP) INDICATING FOREIGN DIRECT INVESTMENT**

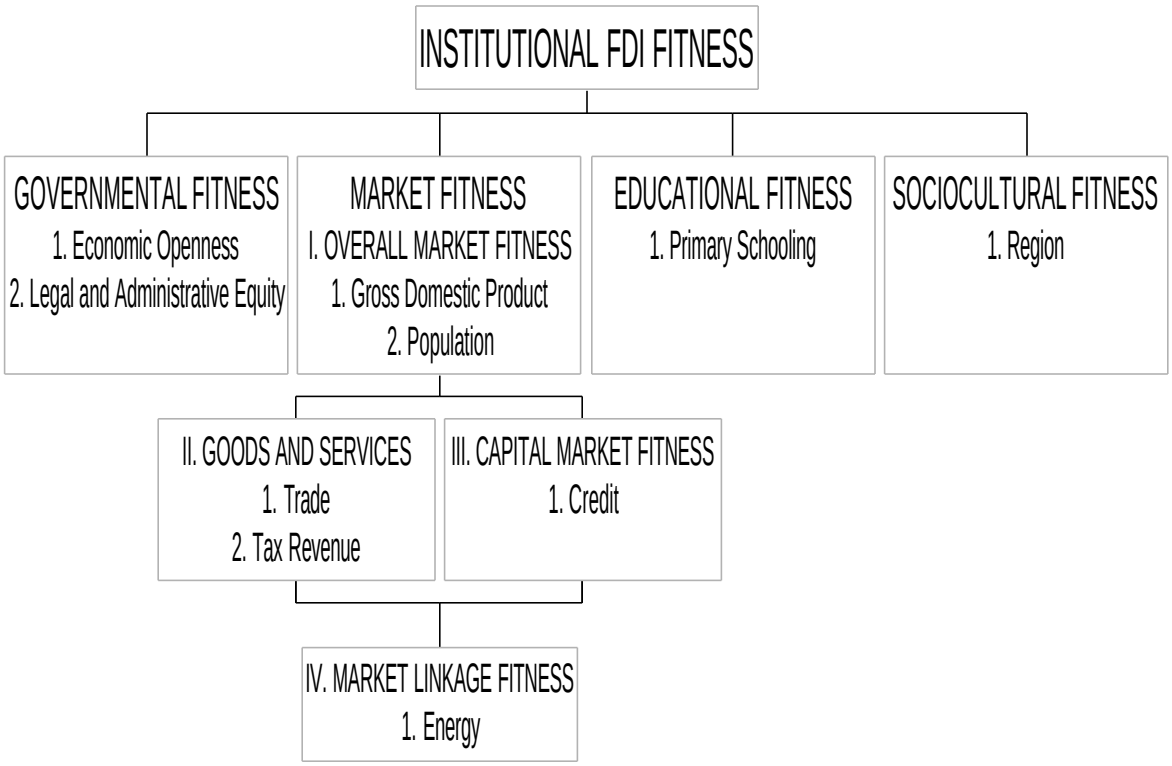
The dependent variable foreign direct investment is measured by net inflows of foreign direct investment as a percentage of gross domestic product. Foreign direct investment is, in turn, defined as net inflows of "investment to acquire a lasting management interest (10 percent or more of voting stock)"[25] "in an enterprise operating in a country other than that of the investor (defined according to residency), the investor's purpose being an effective voice in the management of the enterprise. It

[24] World Bank, *World Development Indicators 1997* on CD-ROM (Washington, DC: World Bank, March 1997).

[25] World Bank, *World Development Indicators 1997* on CD-ROM (Washington, DC: World Bank, First Edition March 1997).

is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments."[26]

FIGURE 3. KEY VARIABLES OF INSTITUTIONAL FDI FITNESS MODEL



2. INDEPENDENT/EXPLANATORY VARIABLES

A. FIRST EXPLANATORY CONCEPT: GOVERNMENT FITNESS

In applying the government fitness concept to the legislative branch of government, high level of government fitness means that the legislature's decision- and law-making processes are transparent, efficient, and reasonably democratic (meaning that those societal groups that have to support and carry through policies are included in the government decision-making process, thus facilitating policy implementation). Applied to the executive level of government, high government fitness

[26] World Bank, *Global Development Finance 1997*, Vol. 1 (Washington, DC: World Bank, March 1997), 180.

means that policies are implemented transparently, efficiently, and consistently to ensure equitable treatment of all subjects under the law. Applied to the judicial branch of government, high governmental fitness means a transparent, reliable, independent, fair, and equitable judiciary that guarantees high government fitness of the legislature and executive branch.

High government fitness is expected to increase FDI by decreasing instability and thus investment risk. The explanatory concept government fitness is measured by the following variables:

- **gECOPi[27] – ECONOMIC OPENNESS INDEX INDICATING ECONOMIC OPENNESS**

Exploring the reasons for economic growth, Sachs and Warner postulate that poor countries show "no overall tendency" to catch up or converge, with the wealthy nations because is their trade regimes are closed compared with those of the rich nations. This contradicts a widely held theory of economic convergence, which states that by drawing on technology, knowledge, and capital already existing in the industrialized economies, poorer countries can fast-forward the development process and thus "close the proportionate income gap."[28] Assuming that economic growth depends to a large extent on investment, the economic openness index is used as an explanatory variable in this study's econometric analysis of determinants of foreign direct investment.

Sachs and Warner construct the dummy variable that they call OPEN as an index for economic openness with the following four variables (OPEN equals 0 "if a country scored a 1 on either" on the following):

Parallel Market Exchange Rate Premium: Dummy variable equals 1 if the black market exchange rate premium, averaged over the 1970s and 1980s respectively, was higher than 0.2 for either decade.[29]

Socialist: Dummy variable equals 1 if a country classified as socialist by Kornai.

Export Marketing Board: Dummy variable equals 1 if the economy is significantly distorted by an export marketing board.

Import Quotas: Dummy variable equals 1 if the "own-import weighted nontariff frequency on capital goods and intermediates" between 1985 and 1988 exceeds 0.4. This variable indicates how intermediate and capital goods imports are affected by quotas, licenses, and prohibitions.[30]

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[27] An explanation of variable acronyms: the prefixes g, m, e, and s represent the four FDI Fitness subconcepts government, markets, education, and socioculture. The prefix t refers to time. The suffix i means index, d denotes a dummy variable.

[28] Jeffrey D. Sachs and Andrew Warner, "Economic Reform and the Process of Global Integration," *Brookings Papers on Economic Activity* 1 (1995): 2-3.

[29] The source for the parallel market exchange rate premium as used by Sachs and Warner is: Philip P. Cowitt, ed., *1985 World Currency Yearbook* (Brooklyn, NY: International Currency Analysis, Inc., 1986); updated with World Bank data supplied by Ross Levine.

[30] Sachs and Warner took the import quota variable from Barro and Lee who based it on UNCTAD

For the regressions in this study, the annual value of OPEN was averaged over each of the three five-year time periods, 1978-1982, 1983-1987, and 1988-1992 and resulted in the variable gECOPi (government ECONOMIC OPENNESS index).

From the perspective of the FDI Fitness model, the four components of the economic openness index represent proxies for

- an exchange rate that reflects a currency's true value, which reduces uncertainty and transaction costs for foreign investors;
- little government interference in markets, that is, "free" markets;
- an open export regime; and
- an open import regime.

All four components of the economic openness index are expected to increase FDI; thus, the sign of the coefficient is expected to be positive.

- **gLAWi, gCORRi – INTERNATIONAL COUNTRY RISK GUIDE/IRIS VARIABLES INDICATING LEGAL AND ADMINISTRATIVE IMPARTIALITY AND TRANSPARENCY**

Certain variables measuring government, particularly legal fitness were selected for their potential to be particularly relevant to private investors. Commercial risk-rating agencies, which are used by banks, companies, and individuals, supply the most comprehensive data for such variables.

The International Country Risk Guide (ICRG) is published by the IRIS Center at the University of Maryland and the original data collectors Political Risk Services.[31] One of their data sets contains the following five variables for 1982-1995:

- government repudiation of contracts (scale of 0-10);
- risk of expropriation (0-10);
- corruption in government (0-6);
- law and order tradition/rule of law (0-6); and
- bureaucratic quality (0-6).

High scores correlate with desirable properties for private investors and indicate that institutions are impartial, transparent, and trustworthy. Hence, the sign of the coefficient is expected to be positive.

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data. Robert J. Barro and Jong-Wha Lee, "Data Set for a Panel of 138 Countries," unpublished data set, (Cambridge, MA: Harvard University, January 1994). For further information on the sources of these variables and data, see Jeffrey D. Sachs and Andrew Warner, "Economic Reform and the Process of Global Integration," *Brookings Papers on Economic Activity* 1 (1995): 65-66. Country classifications 72-95.

[31] Another risk index with potentially high explanatory power is BERI, Business Environmental Risk Intelligence. Because it includes more years but fewer countries than ICRG/IRIS, it unfortunately could not be used for this study. Special thanks to Philip Keefer for so promptly providing the BERI data. Knack and Keefer found that ICRG/IRIS has greater explanatory power for economic growth, whereas BERI has more power for foreign direct investment: Stephen Knack and Philip Keefer, "Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures," IRIS Working Paper 109, *Economics and Politics* 7:3 (November 1995): 216.

Of these five variables, the highest correlation with FDI will exist for those that have the most direct impact on foreign direct investment operations, namely, corruption and rule of law. Corruption is related to bureaucratic quality, and is felt more immediately by the foreign investor than the rule of law–in many cases, upon arrival at the airport. A strong rule of law, however, implies a particularly low likelihood of government contract repudiation or expropriation as well as strong protection of investors' rights by the legal system.

As expressed by the ICRG creators, "a country with an established law and order tradition has sound political institutions, a strong court system, and provisions for an orderly succession of power. This indicator reflects the degree to which the citizens of a country are willing to accept the established institutions to make and implement laws and adjudicate disputes. . . instead of depending on physical force or illegal means to settle claims. In countries with poorly developed law and order traditions, governments may be less likely to accept the obligations of the previous regime."

The authors regard corruption as "a threat to foreign investment for several reasons: it distorts the economic and financial environment, it reduces the efficiency of government and business by enabling people to assume positions of power through patronage rather than ability, and, last but not least, [it] introduces an inherent instability into the political process. Foreign lenders and investors may find it difficult to conduct business effectively in countries where there is widespread financial corruption, in the form of demands for special payments and bribes connected with import and export licenses, exchange controls, tax assessments, police protection, or loans…Corruption in the form of excessive patronage, nepotism, job reservations, and `favor-for-favors'" interferes with merit-based competition in free markets. This induces "popular discontent," parallel markets, and risks to private business.[32]

B. SECOND EXPLANATORY CONCEPT: MARKET FITNESS

High market fitness means that domestic and international markets for goods, services, and capital are well-developed and linked to one another. Well-functioning markets are expected to increase FDI inflows. The explanatory concept market fitness will be measured by the following variables:

OVERALL MARKET FITNESS

- **mGDPCP – GROSS DOMESTIC PRODUCT AT MARKET PRICES (US$) PER CAPITA INDICATING ECONOMIC DEVELOPMENT**

GDP per capita indicates economic development and connotes an economy's efficiency and productivity.[33] GDP per capita is expected to have positive correlation with FDI and therefore the sign of the coefficient is expected to be positive.

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[32] William D. Coplin, Michael K. O'Leary, and Tom Sealy, *A Business Guide to Political Risk* (East Syracuse, NY: PRS [Political Risk Services] Group, 1991, revised October 1993): 47-48, 46. For reasons why corruption matters, see also Paolo Mauro, *Why Worry About Corruption?* Economic Issues No. 6 (Washington, DC: International Monetary Fund, 1997).

[33] In a sensitivity analysis of empirical linkages between economic growth and policy, political, and institutional variables, Levine and Renelt find that most are fragile except for a "positive, robust

Gross domestic product is measured at market prices in US$. "GDP measures the total output of goods and services for final use occurring within the domestic territory of a given country, regardless of the allocation to domestic and foreign claims. Gross domestic product at purchaser values (market prices) is the sum of gross value added by all resident and nonresident producers in the economy plus any taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current U.S. dollars. Dollar figures for GDP are converted from domestic currencies using single year official exchange rates. For a few countries where the official exchange rate does not reflect the actual exchange rate applied to actual foreign exchange transactions, an alternative conversion factor is used. (See footnote 25)."

- **mPOP – TOTAL POPULATION INDICATING MARKET SIZE**

"Total population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship. Refugees not permanently settled in the country of asylum are generally considered to be part of the population of their country of origin. (See footnote 25)." Total population connotes market size. Given that population changes slowly over time, it is an intransigent variable. According to FDI theories, market size is a concern to foreign direct investors because large markets offer increased input supply and output demand as well as economies of scale. Market size is expected to be positively correlated with FDI and therefore the sign of the coefficient is expected to be positive.

- **mPOPUR – URBAN POPULATION (PERCENT OF TOTAL POPULATION) INDICATING URBANIZATION**

The capacity of institutions to support a country's population can be gauged by using population variables that are more specific than mPOP–total population. Urban population as a percentage of total population reflects the degree of urbanization, urban institutions, and agglomeration effects. "Urban population is the midyear population of areas defined as urban in each country. It is measured here as the percentage of the total population. (See footnote 25)."

Given that foreign direct investment often concentrates in urban areas,[34] the positive effects of agglomeration (access to political and financial institutions, better infrastructure, larger and more varied labor pool, citizens more exposed to foreign influences) are expected to outweigh the negative effects (congestion and pollution) in the eyes of foreign investors, thus resulting in a positive correlation between mPOPUR and FDI and a positive correlation coefficient.

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correlation between growth and the share of investment in GDP and between the investment share and the ratio of international trade to GDP." Ross Levine and David Renelt, "A Sensitivity Analysis of Cross-Country Growth Regressions," *American Economic Review* 82:4 (September 1992): 942 (quoted), 953-954, 959.

[34] Saskia K.S. Wilhelms, Interviews and Field Research (Ghana and Ivory Coast: May-September 1995).

It must be noted that urbanization and rural population density are closely related to human capital and education. In fact, these two variables could also be grouped under the subconcept of educational fitness. The reason is that urban citizens are more exposed to international influences, and have better institutional access, including access to education. Rural population density may also be positively correlated with infrastructure development, however to a lesser degree than urbanization. This is a reflection of a greater number of linkages in more densely populated areas. Hence, both urbanization and rural population density are expected to be positively correlated with FDI inflows. Furthermore, both variables can serve as proxies for human capital.

- **mDENRU – POPULATION DENSITY, RURAL (PEOPLE PER SQUARE KILOMETER) INDICATING RURAL INFRASTRUCTURE AND LINKAGES**

"Rural population density is the rural population divided by the arable land area. Arable land refers to land under temporary crops, temporary meadows for mowing or pasture, and land under market and kitchen gardens. (See footnote 25)." Given that sparsely populated rural areas are prone to suffer from severe infrastructure deficiencies and poor labor availability, high rural population density should further FDI. Densely populated rural areas ought to increase linkages between rural and urban areas, thus enhancing their integration. The sign of the coefficient, therefore, is expected to be positive.

GOODS AND SERVICES MARKET FITNESS

- **mTRADE – FOREIGN TRADE (PERCENT OF GDP) INDICATING TRADE VOLUME**

"Trade is the sum of exports and imports of goods and services" (see footnote 25) measured as a percentage of GDP. High trade volume indicates that many goods are being imported and exported. These goods may take the form of inputs and outputs related to the operation of foreign direct investment projects. A high incidence of trade suggests relatively low trade barriers.[35] High trade volume is particularly important to export-oriented FDI. While import-substitution FDI gains from trade barriers against competing imported products, it benefits from low trade barriers against imported inputs. The sign of the coefficient is therefore expected to be positive.

- **mTXREV – TAX REVENUE (PERCENT OF GDP) INDICATING TAXATION OF THE PRIVATE SECTOR**

"Tax revenue comprises compulsory, unrequited, nonrepayable receipts for public purposes collected by central governments. It includes interest collected on tax arrears and penalties collected on nonpayment or late payments of taxes and is shown net of refunds and other corrective transactions. (See footnote 25)."

[35] Previous research has found a positive, robust correlation between the share of trade in GDP and the share of investment in GDP. Ross Levine and David Renelt, "A Sensitivity Analysis of Cross-Country Growth Regressions," *American Economic Review* 82:4 (September 1992): 942, 953-954, 959.

High taxation constitutes a burden on private sector operations. Furthermore, given their lack of administrative funds and capacity, developing countries tend to rely heavily on trade taxes as opposed to income or value-added taxes on local production, because trade taxes can be readily collected at the port of entry or exit. Thus, in developing economies, high tax revenue means high trade taxes, which affects particularly foreign direct investors, who are dependent on imports and exports. Even where FDI-related imports are duty-free, high taxation translates into more administrative and financial strains on FDI operations. Therefore, the sign of the coefficient is expected to be negative.

CAPITAL MARKET FITNESS

- **mCRED – DOMESTIC CREDIT PROVIDED BY BANKING SECTOR (PERCENT OF GDP) INDICATING CREDIT AVAILABILITY AND FINANCIAL INTERMEDIATION**

"Domestic credit provided by the banking sector includes all credit to various sectors on a gross basis, with the exception of credit to the central government, which is net. The banking sector includes monetary authorities and deposit money banks, as well as other banking institutions where data are available (including institutions that do not accept transferable deposits but do incur such liabilities as time and savings deposits). Examples of other banking institutions are savings and mortgage loan institutions and building and loan associations. (See footnote 25)."

Providing credit is one of the most important functions of financial intermediation. A financial system that supplies credit is expected to positively influence the FDI equation, because an increase in available capital induces business activity. Thus, the sign of the coefficient is expected to be positive.

MARKET LINKAGE FITNESS

- **mENER – COMMERCIAL ENERGY USE (KG OF OIL EQUIVALENT PER CAPITA) INDICATING DEVELOPMENT OF ENERGY INFRASTRUCTURE**

"Commercial energy use is indigenous production plus imports and stock changes, minus exports and international marine bunkers. (See footnote 25)."

Widely and readily available energy facilitates foreign direct investment projects. As a result, the sign of the coefficient is expected to be positive.

C. THIRD EXPLANATORY CONCEPT: EDUCATIONAL FITNESS

High educational fitness means that a country's workforce is internationally competitive in terms of education and productivity. It is expected that high educational fitness increases FDI inflows.

The following variable measures explanatory concept educational fitness:

- **ePRSCH – PRIMARY SCHOOL ENROLLMENT (PERCENT OF GROSS ENROLLMENT) INDICATING BASIC EDUCATION**

A well-educated labor force in private and public sectors facilitates foreign direct investment. Among the existing education variables, those indicating educational attainment–such as literacy and numeracy–are far more desirable than simple measurements of enrollment. Primary school enrollment is a highly insufficient indicator for education because it does not show whether pupils actually attend classes, let alone whether they attain literacy or other professional qualities desirable for private investors.[36] Data on educational attainment are, however, even more unreliable and scarce than enrollment data. Hence, data availability restricts the choices for this regression and for the analysis, primary school enrollment variable was used instead of a preferred educational attainment variable.

"Gross enrollment ratio is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Estimates are based on UNESCO's classification of education levels. Primary, or first level, provides the basic elements of education at elementary or primary school. (See footnote 25)."

To complement the conceptually unsatisfactory enrollment variable, the analysis includes two broader proxies for human capital: the degrees of urbanization and rural population density, which indicate not only physical infrastructure development, but also intangible linkages such as knowledge transfer. Urban citizens tend to be comparatively well-educated and sophisticated about foreign mores, since they have more opportunities to get informed themselves and get more exposure to foreign business practices.

D. FOURTH EXPLANATORY CONCEPT: SOCIOCULTURAL FITNESS

High sociocultural fitness means that a country is flexible and open to FDI and international market trends. It does not mean that it adopts foreign values, but rather that it adapts to developments and business practices in the global marketplace. The variable of sociocultural fitness does not pass a value judgment on a country's sociocultural system, instead, it captures local attitudes and behaviors that affect incoming FDI.

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[36] George Psacharopoulos and Ana María Arriagada, "The Educational Composition of the Labour Force: An International Comparison," World Bank Reprint Series 402 (Washington, DC: World Bank). Originally, *International Labour Review* 125:5 (September-October 1986): 561, 569. George Psacharopoulos, *Building Human Capital for Better Lives* (Washington, DC: World Bank, February 1996 [First printing, July 1995]). On reasons for focusing on primary versus secondary education, see pages 14–15. Psacharopoulos identifies two priorities for developing countries, namely economic policies stimulating growth (which largely ought to occur through private investment), and investments in human capital. For more information on the link between growth and education, see pages 2-3. Gundlach states that a measurement of the "'true' stock of human capital," that is, educational fitness, ought to indicate the experience of the labor force as well as cross-country differences in the quality of formal education. Erich Gundlach, "Accounting for the Stock of Human Capital: Selected Evidence and Potential Implications," *Weltwirtschaftliches Archiv* 130:2 (1994): 352-353.

It is expected that high sociocultural fitness in terms of attracting FDI increases FDI inflows. To keep subjectivity of sociocultural measures to a minimum, the explanatory concept sociocultural fitness will be measured by regional dummy variables.

- **sEAPd, sSSAd – REGIONAL DUMMY VARIABLES INDICATING REGIONAL SOCIOCULTURE**

Regional dummy variables are assigned–in accordance with the World Bank classification–to East Asia and the Pacific, Europe and Central Asia, Latin America and the Caribbean, the Middle East and North Africa, South Asia, and Sub-Saharan Africa.

At one end of the spectrum, the dummy variable for East Asia and the Pacific is expected to correlate positively with FDI, because of sociocultural factors such as relative flexibility in regard to foreign business practices and a high premium on educational attainment. The other extreme is expected to be Sub-Saharan Africa, which is perceived by most foreign investors as relatively unexposed to international business practices. Therefore, the coefficient for Sub-Saharan Africa is therefore expected to be negative.

- **t2d, t3d – TIME DUMMY VARIABLES AS CONTROL VARIABLES INDICATING PERIOD-SPECIFIC CHARACTERISTICS**

Time dummy variables control for period-specific effects. Since foreign direct investment increased globally between 1978 and 1995, it is expected that the time dummy variables will have a positive sign, increasing in magnitude in chronological order for each time dummy variable.

VI. REGRESSION ANALYSIS

The findings for four regressions will be discussed in this section.

1. VARIABLE RESULTS AND EXPLICATION

Unless indicated otherwise, the analysis refers to cross-section results on FDI Fitness depicted in tables 1 and 2 following this section.

A. FIRST EXPLANATORY CONCEPT: GOVERNMENT FITNESS

High governmental fitness was expected to further FDI, because it decreases economic, political, legal, and administrative instability and thus investment risk. The following explanatory variables measured the concept of al fitness:

- **Economic Openness Index**

Sachs and Warner composed the economic openness index represented by a dummy variable out of the non-existence of a parallel market exchange rate premium, socialist form of , export marketing board, or import quotas.

As expected, economic openness is positively, robustly correlated with foreign direct investment inflows, demonstrating that nonsocialist governments and relatively free markets for capital, goods, and services–domestically and in interaction with the outside world–have a positive impact on FDI inflows. The coefficient in regression number IV and the fact that time dummy variables pick up some of economic openness' significance may indicate that a global increase in economic openness over time has contributed to a rise in FDI.

- **Legal and Administrative Impartiality and Transparency**

Based on the International Country Risk Guide (ICRG) 1982-1995 published by the IRIS Center and Political Risk Services, the analysis tested the five variables: government repudiation of contracts, expropriation, corruption in government, law and order tradition/rule of law, and bureaucratic quality.

As expected, the two variables indicating a strong rule of law and low corruption show the highest and most robust positive correlation with FDI. Compared with the other variables in the FDI Fitness model, these variables have high coefficients. After regression number I, the law and corruption variables–tested in separate regressions because they measure related phenomena–are about equally strong in terms of significance and coefficient. The fact that the corruption variable picks up explanatory power from the credit variable (regression I through IV with the corruption variable) confirms the hypothesis that financial intermediation is strongly affected by rent-seeking behavior. In countries with scarce economic resources, credit provision becomes a favor, which distorts and destabilizes the investment environment.

B. SECOND EXPLANATORY CONCEPT: MARKET FITNESS

High market fitness means that domestic and international markets for goods, services, and capital are well developed and linked to one another through infrastructure. Well-functioning markets are expected to increase FDI inflows. The following variables measured the explanatory concept market fitness.

TABLE 1. CROSS-SECTION RESULTS ON FDI FITNESS (Rule of Law)

		I		II		III		IV	
	Variable	**Coefficient**	**t-Statistic**	**Coefficient**	**t-Statistic**	**Coefficient**	**t-Statistic**	**Coefficient**	**t-Statistic**
	C	-0.874	-2.141	-0.860	-1.612	-0.799	-1.343	-0.791	-1.352
Govern.	**gECOPi**	**0.765 ****	2.985	**0.983 ****	3.650	**0.875 ****	2.955	**0.555**	1.739
	gLAWi	**0.234 ****	2.447	**0.249 ****	2.591	**0.245 ****	2.421	**0.236 ****	2.344
Markets	**mGDPCP**	**0.000 ****	-3.305	**-0.001 ****	-4.026	**-0.001 ****	-3.955	**-0.001 ****	-3.674
	mPOPUR	**0.016 ***	2.276	**0.018 ***	2.313	**0.020 ***	2.317	**0.017 ***	1.985
	mDENRU	**0.000 ****	3.916	**0.000 ****	2.763	**0.000 ***	2.185	0.000	1.503
	mTRADE	**0.020 ****	3.965	**0.018 ****	3.560	**0.018 ****	3.410	**0.017 ****	3.418
	mTXREV	**-0.067 ****	-3.361	**-0.078 ****	-3.935	**-0.072 ****	-3.422	**-0.062 ****	-2.975
	mCRED	**0.008 ****	2.344	**0.009 ****	2.844	**0.009 ****	2.390	**0.007 ***	2.007
	mENER	**0.001 ****	4.589	**0.001 ****	5.509	**0.001 ****	5.288	**0.001 ****	4.925
Education	**ePRSCH**			0.002	0.413	0.001	0.103	0.000	-0.006
Sociocult.	**sEAPd**					0.402	0.951	0.536	1.276
	sSSAd					-0.003	-0.008	-0.201	-0.628
Time	**t2**							0.159	0.625
	t3							**0.644 ****	2.344
		N	Adj. R-sq.	N	Adj. R-sq.	N	Adj. R-sq.	N	Adj. R-sq.
		142	0.38	133	0.40	133	0.39	133	0.41

Coefficient**: Significant at 2% Level or Above
Coefficient*: Significant at 5% Level or Above
Coefficient: Significant at 10% Level or Above

TABLE 2. CROSS-SECTION RESULTS ON FDI FITNESS (Corruption)

		I		II		III		IV	
	Variable	**Coefficient**	**t-Statistic**	**Coefficient**	**t-Statistic**	**Coefficient**	**t-Statistic**	**Coefficient**	**t-Statistic**
	C	-0.898581	-2.10521	-1.007294	-1.849793	-0.934403	-1.56519	-0.922355	-1.563722
Govern.	**gECOPi**	**0.789 ****	3.052	**0.973 ****	3.624	**0.827 ****	2.789	**0.537**	1.686
	gCORRi	**0.171**	1.926	**0.251 ****	2.767	**0.258 ****	2.724	**0.236 ****	2.519
Markets	**mGDPCP**	**0.000 ****	-3.203	**-0.001 ****	-4.135	**-0.001 ****	-4.086	**-0.001 ****	-3.740
	mPOPUR	**0.017 ****	2.488	**0.019 ****	2.459	**0.021 ****	2.518	**0.018 ***	2.185
	mDENRU	**0.000 ****	4.204	**0.000 ****	2.887	**0.000 ***	2.200	0.000	1.548
	mTRADE	**0.021 ****	4.068	**0.019 ****	3.751	**0.018 ****	3.573	**0.018 ****	3.604
	mTXREV	**-0.066 ****	-3.284	**-0.080 ****	-4.061	**-0.073 ****	-3.496	**-0.064 ****	-3.066
	mCRED	**0.007 ***	1.969	**0.008 ****	2.540	**0.007 ***	2.008	0.006	1.621
	mENER	**0.001 ****	4.883	**0.001 ****	5.961	**0.001 ****	5.745	**0.001 ****	5.317
Education	**ePRSCH**			0.003	0.496	0.001	0.091	0.000	-0.049
Sociocult.	**sEAPd**					0.511	1.220	0.634	1.523
	sSSAd					-0.021	-0.069	-0.208	-0.654
Time	**t2**							0.255	1.019
	t3							**0.632 ***	2.304
		N	Adj. R-sq.	N	Adj. R-sq.	N	Adj. R-sq.	N	Adj. R-sq.
		142	0.37	133	0.40	133	0.40	133	0.42

Coefficient**: Significant at 2% Level or Above
Coefficient*: Significant at 5% Level or Above
Coefficient: Significant at 10% Level or Above

OVERALL MARKET FITNESS

Overall market fitness was measured by GDP per capita and population, indicating degree of economic development and market size.

- **Gross Domestic Product at Market Prices (US$) per Capita**

GDP per capita is significantly negative, implying that FDI is negatively correlated with GDP. The finding suggests that foreign direct investment tolerates a low degree of economic development. It also concurs with data showing that FDI takes place even in very low-income economies while portfolio investment requires a higher level of economic development, specifically, financial intermediation.[37] The finding validates this study's conjecture that FDI can serve as a stepping stone for developing countries on their way to become emerging economies and then emerging markets.

- **Total Population**

The total population variable has a positive sign but is significant only in the first regression (see Table 3. Cross-Section Results on FDI Fitness [Rule of Law] with Total Population). This result indicates a very weak positive correlation between total population size and foreign direct investment, implying that a large size market has only a slightly positive effect on FDI inflows. The finding refutes that market size has an overwhelming impact on FDI as postulated by some theories, but it does not negate the importance of market size for FDI oriented to the market of the host country or host region.[38]

- **Urban Population (Percent of Total Population)**

Urban population as a percentage of total population was selected because of agglomeration effects. Owing to an urban concentration of institutions, the positive effects of scale are expected to outweigh negative congestion effects. At the same time, urban areas tend to be more exposed to international visitors, attitudes, and business practices. The results confirm the expectations and show a robust, positive correlation between FDI and urbanization. In the eyes of foreign investors, negative congestion effects such as pollution and overcrowding are outweighed by positive agglomeration effects such as increased institutional density expressed in concentration of human capital and labor and al and financial institutions. Moreover, FDI tends to concentrate in a nation's capital, particularly in countries with poor infrastructure. Such concentration is necessary to ensure contact with government officials, especially where policy implementation tends to be uneven. Furthermore, a high degree of urbanization does not necessarily translate into a sprawling megalopolis, it can also mean that many towns and cities within a country are growing to become poles for institutional and economic development, indicating relatively evenly developed institutional infrastructure.

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[37] World Bank, *Private Capital Flows to Developing Countries: The Road to Financial Integration* (New York: Oxford University Press, First Printing April 1997).

[38] The total population variable would have to be complemented by one of the FDI Fitness theory's ideal variables, such as membership in an economic union, to capture regional market effects. FDI in Hungary and the Czech Republic, for example, benefits from regional proximity to the Central and Western European export market, and from low non-agricultural import duties. Ireland has attracted many transnational corporations from the United States and Asia that sell their products within the European Community. FDI flowing into Mexico can take advantage of the North American Free Trade Agreement facilitating exports into the U.S. and Canadian markets. I thank Joel Bergsman for our discussions on the relevance of market size to foreign direct investment, August-September 1997.

TABLE 3. CROSS-SECTION RESULTS ON FDI FITNESS (Rule of Law) with Total Population

		I		II		III		IV	
	Variable	**Coefficient**	**t-Statistic**	**Coefficient**	**t-Statistic**	**Coefficient**	**t-Statistic**	**Coefficient**	**t-Statistic**
	C	-1.207	-2.799	-0.971	-1.814	-1.001	-1.647	-0.932	-1.547
Govern.	**gECOPi**	**0.768 ****	3.037	**0.978 ****	3.653	**0.907 ****	3.070	**0.605 ***	1.872
	gLAWi	**0.195 ***	2.034	**0.219 ***	2.235	**0.206 ***	1.980	**0.209 ***	2.000
Markets	**mGDPCP**	**0.000 ****	-3.312	**-0.001 ****	-3.828	**-0.001 ****	-3.774	**-0.001 ****	-3.544
	mPOP	**0.000 ***	2.155	0.000	1.552	0.000	1.465	0.000	0.985
	mPOPUR	**0.020 ****	2.788	**0.022 ****	2.684	**0.024 ****	2.676	**0.020 ***	2.204
	mDENRU	**0.000 ****	3.992	**0.000 ****	2.732	**0.000 ***	2.296	0.000	1.614
	mTRADE	**0.023 ****	4.457	**0.021 ****	3.885	**0.020 ****	3.712	**0.019 ****	3.552
	mTXREV	**-0.061 ****	-3.101	**-0.072 ****	-3.623	**-0.068 ****	-3.259	**-0.061 ****	-2.901
	mCRED	**0.006**	1.790	**0.008 ****	2.343	**0.008 ***	2.106	**0.007 ***	1.827
	mENER	**0.001 ****	4.504	**0.001 ****	5.226	**0.001 ****	5.099	**0.001 ****	4.808
Education	**ePRSCH**			0.000	-0.012	-0.001	-0.180	-0.001	-0.199
Sociocult.	**sEAPd**					0.343	0.812	0.485	1.146
	sSSAd					0.100	0.313	-0.115	-0.348
Time	**t2**							0.168	0.660
	t3							**0.595 ***	2.131
		N	Adj. R-sq.	N	Adj. R-sq.	N	Adj. R-sq.	N	Adj. R-sq.
		142	0.40	133	0.41	133	0.40	133	0.41

Coefficient**: Significant at 2% Level or Above
Coefficient*: Significant at 5% Level or Above
Coefficient: Significant at 10% Level or Above

- **Rural Population Density (People per Square Kilometer)**

Rural population density is expected to indicate rural infrastructure development and thus to carry a positive sign. The econometric results show that rural population density is indeed positively correlated with foreign direct investment.

GOODS AND SERVICES MARKET FITNESS

- **Trade (Percent of GDP)**

All specifications show a positive, robust correlation between foreign trade volume and foreign direct investment.[39] In other words, foreign direct investors prefer free trade to trade barriers, reflecting their desire for the fast and efficient import of inputs and export of outputs. The high correlation between trade and foreign direct investment could lead to a rethinking of the notion that FDI takes advantage of protective trade barriers, that is, foreigners taking advantage of domestic import substitution schemes. It may indicate increasing global integration with a shift from FDI oriented toward the domestic market in the 1960s to FDI oriented toward export markets in the 1990s. It may also explain why earlier FDI theories ascribe more significance to market size than was found in this econometric analysis for the late 1970s to mid-1990s.

- **Tax Revenue (Percent of GDP)**

As expected, high tax revenues, which in developing countries usually imply high trade taxes, are negatively, robustly correlated with FDI inflows. The strong negative impact of high taxes on FDI can be explained by the fact that taxes in any form constitute a burden on business. The negative impact of trade tariffs is particularly notable because due to administrative constraints, developing countries reap most of their total tax revenue from trade tariffs and this strongly affects FDI operations dependent on imports and exports.[40]

CAPITAL MARKET FITNESS

- **Domestic Credit Provided by Banking Sector (Percent of GDP)**

As expected, credit provision is positively correlated with FDI. This finding corroborates the results from interviews with foreign investors, who often find host-country credit and banking facilities inadequate and thus tend to rely on credit from their home countries.[41] Nonetheless, given that some firms do not enjoy

[39] This result is corroborated by other studies finding a positive, robust correlation between the investment share of GDP and the ratio of trade to GDP, such as Ross Levine and David Renelt, "A Sensitivity Analysis of Cross-Country Growth Regressions," *American Economic Review* 82:4 (September 1992): 942, 953-954, 959.

[40] Saskia K.S. Wilhelms, "Comprehensive Tax Reform in Developing Economies," (Medford, MA: Fletcher School of Law and Diplomacy, December 1996). Regarding variable selection, total tax revenue has been selected rather than import and export taxes to reflect the more comprehensive availability of the former.

[41] The domestic credit variable is not robustly significant in the logged and semi-logged forms. This may be

access to home-country credit for FDI operations, the provision of credit in the host country can be deemed as furthering FDI.

MARKET LINKAGE FITNESS

- **Commercial Energy Use (Kg of Oil Equivalent per Capita)**

As expected, commercial energy use is positively, robustly correlated with FDI. After investor interviews consistently revealed that dependable energy and telecommunication availability was the major infrastructure concern, commercial energy use was selected as a proxy for energy supply. The number of telephone mainlines per 1,000 people, a second variable of choice, was available only for the last cross-section and therefore had to be left out. A more widely available variable–road kilometers over arable land–showed fragile results. This finding corroborates investor interviews indicating that poor road infrastructure is regarded as a nuisance but not a significant deterrent to FDI. FDI tends to concentrate in urban areas because of better institutional access and energy availability even when a country has a sound road infrastructure.[42] Thus, the energy variable seems well suited as a proxy for infrastructure development.

C. THIRD EXPLANATORY CONCEPT: EDUCATIONAL FITNESS

It was expected that high educational fitness increases FDI inflows. The explanatory concept educational fitness was measured by primary school enrollment.

- **Primary School Enrollment (Percent of Gross Enrollment)**

As indicated in the section on variable selection and definition, primary school enrollment is a particularly unsatisfactory variable compared with variables on educational attainment. Although it shows the expected positive coefficient, it is not significant (see regressions number II, III, and IV). A variable for educational attainment–the illiteracy rate–is significant when substituted for primary school enrollment. This variable, however, reduces the sample size to one-third, because it is available only for the last cross-section.

As laid out in the variable definitions, urbanization and rural population density are interrelated with human capital and educational fitness. Taking these two variables as proxies for broad education and for exposure to international ways of thinking and conducting business–instead of the very narrow proxy primary school enrollment–would confirm the hypothesis that education is positively correlated with foreign direct investment. On the supply side, urbanization generates a larger and more educated labor pool. On the demand side, urban consumers are more likely to be receptive to a variety of products, including those above the pure subsistence level. Urban citizens may also be more flexible and receptive to acquiring new skills should their services be required for FDI operations.

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explained by the fact that foreign investors find it possible to bridge a dearth of domestic credit from external sources. Saskia K.S. Wilhelms, Interviews and Field Research (Ghana and Ivory Coast: May-September 1995).

[42] Saskia K.S. Wilhelms, Interviews and Field Research (Ghana and Ivory Coast: May–September 1995). I thank Selina Pandolfi for so readily supplying me with the road variable, based on five-year averages from a World Bank source for the following periods: 1979-1983, 1984-1988, and 1989-1993.

D. FOURTH EXPLANATORY CONCEPT: SOCIOCULTURAL FITNESS

The explanatory concept sociocultural fitness was measured by regional dummy variables.

- **Regional Dummy Variables**

Regional dummy variables were assigned to East Asia and the Pacific, Europe and Central Asia, Latin America and the Caribbean, Middle East and North Africa, South Asia, and Sub-Saharan Africa in accordance with the World Bank classification. As can be seen in regressions number III and IV, the regional dummy variables have the expected signs, with the variable for East Asia and the Pacific positive and that for Sub-Saharan Africa negative. However, given that the regional/sociocultural dummy variables are insignificant, it can be reasonable to assume that the other, non-dummy variables, already explain a large amount of FDI inflows.

This result means that culture or region do not predetermine the amount of FDI inflows but rather that each government must decree and implement policies strengthening the institutions that are positively associated with FDI. This finding is encouraging for all countries seeking to increase FDI inflows in that every nation can chose its own path regarding openness to foreign investment.

- **Time Dummy Variables**

Time dummy variables were introduced to control for external shocks and variations that occur over time and correspond to the three time periods. As depicted in regression number IV, the significance of the time dummy variables rises in chronological order, reflecting increases in FDI during the three time periods under observation. The time dummy variable for the third period is significant and positively correlated with FDI.

The result, supported by empirical evidence from other studies, indicates that private capital is increasingly seeking FDI opportunities in mid- and low-income economies. In fact, recent research indicates that the global increase in private capital flows is caused not only by short-term cyclical factors, but also by longer-term fundamentals. Cyclical variables, such as international and domestic interest rate changes, generally relate more to portfolio than to foreign direct investment. In recent years, however, long-term factors have increasingly influenced foreign direct and even portfolio investment decisions. With the FDI Fitness model controlling for host-country factors, the significant FDI increase in period three can be explained by source-country variables such as rising production costs and competition versus declining transport and communications costs that facilitate the exchange of goods, services, people, and information among countries.[43]

[43] The World Bank report on private capital flows terms these long-term factors “structural”. The adjective “structural” is used in the World Bank report for a shorter time horizon–including policies and implementation–than in this study, where it applies to intransigent factors that can be changed through policies only over the extremely long run, for example total population. World Bank, *Private Capital Flows to Developing Countries: The Road to Financial Integration* (New York: Oxford University Press, First Printing April 1997), particularly 80-103.

2. COMPENDIUM OF FINDINGS

A. SUMMARY OF REGRESSION RESULTS

The Institutional FDI Fitness model has been developed on the grounds that institutional factors play a more central role than allowed for in conventional FDI theories. The central hypothesis is that FDI inflows are influenced much less by intransigent generic variables than by institutions, their policies and implementation. Hence, each country has a fair–and more equal than commonly assumed–opportunity to develop the institutions necessary to attract FDI. If a country elects to do so, however, it needs some help in determining exactly what institutions further FDI inflows. For that purpose, this study has been undertaken.

The econometric results fully corroborate the FDI Fitness model and allow concrete policy prioritization. A central issue is to what extent FDI inflows are predetermined by a country's inherent fundamentals such as population size or regional location. Are countries with large populations more prone to receiving FDI? Does sub-Saharan Africa have an intrinsic characteristic that dooms it to low FDI inflows? Is there something about East Asia that predestines it to attracting high levels of FDI?

This has been found not to be the case. As predicted by the FDI Fitness theory, generic variables reflecting conditions that are intransigent over long periods, namely total population, show little significance throughout the regressions. Insignificant are also the regional dummy variables. Variables more explicitly related to institutional development, namely urbanization and rural population density, are positively, robustly correlated with FDI. This means that even though initial, country-inherent conditions may play a certain role, they definitely can be overcome with human effort, namely sound policies and their thorough implementation.

Policy-making and implementation exert a very strong influence on FDI: economic policies allowing free investment and trade are key determinants of FDI inflows. Economic openness in the form of free markets is vital. This means little directive regulation, particularly no controls on currency exchange or on imports and exports. Trade volume shows a positive, robust correlation with FDI. Very robust is also the finding that high taxes–in developing countries chiefly trade taxes–deter FDI. These results demonstrate that a country can reap substantial (FDI) rewards by choosing a free trade and investment regime. The positive robust correlation with energy use shows an additional opportunity for governments to increase FDI inflows, namely through infrastructure development.

Variables related to governing the economic, legal, and administrative spheres prove to have very high explanatory power. Governmental fitness, specifically of the judiciary and executive–rule of law and incidence of corruption–consistently shows its impact on FDI inflows. This stresses the importance of impartiality and transparency in the legal framework and in policy implementation. Governmental fitness, strong institutions making and implementing sound policies and laws, is key to increasing FDI inflows.

What is striking about these results is the common denominator of the most influential FDI Fitness factors: government and market variables are the most significant determinants of FDI inflows. Governmental fitness is reflected in economic openness and in legal and administrative equity and transparency. Economic openness minimizes trade tariffs, currency exchange controls, and other state intervention in markets. Legal and administrative equity and transparency implies a fair and stable rule of law and low corruption. Market fitness is represented by high trade volume and low taxes, and also by urbanization, high credit provision,

and large energy supply. What is remarkable is that nearly all of these determinants reduce incentives for discretionary behavior and rent-seeking. This gives another dimension to the adage that investors seek stability and transparency, since they prefer clear-cut regulations and consistent implementation even at the cost of losing individual privileges gained through special deals.[44] This preference can be attributed to the reduced business efficiency caused by an insecure environment that requires extensive bargaining and crisis management.

B. SUGGESTIONS FOR FURTHER RESEARCH

The econometric analysis has fully corroborated the FDI Fitness hypothesis: institutions and their policies and implementation play central role in attracting FDI. By establishing the usefulness of the Institutional FDI Fitness model in predicting FDI inflows, this analysis should encourage further use of the Institutional FDI Fitness theory. Furthermore, over time, increased data and variable availability and reliability should enhance the explanatory power of the FDI Fitness model. Readers are referred to the methodology section for further information on variables ideally appropriate for the FDI Fitness model that could not be tested due to data scarcity.

The FDI Fitness theory and model continue and reinforce the integrative school tradition. The fact that governmental and market variables have the highest explanatory power regarding FDI inflows validates the finding by Schneider and Frey, who have asserted that a combination of political and economic variables works best in explaining the occurrence of foreign direct investment.[45] Educational and sociocultural factors may show even higher explanatory power if variables capture more of their largely diffused and long-run effects on FDI. For example, it is implied by the high significance and coefficient of the urbanization variable that the educational dimension, has more importance than indicated by the restrictive primary school enrollment proxy. Therefore, educational fitness ought to be tested with educational attainment variables once they are available for a wider cross-section.

In addition the negative correlation between FDI and GDP per capita should be tested further. Particularly useful for this purpose would be disaggregated FDI data showing market orientation and, ideally the input needs and industry category of FDI projects. These data, however, are available only for some source countries (mostly OECD) and some host countries–with categories often defined differently from country to

[44] This result and conclusion are reinforced by investor interviews and other studies. Saskia K.S. Wilhelms, Interviews and Field Research (Ghana and Ivory Coast: May-September 1995). Spar obtained the same finding in her case study on Intel's foreign direct investment in Costa Rica. Mexico, a close competitor to Costa Rica, eliminated itself in the selection process by offering specific exemptions for Intel from generally applicable laws and regulations that were perceived as overly restrictive by Intel and other investors. Intel interpreted this discretionary behavior as a weak rule of law that might in the long run involve complications necessitating renegotiations and bribing. Intel hence preferred the firm yet flexible stance of the Costa Rican government in listening to Intel's concerns and using some of them as the impetus in opening up the general investment framework to all investors, thus ensuring a level playing field for FDI supported by a stable rule of law, low corruption incentives, and openness to investment and trade. Debora L. Spar, "Attracting High Technology Investment: Intel's Costa Rica Plant" (Cambridge, MA: Harvard University Graduate School of Business Administration, July 1997).

[45] F. Schneider and B.S. Frey, "Economic and Political Determinants of Foreign Direct Investment," *World Development* 13 (1985): 161-175.

country.[46] Such disaggregated FDI data are also required for studies on the correlation between natural resources and FDI.

In addition, the relationship among GDP, FDI, and portfolio investment warrants further research. GDP might be negatively related to FDI because a country with higher GDP is economically and financially more developed, more likely to generate more domestic savings and investment, and to increasingly attracts portfolio investment. However, when the correlation between gross domestic savings and FDI was tested, it was found to be insignificant. Thus, it would be useful to determine what specific determinants facilitate increased portfolio investment and how FDI and portfolio investment levels relate to one another.

It can be concluded that a size of a population does not influence investment, even though it seems to be slightly positively related to FDI inflows. The significance of total population size fades with the addition of institutional variables. This further reinforces the FDI Fitness theory and its focus on institutions. In this context, the relationship among FDI, institutions, and population is well worth further research; specifically, the interaction among population size, urbanization, rural population density, GDP, investment, and poverty.[47] In regard to the finding that urbanization is positively correlated with FDI, it should be noted, that welfare effects on the local population are very important. While urbanization has negative congestion effects, poverty is predominantly a rural phenomenon identified with lack of access to economic, financial, political, and social service institutions.[48]
Additionally, it should be noted that a variable denoting telecommunications infrastructure can be expected to add further explanatory power to the regression [49] once complete data have been generated to test this variable.[50]

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[46] I thank especially Bob Lipsey from the National Bureau of Economic Research, and Ray Vernon and Louis T. Wells from Harvard University for their help in determining the availability of disaggregated FDI data.

[47] Urbanization abates poverty since it facilitates institutional access, and so does institutional–including infrastructural–development. Economic growth also furthers poverty alleviation. J. Dirck Stryker and Selina Pandolfi, *Impact of Outward-Looking, Market-Oriented Policy Reform on Economic Growth and Poverty* (Cambridge, MA: Associates for International Resources and Development, April 1997), 21, 23, 25. Given that economic growth is stimulated by investment, one may assume that investment alleviates poverty. Further research on this issue and wider welfare effects for citizens in FDI host-countries is desirable. Despite the breadth of existing literature on the topic, largely stimulated by the dependency school, this issue warrants further research. For this research, disaggregated FDI data are particularly vital, because host- country benefits depend specifically on the type of investment made.

[48] J. Dirck Stryker and Selina Pandolfi, *Impact of Outward-Looking, Market-Oriented Policy Reform on Economic Growth and Poverty* (Cambridge, MA: Associates for International Resources and Development, April 1997), iii-v.

[49] Telecommunication seems an important determinant of foreign direct investment, and could be proxied by telephone mainlines per 1,000 people. Telephones are the first and most vital means of communication potential investors encounter when they prospect a future FDI location. Many cases in which potential investors left a country without formalizing any FDI project plans have been reported. The potential investors were exasperated after trying in vain to reach people via telephone. Often, potential investors tried for several days to get through to government officials or potential business partners only to get a busy signal, having no answer, or, if finally reaching someone, finding the phone was answered by personnel unable to take a message because they communicated insufficiently in the official language and/or were illiterate. Saskia K.S. Wilhelms, Interviews and Field Research (Ghana and Ivory Coast: May-September 1995).

The remaining topic for further research is attaining maximum FDI with minimized cost, particularly analyzing the utility of tax structures, incentives, and free trade zones.[51]

VII. IMPLICATIONS OF FINDINGS

It may be argued that there are exceptions to the rule that Institutional Fitness determines FDI. Some countries have such strong preconditions in their favor that investors will come anyway, even in the face of hostile policies. With their large populations and abundance of raw materials China, India, and Nigeria may be such exceptions. Nonetheless, many investors are pulling out after enduring continued losses. Interestingly, many of the long-term problems arise from differences in business culture and work ethic,[52] thereby supporting the FDI Fitness hypothesis that sociocultural factors play an important role in the FDI process. Their often-diffused influence is felt only in the long run and is difficult to assess quantitatively. Complementing their inherent advantages of large market size and natural resource base with institutional fitness by instituting a more open investment framework, privileged countries such as India and China could greatly increase the amount, productivity, and project longevity of inward FDI.

Obviously, dependency strategists had reasons for proclaiming a third way independent of either the capitalist "first" world or the socialist "second" world. Why adopt the free market model just to please foreign investors? Will such a strategy not result in giving up precious local resources for the gain of foreigners? Will it not hurt local investors? Such concerns have led third-way champions such as India, China, and Nigeria to resist foreign influence, including foreign direct investment. But theoretical and empirical findings, including the findings in this study, have refuted the traditional dependency assumption that inflexible structural conditions predetermine inward FDI to developing countries ostensibly paralyzed by colonialism and neocolonialism. The examples of East Asian, and increasingly Latin America and the East European countries demonstrate what host countries stand to win directly and indirectly from foreign direct investment: increased tax revenue, less dependency on aid, stabilized budgets, employment, technology transfer, training and educational opportunities, integration into global markets, international competitiveness, stimulation of local industries, economic growth, and increased welfare.

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[50] In this context, one should test not only for the availability of technical communication infrastructure, but also for human communication infrastructure, specifically educational factors such as literacy, fluency in the official language, and flexibility in understanding different accents. UK and USA citizens in Ghana, and French citizens in the Ivory Coast, for example, reported communication difficulties, even though they spoke the respective official language as their mother tongue. This implies that investors and local citizens for whom the official language is a second language, may face even greater communication problems.

[51] For studying so-called footloose (comparatively mobile) industries, specifically in free trade zones, members of the Harvard Institute for International Development, Associates for International Resources and Development, Harvard Business School, and the Fletcher School of Law and Diplomacy have established a working group. Further information on this issue is available from the author of this study.

[52] Debora L. Spar, Discussion (Medford, MA: Fletcher School of Law and Diplomacy, September 26, 1997). Graham Bowley, "Siemens Hit by Indian Losses: Joint Ventures in China also Suffer from Persistent Start-Up Problems," *Financial Times,* 21 July 1997, 17.

As a result, India has made a conscious decision to improve its FDI climate. China battles each year anew for renewal of its most-favored-nation status by the U.S. Congress. In the meantime, Nigeria's political, economic, legal, and administrative instability has repelled even many of the resource-based foreign direct investment projects. These trends clearly highlight two facts. As for demand side, even though fears of foreign investment and domination persist, more and more countries see the necessity for investment and trade and take steps–albeit hesitatingly–to increase FDI. As for the supply side, foreign direct investment is less dependent on intransigent conditions and possibly less correlated with natural resource availability than is often assumed. It is also clear that FDI overall is deterred by trade tariffs, even though individual FDI projects could benefit once the investment has been made. This refutes the notion that FDI takes advantage of tariffs and closed markets. Evidence suggests that tax reform is most efficient and effective when taxes become more broad-based, with more uniform rates, and fewer exemptions. This approach would speak for simplifying taxes, including a reduction in both trade taxes and also of exemptions.[53]

The fact that FDI depends much less on initial circumstances than on what policy-makers and citizens make of them empowers host countries. Their fate is not subjected to their pre-existing conditions or the whims of foreign investors. Instead, it is up to every nation to decide how much FDI it wants and what measures it will take to accommodate it. This study provides a source of information as to what policies further FDI. The result is that foreign direct investors prefer liberal investment and trade policies, low taxation, a transparent judiciary and executive, and good infrastructure. They excuse almost any type of country-inherent preconditions as long as they are offered opportunities to profit from an investment without overt hassle. Contrary to the perception of the dependency school, this is not a zero-sum game, but a potential win-win situation in which all parties can gain, just as the integrative school predicts.

Domestic investors have a wish-list very similar to that of foreign investors, they, too, want to import inputs and export outputs, exchange currency, pay low taxes, rely on even policy implementation, trust the legal system, enjoy good infrastructure and conduct their business instead of filing forms or sweet-talking–or bribing–government officials. This means that the key policies to further both foreign and domestic investment are in many respects identical. Citizens other than domestic investors also stand to gain from investment, due to knowledge and technology transfers as well as employment, income, and wealth effects.

Politicians are free to utilize the results of this study for decision and policy making. This study presents decisive evidence. The results demonstrate the importance of the human factor in attracting foreign direct investment. FDI is not predetermined by intransigent factors such as regional location and socioculture, population and market size, or gross domestic product. This means that any country can seize the opportunity to increase its FDI.

[53] Saskia K.S. Wilhelms, "Comprehensive Tax Reform in Developing Economies," (Medford, MA: Fletcher School of Law and Diplomacy, December 1996).

VIII. CONCLUSION

The Institutional FDI Fitness theory is the logical continuation and extension of integrative FDI theory. It postulates that it is institutions, their policies and implementation, rather than generic inflexible variables that give a country a competitive advantage in the global FDI market.

The testing of the Institutional FDI Fitness model found that governmental and market fitness play the central role in attracting FDI. Economic openness to investment and trade, law and order, and a corruption-free environment are the governmental fitness factors. Market fitness is reflected in a balanced tax system, high trade volume, strong financial intermediation, and sound urban and rural infrastructure. Urbanization also contributes positively to FDI inflows, probably through institutional concentration and residential sophistication. More generic variables such as location, socioculture, and total population are not or only lowly correlated with FDI inflows.

Given that market fitness is largely determined by economic policies, governmental fitness proves, in a certain sense, to be the FDI Fitness subconcept with most explanatory power. The econometric results strongly suggest not only that economic policies and their implementation are instrumental in attracting FDI, and that these policies should be more open. In other words, the fewer obstacles foreign direct investors encounter, the more they will invest. The more the government does to provide an economic, legal, and infrastructure framework conducive to FDI, the more FDI it will obtain. This is not surprising at all: most people go where they feel most welcome and/or where they can succeed in their endeavors. What is remarkable is what makes foreign direct investors feel welcome: it is policies and their implementation, rather than intransigent conditions. The fact that adjustable policy variables carry more weight than intransigent variables corroborates the Institutional FDI Fitness theory. The result is very encouraging for policy-makers seeking to increase FDI inflows.

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