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**ODA AND INVESTMENT FOR DEVELOPMENT:
WHAT GUIDANCE CAN BE DRAWN
FROM INVESTMENT CLIMATE SCOREBOARDS?**

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This paper still represents work in progress and should not be quoted.

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ODA AND INVESTMENT FOR DEVELOPMENT: WHAT GUIDANCE CAN BE DRAWN FROM INVESTMENT CLIMATE SCOREBOARDS?

The present paper is part of the joint project between the Investment Committee and DAC on Official Development Assistance and Investment for Development. It was prepared in response to discussions at the OECD Investment Committee-DAC Workshop on Synergies between ODA and Foreign Direct Investment on 11 March 2004, during which participants opined that donor agencies lack information about the quality of the investment climate in developing countries and the likely repercussions for direct investment.

The purpose of the present paper is threefold. First, it provides an overview of a variety of scoreboards for the investment climate that have been established by a number of actors, including the World Bank, UNCTAD and several private “think tanks”. Second, it documents their similarities and discrepancies in assessing the investment climates of developing, emerging and transition economies (henceforth jointly referred to as “developing countries”). Third, it tests their predictive power regarding countries’ ability to attract foreign direct investment (FDI), and it proposes ways donors could use elements of the scoreboards to better understand countries’ attractiveness to direct investment. At the same time, a note of caution is in order. Investment scoreboards can provide only a piecemeal indication of investment climates, and the quality of direct investment statistics in many countries is poor.

The paper must be considered as work in progress, and its empirical analysis in some cases represents a “first shot” at linking given scoreboards with countries’ concrete achievements in attracting FDI. While a large body of academic literature, especially in the 1980s and early 1990s, has aimed to identify factors that influence FDI flows, this work mostly predates the existing investment scoreboards. A recent exercise by the Economic Policy Committee to establish the impact of regulation on trade and investment did not cover non-OECD economies. Once a proper linkage between investment climate scoreboards and inward direct investment is established, donor agencies and investment promoters will be better equipped not only to identify priority areas for action, but also to benchmark improvements to the investment climate and forecast their likely impact on FDI.

I. Alternative scoreboards

It should first be noted that few scoreboards aim specifically at describing conditions for investment – let alone FDI. Broadly-based indicators mostly have as their goal to assess the business climate in a number of countries as applies to the profitability and growth of enterprises. However, since (expected) profitability is in practice the main driving force behind investment, the terms “investment” and “business climate” scoreboard are used interchangeably in the remainder of the report.

A couple of important distinctions need to be drawn between main types of indicators. First, a relatively limited number of scoreboards attempt to quantify difference in the business climate across all the factors that are thought to affect investment. Most published indicators aim at comparing a few specific aspects of the business climate across countries. The present study takes stock of the main *overall investment scoreboards* and presents some representative examples of *specific indicators*.

Second, there are important methodological differences between scoreboards. The main dividing line separates indicators that are based on *quantifiable measures* from those that are based on an *assessment* by businesses and other observers. Most of the early scoreboards fell in the latter category, but more recently (e.g. UNCTAD “Investment Compass” and World Bank “Doing Business”, both of which discussed below) the pendulum has swung toward quantifiable indicators.

Within the group of quantifiable measures, a second distinction is between scoreboards that rely on macroeconomic data (e.g. availability of raw materials, level of taxation) and those that are based on microeconomic indicators (e.g. licensing requirements, cost of starting a business). The assessment-based indicators also fall into two main categories, namely those that are based on businesses that are active in the surveyed countries, and those that rely on the assessment of outside analysts. The former indicators are at risk of being biased (as they do not include businesses that have chosen to stay away) whereas the latter are arguably the ones that involve the strongest element of judgement.

a) Overall investment scoreboards

Most of the investment scoreboards sampled in this section include at least a limited number of OECD and other developed economies. However, it has been chosen to include in the empirical documentation only countries that are classified by the United Nations as being “developing”. Moreover, East European transition economies that are members of OECD have been excluded. An overview of the main characteristics of the individual scoreboards is provided in Table 1.

1) Investment Compass

UNCTAD’s Investment Compass is one of the scoreboards that focus most strongly on countries’ attractiveness to international direct investment *per se*. It provides an FDI benchmarking tool by analysing key macroeconomic indicators thought to influence the investment climate in individual countries. Most of the macroeconomic indicators are readily available from international data sources, but some have been compiled by means of questionnaires (e.g. present value tax rates based on hypothetical profit scenarios). The macro-data is in some cases supplemented by the results of attitude surveys (e.g. World Bank Governance Indicators). The main focus of the Investment Compass is on developing countries as conventionally defined (of which presently 50 are included in the sample) rather than emerging and transition economies, although a few rather highly developed countries are also included (e.g. Korea).

The Compass aims to assess the quality of the investment climate according six major areas of concern to investors. All major areas can be influenced by policy makers, some of which immediately and others by means of long-term structural policies. Most of the major areas can be understood as the sum of a couple of sub-components (e.g. operating costs depend on two set of indicators for “labour” and “other” costs). The main areas are the following:

- *Resource assets*. “Resources “are defined very broadly to include not only availability of raw materials (production of minerals and agricultural products; energy reserves), but also the quality of human capital (school and university enrolment; literacy) and the size of local markets (population size, income per capita).
- *Infrastructure*. This summarises to classes of indicators, namely quality of traditional infrastructure (road networks, air and rail freight, electricity and water) and the access to ICT (internet and mobile and fixed-line telephony).
- *Operating costs*. Operating costs are split between labour (monthly wages for various categories of staff) and other costs (telecom and electricity charges; office costs).

- *Economic performance and governance.* This very encompassing indicator attempts to quantify on the one hand macroeconomic performance (unemployment rates; government and current account balances; inflation and growth), and on the other public governance (credit ratings; the human development index; indicators of regulatory quality).
- *Taxation.* The evaluation of fiscal regimes rests on two pillars namely the level of direct tax on business (in all cases present value taxation, implying that tax incentives for investment are counted as a negative tax), and indirect taxation of selected products and services.
- *Regulatory framework.* Three aspects of the regulatory framework for FDI are addressed, namely restrictions on entry (openness of main sectors to FDI; land ownership; standards of treatment); restrictions on operations (foreign trade and exchange rules; labour market regulations; performance requirements); and protection of investment and restrictions on exit (double taxation and investment treaties; expropriation rules; disputes settlement).

Each of the six areas are backed by a number of empirical “key indicators” (more than sixty in all), many of which hinted at in the above list. Each of the key indicators is ranked across countries. On the basis of the ranking, the Investment Compass assigns normalised scores between 1 and 100, with 100 representing the highest competitive level and 1 the least competitive level. This methodology allows for a pair-wise comparison of countries according to their relative performance in all of the main area. One example is shown in Figure 1.

Figure 1:

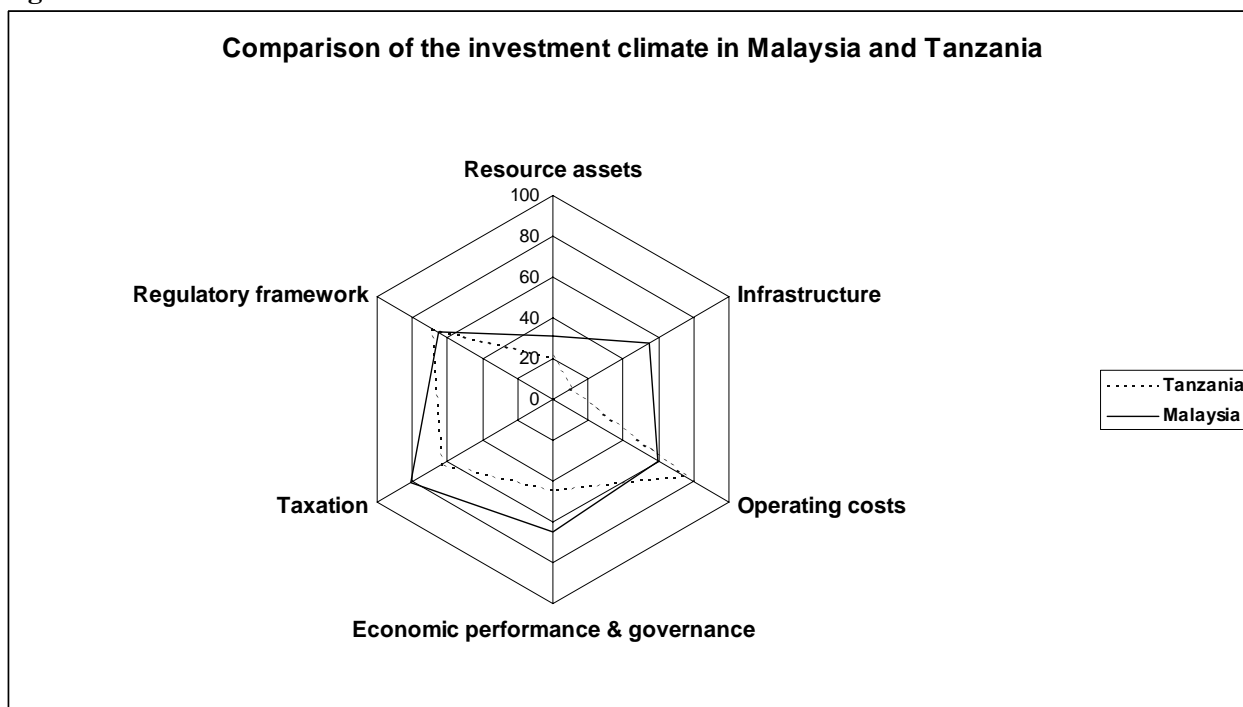


Table 1. Overview of the main characteristics of investment scoreboards

	Author	Country coverage	Topical coverage	Source of information	Aggregation (I]Total, [S]ub-indices, [N]one)	Latest survey
Investment Compass	UNCTAD	52 predominantly poorer countries in Africa, Asia and Latin America.	Regulatory framework, public governance, human capital, raw materials, infrastructure, operating costs, market size, macroeconomic performance.	Macro- and microeconomic data supplemented by existing surveys.	S	2004
World Business Environment Survey	World Bank	80 predominantly developing and transition countries.	Public services, public policy, legal system, corruption, regulation, competition, financial services.	Survey of national enterprises.	N	1999-2000
Business Environment and Enterprise Performance Survey	World Bank and EBRD	27 transition countries.	Business regulation, competition and concentration, corruption, influence and lobbying, infrastructure, labour market, rule of law, financial system.	Survey of national enterprises.	N	2002
Doing Business	World Bank	133 countries from around the world.	Costs and procedures when: starting a business, hiring and firing, seeking credit, enforcing contracts, closing a business.	Microeconomic indicators and regulatory information.	N	2003
Growth Competitiveness Index	World Economic Forum	102 countries from around the world.	Macroeconomic environment, corruption, enforcement of laws and contracts, innovation, technology transfers, uptake of ICT.	Mixture of macroeconomic data and a survey of national enterprises.	T	2003
Index of Economic Freedom	Heritage Foundation; Wall Street Journal	161 countries from around the world.	Government involvement, trade and monetary policy, banking and finance, capital restrictions, wages and prices, property rights, regulation, informal economy.	Assessment of mostly regulatory information	T	2004
FDI Confidence Index	A.T. Kearney	64 countries among the world's foremost FDI recipients.	Company investment intentions.	Survey of foreign investors.	T	2003

The ten top scorers, according to the Investment Compass, in the six major areas of interest to investors are listed in Table 2. The table illustrates a major strength of the Investment Compass, as already indicated, a broad range of indicators, in which point it differs from many of the scoreboards reviewed later in this paper. When scoreboards focus on certain aspects of countries (typically, regulatory issues and the quality of governance) their various components tend to differ little for a given economy, since a country that performs strongly in one respect is likely also to do well in other broadly similar areas. The Investment Compass, on the other hand, has the breadth to recognise the strong regulatory frameworks and good infrastructure of countries like Singapore, Korea and Chile, while at the same time accounting for the fact that the low operating costs in sub-Saharan Africa and the resources of Iran and South Africa could attract investors as well¹.

Table 2. Ranking according to the Investment Compass (top-10 within each category)

Rank	Resource assets	Infrastructure	Operating costs	Economic performance & governance	Taxation	Regulatory framework
1	Brazil	Singapore	Malawi	Singapore	Sri Lanka	Singapore
2	India	U.A. Emirates	Algeria	Korea	Mauritius	Chile
3	Mexico	Korea	Ghana	Chile	Ghana	Korea
4	Iran	Malaysia	Zambia	Mauritius	Bolivia	Morocco
5	Chile	Chile	Nepal	Botswana	Egypt	Uganda
6	South Africa	Mauritius	Armenia	Thailand	Malaysia	Argentina
7	Korea	South Africa	Bangladesh	Malaysia	Ecuador	Gabon
8	Argentina	Brazil	Lesotho	U.A. Emirates	Botswana	Burkina Faso
9	Peru	Thailand	Thailand	Saudi Arabia	Colombia	Nigeria
10	Venezuela	Argentina	Bolivia	Morocco	Singapore	D.R. Congo

2) *World Business Environment Survey*

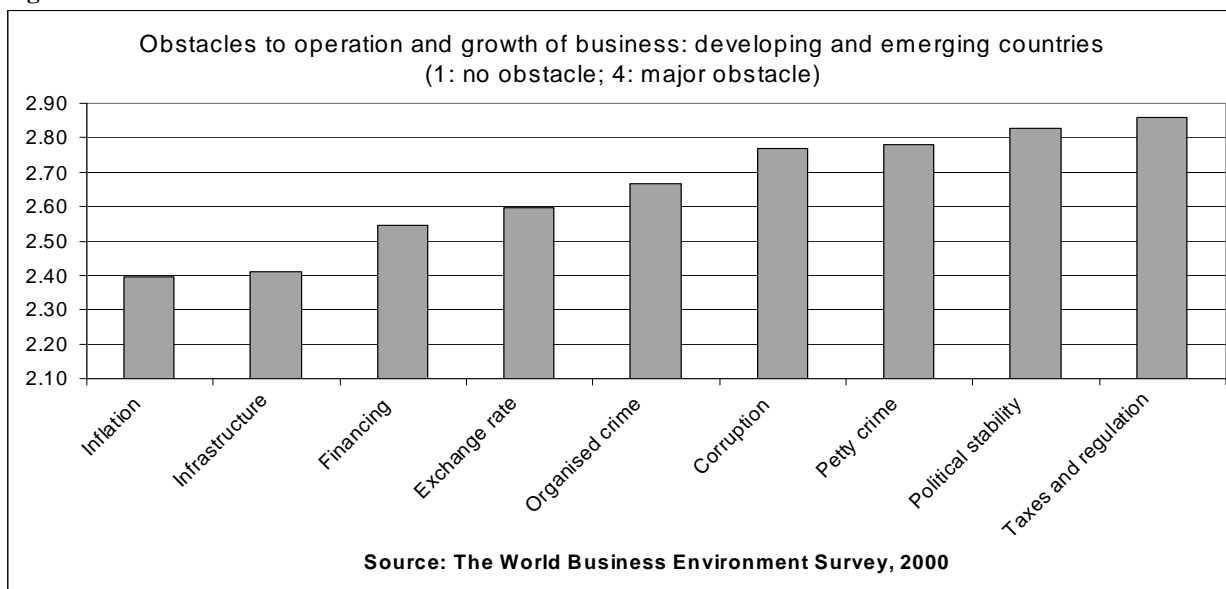
The World Bank's World Business Environment Survey (WBES) focuses on interactions between firms and the state, and in particular the impact regulatory practices and policy have on business. More than 10,000 firms in 80 countries have been examined on the basis of face-to-face interviews with firm managers and owners, with a minimum of 100 firms surveyed per country. In the sampling across all regions care was taken to guarantee adequate representation of firms by industry, size, ownership, export orientation, and location. For instance, while both small and medium enterprises as well as large firms were sampled, the first group constituted the overwhelming majority of the sample accounting for 80 per cent of the respondents. The WBES was first administered to enterprises in late 1999 and early 2000, and the intention is to repeat the exercise every five years.

The questionnaire responses consist largely, but not exclusively, of subjective assessments – for instance rating the important or quality of various indicators on scales from 1 to 4, or 1 to 6. At the most general level respondents are asked to assess the overall quality of their national business environment, including by assessing the obstacles to a good business climate from amongst a list of possible problem areas. The responses of an average company in the 2000 WBES survey (all countries included) are shown in Figure 2. It appears from more detailed questionnaire responses that, within this group, enterprises feel more constrained by taxes than by regulation per se, and more constrained by tax levels than by tax

¹ All the same, one may ask oneself whether the six main areas of Table 2 do not amount to an excessive aggregation. The area of resource assets, for instance, pools countries with large populations and mineral-rich economies, which are likely to appeal to vary different categories of investors. Similarly, the area of “economic performance and governance” also covers two very distinct issues.

administration. This applies even in countries where corporate and indirect statutory tax rates are at internationally low levels.

Figure 2:



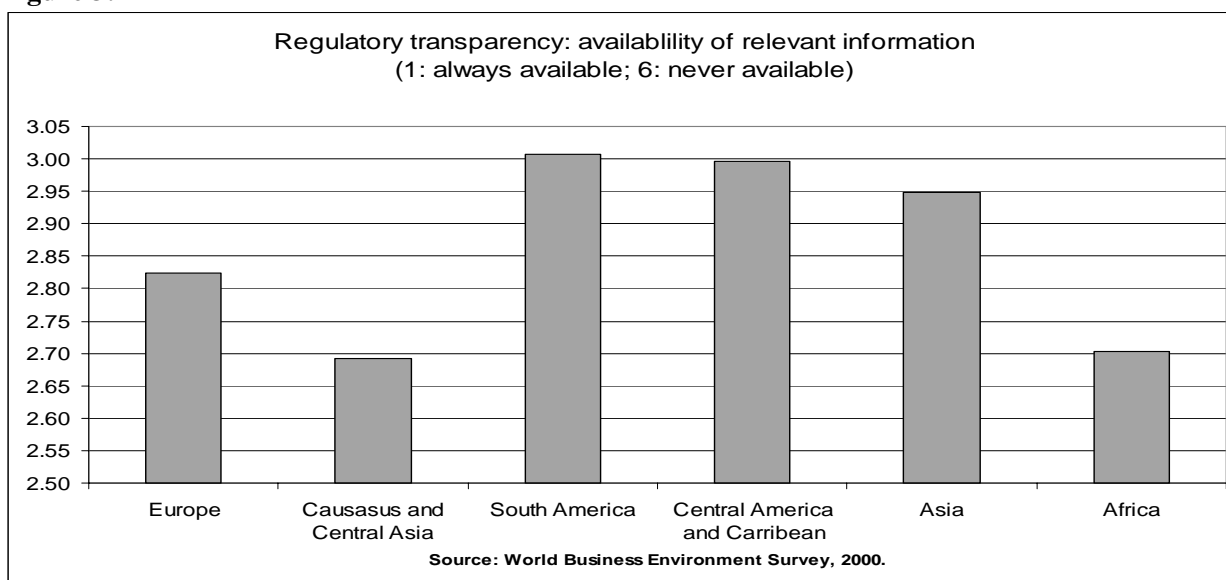
The more “specialised” questions focus largely on the quality of public governance, although financing constraints also receive special attention. WBES concentrates on seven main aspects of the investment climate, listed below:

- *Public services.* Respondents are invited to rate the quality of a long range of public services from customs, to telephony, to health care. A few supplementary questions are asked to establish the possible corporate burden of lacklustre public services.
- *Public policy.* Among the factor considered in this context are predictability, transparency and consistency of policies and regulation. The survey includes an assessment of the predictability of policies and regulations, including notification of change. The availability of laws and regulations and the consistency of their interpretation is also assessed.
- *Legal system.* Respondents are asked to evaluate different aspects of the national legal systems, and to express their degree of confidence in the upholding of contract and property rights.
- *Corruption.* The issue of bribery and related payments is addressed in some detail. Among other things respondents are asked to indicate how common it is to have to make “additional payments” to get things done, whether bribe-takers actually deliver, for what kinds of services extra payments are most common and what share of contract values are lost to bribery.
- *Regulation.* Companies are asked to assess the degree to which they are being held back by regulation such as licensing requirements, customs, labour market rules, currency regulation, environment, safety and taxation.
- *Competition.* Respondents are asked a number of questions about their competitors, including the degree to which the latter enjoy illicit advantages (e.g. taxation, dumping, regulatory forbearance or IPR violations) from regulators.

- *Financial services.* In the area of finance, constraints surveyed are high interest rates; lack of access to long term loans; collateral requirements; bank paperwork; inadequate credit info on clients; special connections; banks' lack of money to lend; as well as lack of access to specialised export finance, non-bank equity, leasing and foreign banks.

It is difficult to propose a “typical” example of the responses to a WBES question, because the questionnaire spans an unusually wide range of different types of questions (estimated costs, ranking of alternatives, rating of performance, frequency of occurrence...). However, Figure 3 which summarises the responses to a question about public policy, aggregated to the regional level, serves as a useful illustration.² The finding that Caucasus and Central Asia is the world’s most transparent region may surprise some. One tentative explanation is that enterprises when asked to rate the quality of certain parameters do so against a background of experiences from the recent past and from within the region, rather than to apply a global benchmark. This will particularly be the case when, as in the case of WBES, most respondents are small local operators. Another explanation may be adverse selection. Those companies that survive and persist in a given country can be assumed to be those that are the least bothered by shortcomings in the regulatory environment.

Figure 3:



3) *The Business Environment and Enterprise Performance Survey*

The Business Environment and Enterprise Performance Survey (BEEPS) is a joint product by the World Bank and the European Bank for Reconstruction and Development. It is methodologically close to the World Bank’s WBES, and there has been a recent approximation between the questions asked in the two surveys in order to enhance cross-comparability. More than 4000 firms in 22 transition countries were surveyed by BEEPS in 1999-2000. In 2002 a second round of the survey was undertaken including 6,500 firms in 27 transition countries. The sample includes both foreign-invested and purely local companies, whereby enterprises with a degree of foreign participation are clearly in the majority.

Apart from very detailed questions about the nature and performance of the responding enterprises (plus a general assessment of the business environment identical to Figure 3.1 above) BEEPS focuses on

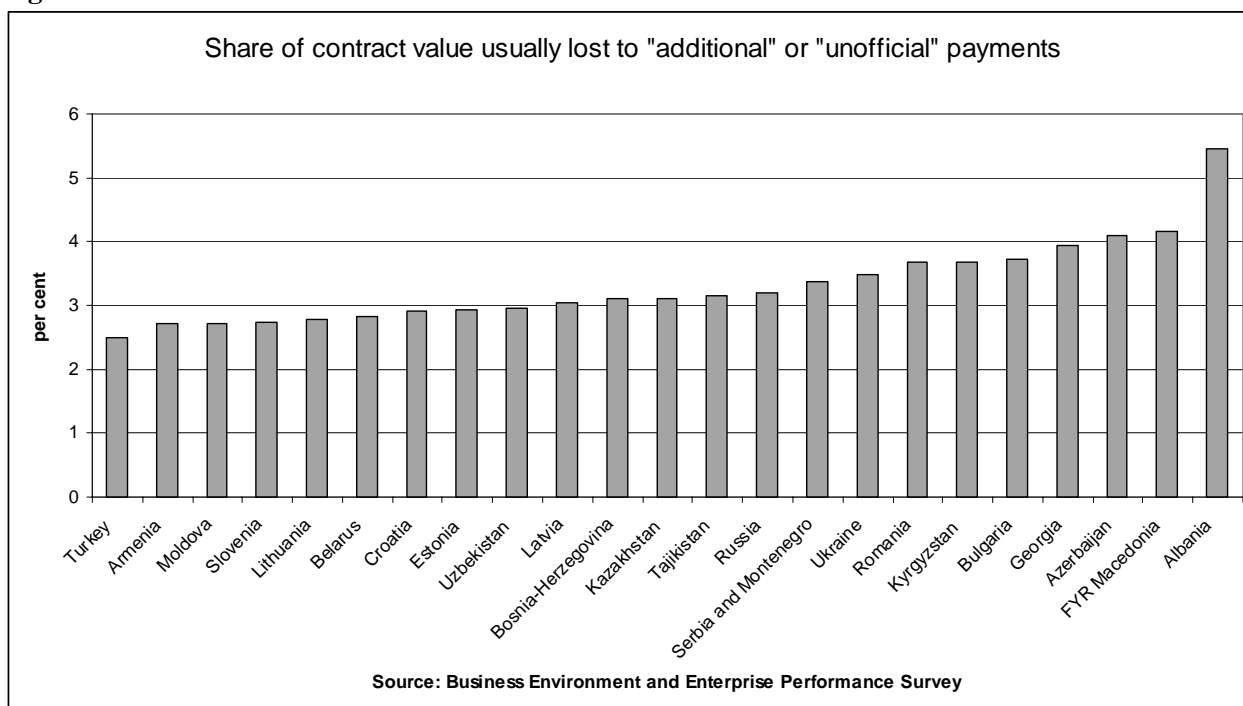
² It also illustrates a potential problem with the survey methodology: considering that the respondents have a scale from 1 to 6 at their disposal, the regional differences in Figure 3 are surprisingly limited.

eight main areas of importance to the business climate. The questions posed to enterprise managers vary from WBES-like ratings of the quality of public services and seriousness of obstacles to concrete information about average delays and costs of performing certain corporate tasks. No attempt is made to create composite indicators for any of the eight major areas. The eight areas are the following:

- *Business regulation.* Under the general heading of business regulation four (categories of) questions are asked, namely whether information on relevant rules is available, consistent and predictable; time and financial losses due to customs; the availability of official recourse; and the time spend on dealing with tax matters.
- *Competition and concentration.* Quantitative information is collected on the concentration in purchases of inputs and in sales, the number of competitors and market shares. Respondents are also asked to assess the relative importance of competitors, whether domestic or foreign.
- *Corruption and state capture.* Under the heading of corruption and state capture the survey asks some concrete questions regarding the size of irregular payments relative to sales and the degree of tax compliance. It also asks respondents to indicate more generally whether various kinds of corrupt practices prevail in their country of operations.
- *Influence and lobbying.* Respondents are asked to list the business associations of which they are members, describe their main areas of activity and assess their influence on government and other stakeholders.
- *Infrastructure.* Quantitative information is collected regarding the availability and reliability of electronic communication, power and water.
- *Labour market.* Companies provide assessments such as the average time needed to fill vacancies and workdays lost due to strikes, and more general information about the skill levels and job categories among their employees.
- *Rule of law.* Four sets of indicators are used to indicate the rule of law, namely quality of the courts (based largely on rating by respondents); the prevalence of relational contracting; security (based on the amounts spent on security); and contracts and property rights (based on ratings).
- *Financial system.* The quality of the financial system is assessed by means of a large number of, largely quantitative, responses. The areas covered include the prevailing accounting standards, the size of payment arrears, collateral requirements, interest rates and loan terms, the relative importance of sources of financing, subsidised credits and workings of the payments system.

One illustrative example of BEEPS's strategy of asking respondents, where possible, to provide empirical assessments of the obstacles they are facing is drawn from the questions about corruption and state capture. Enterprises are asked the following question: "When firms in your industry do business with the government, how much of the contract value would be typically paid in additional or unofficial payments/gifts to secure the contract?" The response of an average enterprise across the countries covered by the survey is found in Figure 4.

Figure 4:



4) *Doing Business*

The World Bank’s Doing Business database provides an assessment of the cost of doing business by taking into account specific regulations that enhance or constrain business investment, productivity and growth.³ In the database 133 economies are covered, including 22 high-income OECD economies (as “benchmarks”), 25 economies from Europe and Central Asia, 33 from Africa, 5 from South Asia, 21 from Latin America, 14 from the Middle East and North Africa and 13 from the East Asia and the Pacific region.

The aim of the Doing Business exercise is providing objective (as opposed to survey-based), quantifiable measures of business regulations and their enforcement. The methodology employed in data collection includes studies of existing laws and regulations in each economy, targeted interviews with regulators or private sector professionals specialising on each topic, and cooperative arrangements with other departments of the World Bank, other donor agencies, private consulting firms, as well as business and law associations. Where possible, extremely concrete questions are put to the expert participants, such as “how many procedures are involved in obtaining a given result?”, “how long does it take on average?” and “what are the total costs?” However, some indicators (the degree of labour market restrictiveness is a case in point) necessarily rely on more subjective assessments.

In January 2003, five topics were benchmarked, but the list is going to be expanded in coming years (according to the Doing Business website, the imminent additions are “licensing and inspections”, “registering property” and “protecting investors”):

3 The database constitutes a joint undertaking by the Private Sector Vice Presidency of the WBG in cooperation with the Lex Mundi Association of law firms, the International Bar Association, and Yale University’s International Institute for Corporate Governance.

- *Starting a business.* This segment of the database includes information on all the procedures necessary to register a firm as well as screening procedures by a set of overseeing government entities, tax- and labour related registration procedures, health and safety procedures, and environment-related procedures. The yardstick is an average small-medium sized company and firms examined in the survey include commercial or industrial firms with up to 50 employees and start-up capital of 10 times the economy's per capita GNI. Indicators covered include the number of procedures, the average time spent during each procedure, official cost of each procedure, minimum capital required and overall rank.
- *Hiring and firing workers.* The hiring and firing category considers the employment laws in the countries surveyed. The three major components of this employment laws index are flexibility of hiring, the conditions of employment, and flexibility of firing. The first point includes ease of use of part-time, fixed-term, and family members' contracts. Working time requirements, mandatory payment for non-working days and minimum wage legislation are the major aspects of employment conditions. The main factors to evaluate the flexibility of firing are legal protections against dismissal and procedures for dismissal, notice period and severance payment.
- *Access to credit.* Two sets of indicators of credit availability are considered, namely credit-information sharing and an indicator of the legal protection of creditor rights. On the first point, data provides information whether public credit registries or private credit bureaus operate in surveyed countries as well as the amount of credit information covered by them. Lending facilitation resulting from rules of credit information registries is measured by an index based on the scope of information collected, the scope of information distributed, the ease of access to information and the quality of information. Creditor rights as well as the powers of secured lenders in insolvency are measured in the second set of indicators.
- *Enforcing contracts.* This indicator takes into account that good enforcement is vital for preventing a situation where trade and credit are restricted to a small community of people who have developed informal relations. By looking at simple transactions in everyday business activity of the average business, variation in the efficiency of contract enforcement is traced. Indicators studied include the number of procedures counted from the moment the plaintiff files the lawsuit in court, until the actual payment; the associated time, in calendar days; the associated cost, in court fees, attorney fees, and other payments to professionals; and an overall index of procedural complexity in commercial dispute resolution.
- *Closing a business.* The segment of the database comprises several indicators with the emphasis being on weaknesses in the existing bankruptcy law, as well as the main procedural and administrative bottlenecks in the bankruptcy process. In this context bankruptcy professionals such as lawyers, accountants and judges were questioned on the step-by-step procedures of filing for bankruptcy proceedings, initiation of bankruptcy, the petition hearing, the court's decision, the appointment of an insolvency practitioner, the assessment of claims and their ordering by priority, and the sale of assets. Based on these answers, indicators of the efficiency of the bankruptcy process as well as of the powers of the court are developed.

The Doing Business scoreboard undertakes no weighting of the individual responses including within the five individual categories themselves. By means of illustration, the indicators of the average obstacles to starting a business, aggregated to major geographic areas, are provided in Table 3.

Table 3. Main indicators for starting a business, January 2004

Region	Number of Procedures	Duration (days)	Cost (% GNI per capita)	Min. Capital (% GNI per capita)
East Asia & Pacific	9	61	61.9	174.6
Europe & Central Asia	10	40	16.2	67.7
Latin America & Caribbean	11	70	60.1	32.3
Middle East & North Africa	9	40	53.0	945.3
OECD: High income	6	25	8.1	47.0
South Asia	9	43	52.5	85.6
Sub-Saharan Africa	11	64	224.2	278.5

Source: World Bank's Doing Business, based on Djankov et al. (2001).

5) *The Global Competitiveness Report*

Ranking economic competitiveness of a large sample of countries is the central goal of the World Economic Forum's Global Competitiveness Report. The publication combines two complementary approaches, on the one hand the Growth Competitiveness Index and on the other the Business Competitiveness Index. The two combine publicly available empirical information with data drawn from the Executive Opinion Survey which the World Economic Forum undertakes annually. The survey reflects the perceptions of leading business executives and entrepreneurs regarding key obstacles to economic growth in their country, as well as the specific business environment their enterprise is facing. In 2003, 102 countries were surveyed, which account for 97.8 percent of world's GDP.

The central objective of the *Growth Competitiveness Index* (GCI) is analysing economies' potential to attain sustained economic growth over the medium and long term, placing great emphasis on technology and technological advancement. At the heart of GCI is the notion that the process of economic growth can be ascribed to three broad factors, namely the macroeconomic environment, the quality of public institutions and technology. Three indices are constructed, based on a mixture of "hard data" and survey responses, to track countries' performance in each of these respects. The main ingredients of the indices are as follows:

- *Macroeconomic environment.* The hard-data indicators for macroeconomic stability include statistics for government deficits, national savings rates, inflation, real exchange rates and interest rate spreads. These are supplemented by survey questions about the likelihood of a recession and the availability of credits.
- *Public institutions.* This index is entirely survey based. It is the un-weighted average of two sub-indices covering enterprise perceptions of corruption and the enforcement of law and contracts.
- *Technology.* The technology index is a weighted average of three sub-indices, covering the areas of "innovation", "technology transfers" and "information and communication technology (ICT)".
 - Innovation. This sub-index is primarily based on hard data covering the number of utility patents granted and tertiary education enrolment, secondarily on survey respondents asked to rate the national innovative efforts.
 - Technology transfer. This indicator is based on two survey questions regarding FDI and licensing as sources of technology.
 - ICT. The ICT sub-index is based mainly on hard data on telephone, computer and internet usage, secondarily on survey responses regarding on availability of and government policy toward ICT.

The weighting of these three indices to produce GCI, as well as the internal weighting of the technology index, depends on whether a given country is considered to be a “core” or a “non-core innovator”. This separation is based on the observation that the origin of technological advance differs across countries depending on their distance from the technology frontier. Highly advanced economies can mostly acquire enhanced technology only by innovation, whereas low-tech countries have ample scope for doing so by imitation, licensing and the purchase of existing capital equipment. It was decided to draw the borderline indicator between these two groups at 15 US patents per year per million of population. In short, the GCI for core innovators depend more strongly on the technology index than is the case for non-core innovators, and the technology index itself depends relatively more strongly on the innovation sub-index in the case of core innovators.

The ten “top scoring” countries according to GCI and each of its three constituent indices are presented in Table 4. Interestingly, the table brings forward some countries that do not top many of the other investment scoreboards, such as for instance Jordan and Tunisia thanks to public institutions perceived as strong and, in the case of Tunisia, a benign macroeconomic performance.

Table 4. Growth Competitiveness Indicators: top-10 developing countries

Total		Macroeconomic environment		Public institutions		Technology	
Singapore	5.54	Singapore	5.69	Singapore	6.28	Estonia	5.16
Chile	4.86	China	4.56	Chile	5.62	Singapore	5.09
Malaysia	4.83	Thailand	4.54	Jordan	5.58	Malaysia	4.89
Slovenia	4.70	Malaysia	4.49	Botswana	5.45	Slovenia	4.73
Thailand	4.63	Botswana	4.44	Estonia	5.36	Latvia	4.71
Jordan	4.58	Tunisia	4.38	Uruguay	5.31	Chile	4.60
Botswana	4.56	Estonia	4.37	Tunisia	5.19	Brazil	4.44
Latvia	4.54	Chile	4.36	Malaysia	5.12	Lithuania	4.43
Tunisia	4.49	Latvia	4.31	Slovenia	5.12	Thailand	4.37
Lithuania	4.39	Slovenia	4.27	Thailand	4.97	South Africa	4.35

1. Except for OECD member countries, Hong Kong (China) and Chinese Taipei.

Source: World Economic Forum.

The central objective of the *Business Competitiveness Index* (BCI) is establishing a country ranking based on the microeconomic foundations for competitiveness. The BCI reflects two interrelated areas that form the basis for productivity, namely (i) the sophistication with which domestic companies or foreign subsidiaries operating in the country compete, and (ii) the quality of the microeconomic business environment in which they operate. Consequently, BCI is constructed from two sub-indices, one that captures the sophistication of company operations and strategy and another that measures the quality of the national business environment.

The subcomponents in the indices (with the exception of patent data, internet and telephone penetration) are largely derived from the World Economic Forum’s Executive Opinion Survey. The BCI is the composition of averages of the two sub-indices with the weights being assigned according to the coefficients of a multiple regression of the sub-indices on GDP per capita. However, to date the sample of developing countries covered by BCI is relatively small, so it was chosen not to include this source of data in the remainder of the present report.

6) *Index of Economic Freedom*

The Index of Economic Freedom (IEF) has been annually published by The Heritage Foundation and Wall Street Journal for the last ten years. The aim of this exercise is providing a measure of the degree of economic freedom in a vast array of countries around the globe as a tool for policy makers and investors.

On the one hand, it is debatable whether IEF can be properly characterised as an investment scoreboard, since a good investment climate may often involve factors that go beyond mere “freedom”, but on the other hand, economic freedom includes an absence of many of the regulatory and legal impediments that are analysed in detail by many of the scoreboards in the previous section.

In the 2004 edition of IEF, 161 countries were analysed and classified on a scale from 1 to 5 (1 meaning completely “free”, 5 meaning completely “repressed”). The index is calculated as an unweighted average of ten sub-indices. Each of these sub-indices is based on publicly available data or information about regulatory arrangements (including various issues of the US Department of State’s *Country Commercial Guide* and Economist Intelligence Unit’s *Country Commerce* and *Country Report*), organised subject to subjective assessments of what constitutes which degree of “freedom”. The ten sub-indices are the following:

- *Trade policy*. Based on existing tariff rates; non-tariff barriers; and an assessment of corruption in the customs service.
- *Fiscal burden of government*. Based on top marginal personal and corporate income tax rates; and the year-to-years change in government expenditure.
- *Government intervention in the economy*. Based on government consumption as share of the economy; government ownership of businesses and property and its revenue from such ownership; and economic output by the government.
- *Monetary policy*. Based solely on average inflation rates.
- *Capital flows and foreign investment*. Based on restrictions on foreign ownership of businesses or land; restrictions and performance requirements on foreign-own companies or industries open to foreign investors; equal treatment under the law; restrictions on capital transactions or repatriation of earnings; and availability of local financing to foreign-owned companies.
- *Banking and finance*. Based on government ownership of financial institutions; government influence over the allocation of credit; and government regulations, including concerning the right to open subsidiaries and offer all types of financial services.
- *Wages and prices*. Based on the presence of minimum wage laws; the extent to which governments directly influence prices; and price-affecting government subsidies to business.
- *Property rights*. Based on indicators of legally granted and protected private property; government influence of the judicial system; corruption within the judiciary and delays in receiving judicial decisions; expropriation of property; the commercial code defining contracts; and sanctioning of foreign arbitration of contract disputes.
- *Regulation*. Based on the presence of licensing requirements and the ease of obtaining a license; corruption within the bureaucracy; labour, environment, consumer safety and occupational health regulations; and other regulations that impose a burden on business.
- *Informal market activity*. Based on the pervasiveness of smuggling and intellectual property piracy; and the supply of goods, services and labour on the informal markets.

The ten most “free” developing countries according to the 2004 Index of Economic Freedom can be found in Table 5. It appears that many of the countries score well in terms of “freedom” as compared with

more conventional performance parameters. Moreover, several of the best performers according to the IEF ratings have achieved major improvements over the last five years.

Table 5. Index of Economic Freedom Rankings

	2004		1999	
	Global ranking	Score	Global ranking	Score
Hong Kong, China	1	1.34	1	1.51
Singapore	2	1.61	2	1.54
Estonia	6	1.76	27	2.29
Chile	13	1.91	17	2.13
Cyprus	14	1.95	34	2.66
Bahrain	20	2.08	4	1.81
Lithuania	22	2.19	39	2.90
El Salvador	24	2.24	29	2.38
Bahamas	25	2.25	20	2.16
Latvia	29	2.36	36	2.74

Source: Heritage Foundation.

7) *FDI Confidence Index*

The FDI Confidence Index was developed by A.T. Kearney in the context of the Global Business Policy Council. Unlike all other indicators surveyed in this paper, this Index aims directly at gauging the prospect for FDI as opposed to other kinds of business investment. Developed in 1998, the Index is based on a survey administered to senior executives of the world's 1000 largest corporations. The 1000 companies represent 41 countries and 24 different industries (in 2003). The host countries considered by the survey are, according to A.T. Kearney's documentation, "64 countries which receive more than 90 per cent of global FDI flows". In other words, more than half the survey's coverage consists of highly developed countries.

Respondents are asked whether, in the coming one to three years, the likelihood of their company undertaking FDI in a given host country is "high", "medium", "low" or it has "no interest" in doing so. Values from 3 to 0 are assigned to the four responses, and the Index is calculated as an average thereof.

Table 6. FDI Confidence Index: Top-10 destinations among developing countries

Rank	2003 Survey	2001 Survey	1999 Survey
1	China	China	China
2	Mexico	Brazil	Brazil
3	India	Mexico	Mexico
4	Russia	India	India
5	Brazil	Singapore	Argentina
6	Thailand	Thailand	Thailand
7	Vietnam	Malaysia	Singapore
8	Hong Kong, China	Turkey	Malaysia
9	Malaysia	Argentina	Philippines
10	Turkey	Hong Kong, China	Hong Kong, China

Source: A.T. Kearney.

Table 6 summarises the top emerging economy destinations of FDI according to three historical issues of the FDI Confidence Index. It would appear from the table that, following the Argentine crisis, South American economies have moved down on business executives' list of priorities, whereas interest in China, Mexico and India remains strong and Russia has moved to the forefront recently.

8) *Summary*

In the last five to ten years a preponderance of investment and business climate scoreboards has been developed by international organisations, think tanks and private consultancy groups. This follows an earlier decade (the 1980s) during which empirical studies of countries' success in attracting FDI, and the main factors influencing it, figured prominently in academic literature. However, whereas the work toward constructing the scoreboards can be seen as the logical consequence of the earlier interest in quantifying the quality of investment climates, comparatively less is known about how effective the scoreboards themselves are at predicting investment.

A rather clear recent tendency has been for investment scoreboards to rely stronger on empirical indicators and less on survey responses. Both UNTAD's Investment Compass and the World Bank's Doing Business rely mainly on verifiable data. The World Economic Forum, while mixing "hard data" and survey responses, consistently give greater weight to the former when constructing its composite GCI index.

Survey data are by nature subjective, but surveys of national business environments have additional built-in weaknesses. If all the respondents to a survey is found outside the country under review then the responses are at risk of being either ill-informed or biased toward a specific kind of enterprises (the latter could be the case with the FDI Confidence Index's focus on large companies based in relatively few countries). On the other hand, as indicated in earlier sections, the survey responses of purely domestic enterprises tend to show surprisingly small discrepancies across countries – perhaps because they represent the companies that have been able to survive in the prevailing national business climate. Popularly put, investor surveys can sample only the enterprises that are actually there, not the ones that might, under a different set of circumstances, have been there.

Even as a consensus may be emerging that investment scoreboards ought to rely largely on verifiable data, this is, however, not without practical problems. The Investment Compass with its heavy reliance upon macro statistics often needs to depend on general data that are, at best, proximate indicators for the elements of the investment climate they are intended to describe. The perhaps most ambitious approach in this respect is the one used for Doing Business.

b) *Specific indicators*

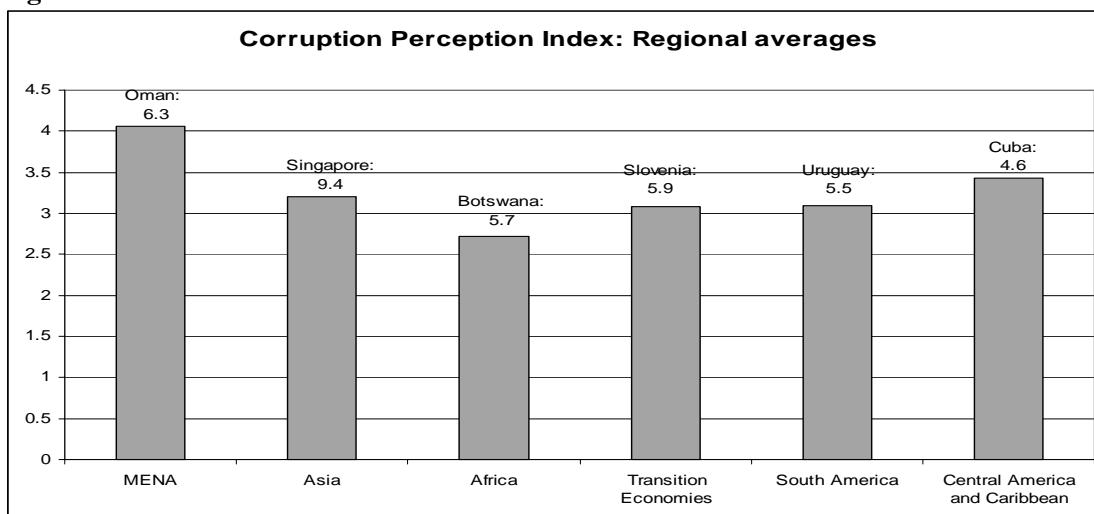
The present section considers indicators that are not investment scoreboards, but that contain pieces of evidence that are relevant for investment decisions. Country rankings according to various performance criteria have mushroomed in recent years, not least under the influence of the growing importance of international think tanks and non-governmental organisations. Providing a full list of such indicators goes beyond the scope of this study. Two of the most frequently quoted (and, it is assumed, most relevant to international investors) are included, namely the Corruption Perception Index of Transparency International and the Opacity index published by PriceWaterhouseCoopers.

1) *Corruption Perception Index*

Transparency International's Corruption Perception Index (CPI) evaluates the degree to which corruption (defined as the abuse of public office for private gain) is perceived to exist in the public sectors of individual countries. In 2003, the ranking covered 133 countries. Transparency International does not undertake one encompassing survey exercise of its own. Instead, CPI is based on 17 different polls and surveys from 13 independent institutions carried out among business people and country analysts, including surveys of residents. The results are organised on a scale from 0 to 10, with 10 signifying a total absence of perceived corruption.

For a country to be ranked in the CPI, the availability of at least three sources is a precondition. With regards to sources, guidelines have been established for their selection. It is indispensable that a source provides a ranking of nations since the use of different methodologies would prevent comparisons to be made. Moreover, the overall level of corruption must be measured and aspects of corruption may not be mixed with issues other than corruption. A regional aggregation (by unweighted averages) of the outcome of the 2003 CPI can be seen on Figure 5. The top scorer within each region is indicated at the top of the bars.

Figure 5:



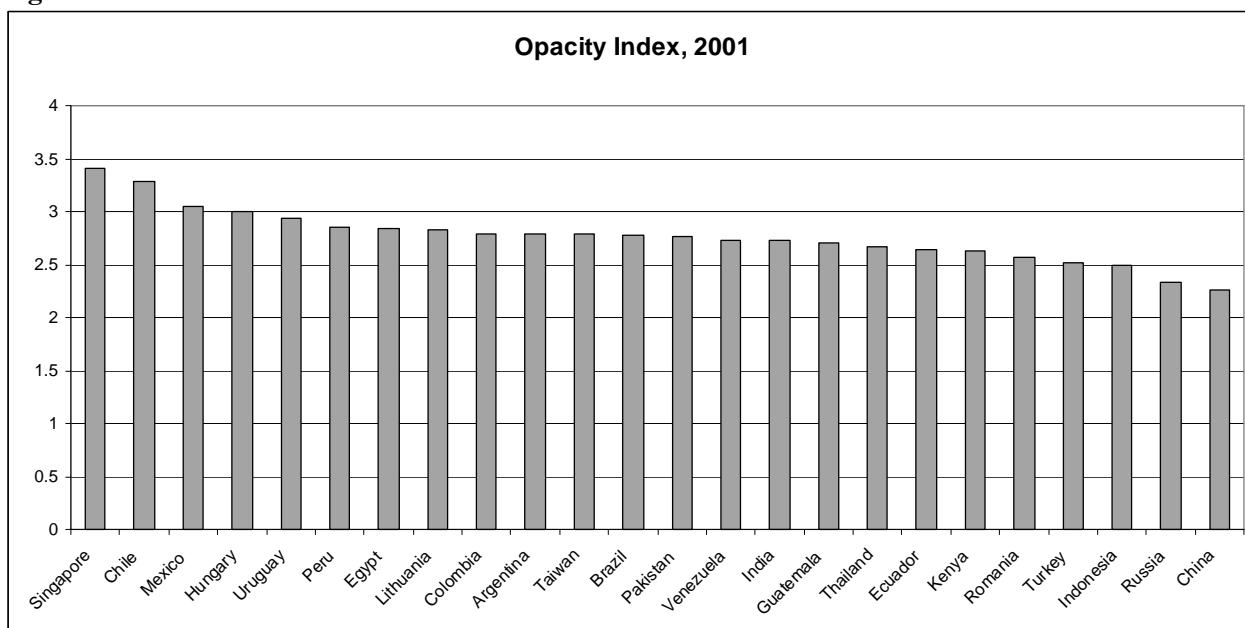
The CPI is intended to provide a snapshot of the perceived national differences in corruption facing those who make decisions about international investment and trade. Complementary indexes are the Global Corruption Barometer that considers the attitudes or the general public regarding corruption, and the Bribe Payers Index that evaluates foreign business partners' propensity to offer bribes.

2) *Opacity Index*

PriceWaterhouseCoopers published its so-called Opacity Index in 2001. The purpose of the Index is to provide an estimation of the adverse effects of opacity on the cost and availability of capital. Opacity is defined as "the lack of clear, accurate, formal, easily-discernable and widely accepted practices". 35 economies were covered by the study, of which 10 "developed countries" (according to UN terminology) and the remainder split among some of the main players among developing countries.

The Opacity Index was based on a survey of the perceptions of corporate leaders, banking executives, equity analysts, and in-country staff of PricewaterhouseCoopers. They were asked to assess five different areas of opacity in each country on a scale from 1 to 4. The five areas were: (i) corruption; (ii) the legal system; (iii) economic and fiscal policies; (iv) accounting standards and practices; and (v) the regulatory regime. The overall Opacity Index is calculated as an unweighted average of the five sub-indices. The scores of the developing countries in the sample are found in Figure 6 (please note: the authors of the study often publish the so-called O-factor in lieu of the index, which is calculated as $(4 - \text{Opacity Index}) * 50$).

Figure 6:



II. Competing scoreboards: are they consistent?

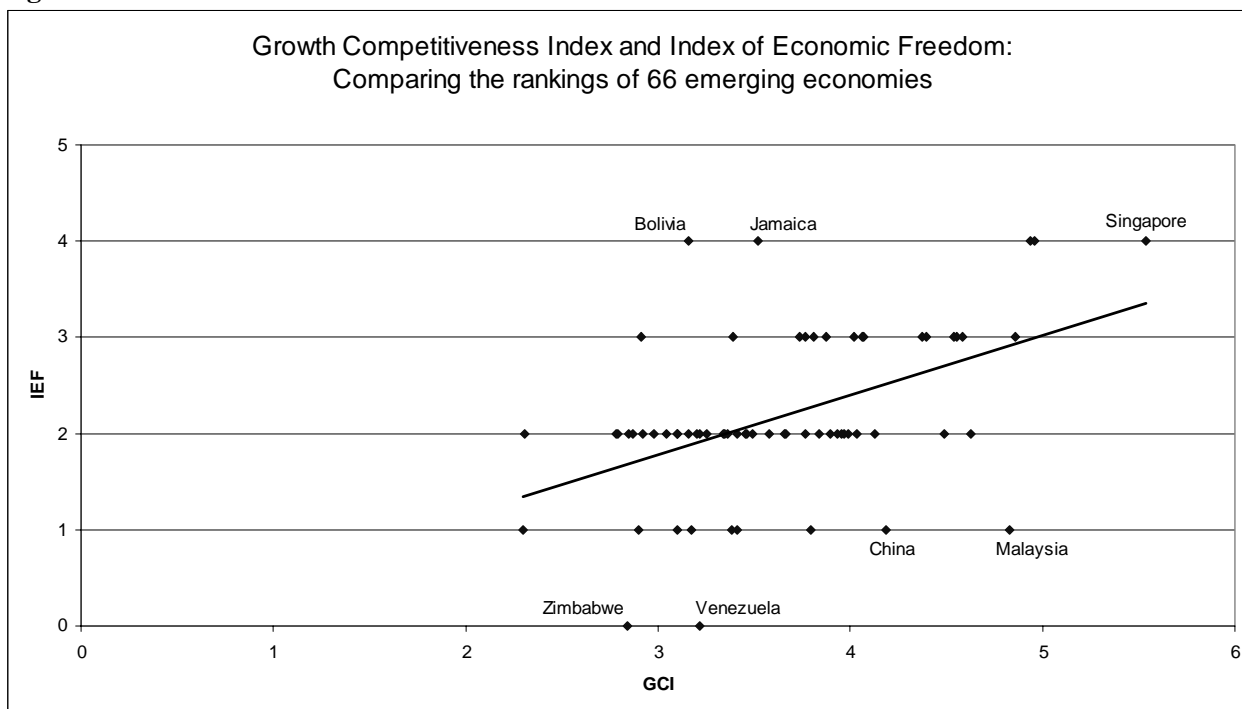
As mentioned earlier, a direct comparison of the rankings from individual scoreboards is rarely possible. First and foremost, the scoreboards rarely focus on exactly the same aspects of the business climate, extending, as they do, from the availability of resources and infrastructure to regulatory quality; to national competitiveness; to “economic freedom”; to investment intentions. Secondly, only a minority of the scoreboards attempt to rank, in one number, the overall quality of countries’ investment or business climate. This means that country performance can in most cases be compared only at the level of disaggregate indicators, which cover an ever wider array of separate topics. Thirdly, differences in country coverage are an added challenge. Scoreboards including, say, 50 and 100 countries may in practice have only 30-35 overlapping observations, which is a somewhat thin basis for comparisons.

This subsection limits itself to comparing scoreboards that include at least 50 developing countries (this excludes BEEPS and the FDI Confidence Index). It first examines whether the two indices that attempt an overall ranking of countries (Growth Competitiveness Index; Index of Economic Freedom) yield broadly similar results. Secondly, it compares selected individual components of the other scoreboards (Investment Compass; WBES; Doing Business) covering broadly similar aspects of national investment climates.

a) Overall country rankings

Sixty-six developing countries are covered by both the Index of Economic Freedom and the Growth Competitiveness Index. The scores of these countries are plotted against each other in Figure 7 (the values plotted for IEF are calculated as “5 minus IEF”; consequently an increasing score on both axes signifies an improved investment climate). A regression trend line approximating the linear relation between the two variables has been added. It follows from the figure that the two ratings, despite the different scopes of the scoreboards, are broadly consistent in the sense that countries that score relatively highly on one of them also tends to do so on the other. Selected outlying or otherwise interesting observations are labelled with the relevant country name.

Figure 7:



Among the outliers, two countries in particular would seem to combine a high degree of economic freedom with limited growth competitiveness, namely Bolivia and Jamaica. On the opposite side, China and especially Malaysia stand out as being competitive whilst not having a particularly “free” domestic economic environment. The two lowest scorers in the IEF index, Zimbabwe and Venezuela are also low compared with the trend line, though it should be noted that they score poorly in the GCI index as well.

The reason for some of the outliers in figure 7 would seem to be that the main focus of IEF, “economic freedom” is more closely related to the quality of public institutions, which is the target of one of the three sub-indices in GCI, than with macroeconomic stability and technology (the two other sub-indices). For instance, Malaysia scores highly in most scoreboards’ rating of technological advancement, whereas Jamaica and Bolivia do not. In order to investigate this, the correlations between IEF, GCI and the latter’s three sub-indices were calculated (Table 7). As suspected, the strongest correlation is found between IEF and GCI’s rating of the quality of public institutions, whereas the technology sub-index appears to have relatively least to do economic freedom.

Table 7. Co-variation between Index of Economic Freedom and Growth Competitiveness Index

	GCI total	GCI macro-economics	GCI public institutions	GCI technology
Correlation coefficient	0.47	0.44	0.49	0.34

b) Individual components of the scoreboards

As repeatedly stated, the topical coverage of WBES, Doing Business and the Investment Compass differs. With its strong focus on regulatory and public governance issues WBES’s indicators can be

compared only with two parts of the Investment Compass, namely area 6 (“regulatory framework”) and part of area 4 (“economic performance and governance”). In this context it may seem problematic that the indicators of public governance in the Investment Compass are drawn from the World Bank Institute’s Governance Indicators – that is, like the WBES it depends on a survey exercise undertaken by the World Bank group. However, as illustrated below, the Governance Indicators do at times differ significantly from the WBES survey responses.

Doing Business focuses almost entirely on governance and regulatory matters, but while it is arguably the most well documented of the scoreboards, its topical focus is narrower than WBES in the sense that it picks a few concrete indicators of the burden of regulation. The comparison of individual components of the scoreboards therefore has to rely on the coupling of indicators that aim at “broadly” the same aspect of the investment climate. Naturally, there are several of those, but for the purpose of the present exercise, two illustrative examples have been selected. First, an “overall” indicator of political stability drawn from the Investment Compass and WBES is reviewed. Second, more “specific” indicators of the rule of law from all three scoreboards are compared.

1) *Political stability*

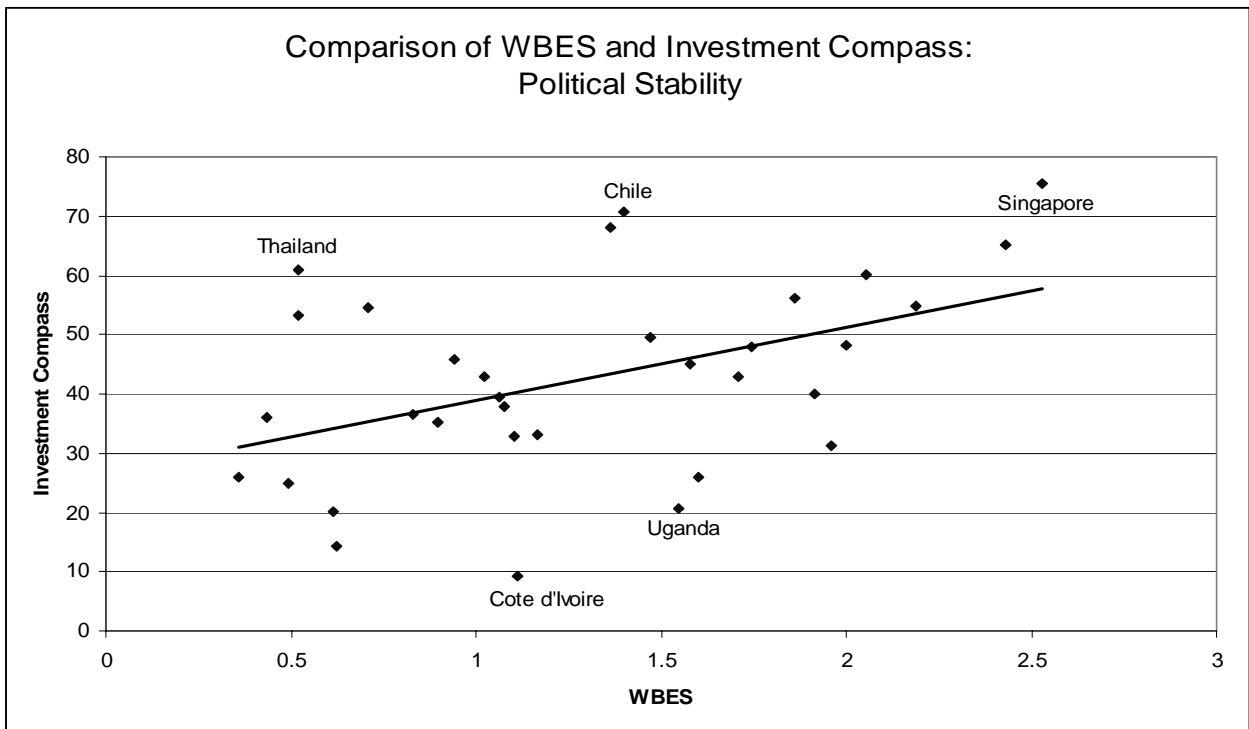
WBES and the Investment Compass both directly cover the issue of political stability. However, owing to the still relatively limited size of the Investment Compass’ sample, and owing also to a different area bias (WBES includes almost all transition economies; Investment Compass focuses more strongly on LDCs), the comparison can only be based on 33 observations (Figure 8). Consequently, overly firm conclusions should be avoided.

The first observation to be made from Figure 8 is that the two scoreboards seem broadly consistent in the sense that countries that score highly in the Investment Compass generally also do so in WBES, and *vice versa*⁴. That said, the correlation between the indicators does not appear to be very strong, and the figure displays some spectacular outliers. The differences between the rankings would seem to be indicative of the difference in questioning between the two scoreboards. The Investment Compass is based on a survey that aims to ascertain whether the degree of political stability in a given location is high or low, whereas WBES asks the local businesses whether they see political stability as a problem in their daily business.

It could moreover be indicative of a problem with selection bias in the case where survey respondents are the companies that are present in a given location. Outliers in figure 8 such as Thailand and Chile are commonly considered as having a rather high degree of political stability, but WBES respondents nevertheless rate the political stability in these countries as an average or above-average concern. Conversely, in certain African countries that are rated very lowly by the Investment Compass, WBES respondents did not express great concern. One explanation may be that the – perhaps few – companies that operate in some of the countries with a problematic public governance are those that have learned to overcome the shortcomings. In countries like Thailand and Chile, on the other hand, many international enterprises are present whose basis for comparison may be the conditions that prevail in the most highly developed economies.

4 The WBES indicator is transformed by means of the formula “6 minus indicator” to facilitate comparison with the Investment Compass. In the original version of the two scoreboards a high value indicates a good investment climate in the Investment Compass and a bad one in WBES.

Figure 8:

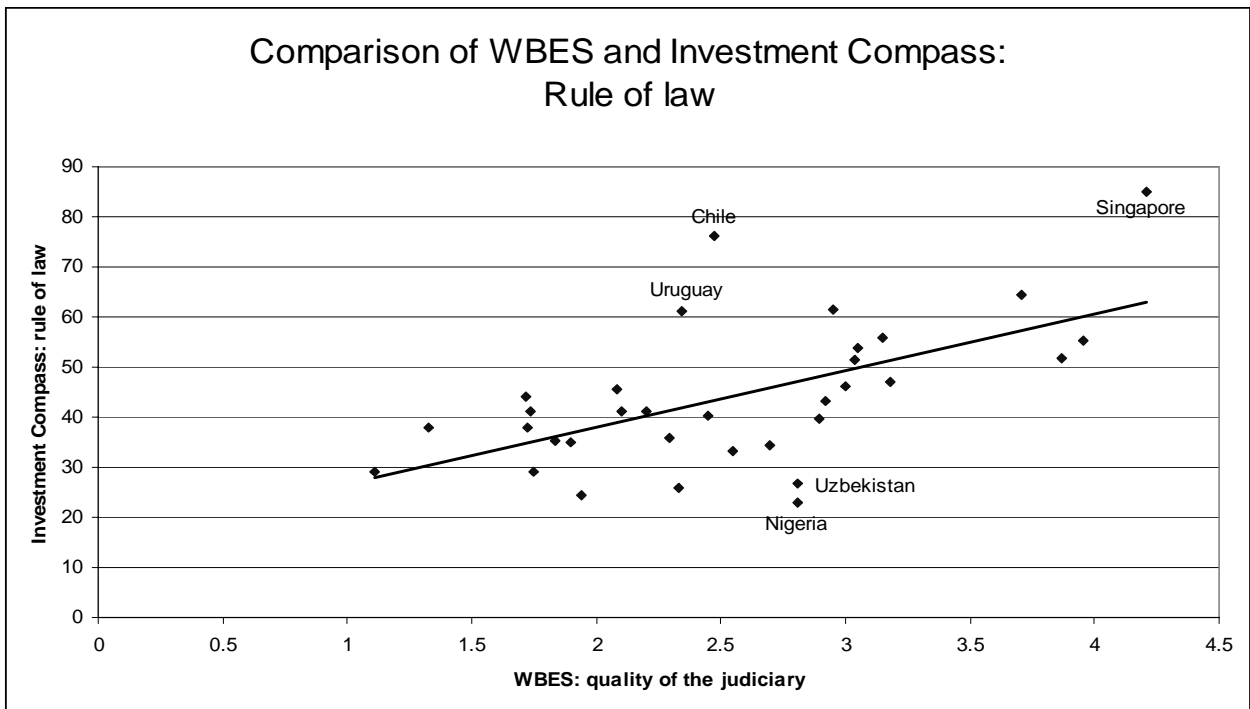


2) *The rule of law*

The Investment Compass includes a direct, survey-based attempt at quantification of “the rule of law” in a number of countries. From each of the other two scoreboards in the comparison, a proxy was selected. From WBES, respondents’ ranking of the degree to which the quality of the judiciary is an obstacle to business was used as indicator of the rule of law. From Doing Business, the number of procedures needed to enforce a contract was used.

Figure 9 compares the respective indicators from WBES and the Investment Compass. The relationship between the two appears closer than is the case in Figure 8, conceivably because *de facto* shortcomings in the legal system are more commonly considered as a problem for business than the previous question about political stability. Even so, this figure two has a couple of outliers where countries that appear to have a reasonably good legal environment are nevertheless criticised by their national investor communities (e.g. Uruguay, Chile), and where respondents voice few concerns despite legal environments that do not score highly in international comparison (e.g. Uzbekistan, Nigeria).

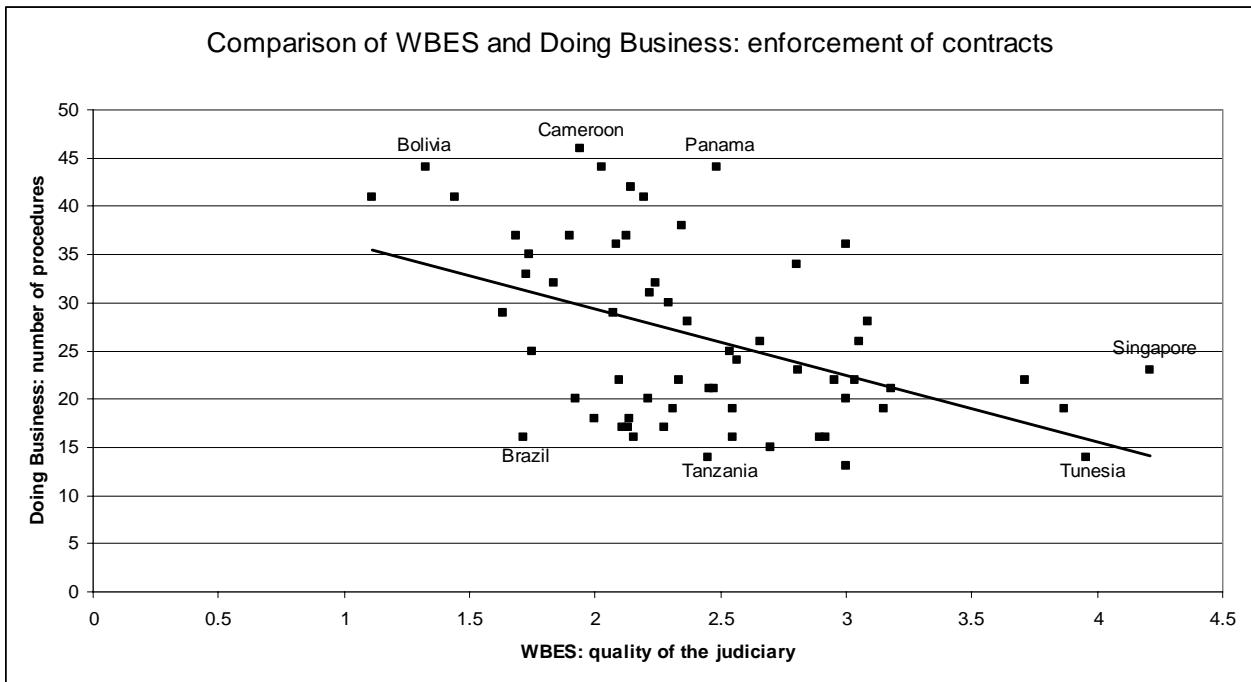
Figure 9:



Formally speaking, the relationship between the WBES indicator (“quality of the judiciary”) and Doing Business’ indication of the average number of “procedures” needed to enforce a contract needs not be particularly close. Nevertheless, figure 10 demonstrates a clear negative correlation between the two – a finding that appears more strongly founded than the previous ones, since it is based on 61 observations. A tentative conclusion from figure 10 is that countries rate the quality of the judiciary as a problem in countries where a relatively simple procedure such as contract enforcement is cumbersome in terms of the number of procedures involved. A similar result is found when replacing the number of procedures with the duration or costs of enforcing a contract (likewise from Doing Business).

The finding is interesting, for enterprises usually indicate that they are willing to put up with cumbersome procedures if they find it enhances their legal protection or the regulatory environment more generally. Figure 10 seems to indicate that, in the case of the countries surveyed, enterprises consider the complexity of legal procedures as a drag on their activities rather than a safeguard.

Figure 10:



III. What do the scoreboards tell us about countries' ability to attract FDI?

The following subsections will test empirically the capacity of four of the investment scoreboards, namely the Growth Competitiveness Index, Index of Economic Freedom, World Business Economic Survey and Investment Compass, to help explain the differences between developing countries' ability to attract FDI. The country coverage of the four scoreboards is provided in Annex 1.

In all cases, the variable used as representative of a country's success in attracting FDI is its total inward FDI position (variable name "FDIstock" in the following) as reported in UNCTAD's World Investment Review. This is not uncontroversial. All investment scoreboards attempt to measure a national reality in the 21st century, whereas inward investment positions may be the sum of investment decisions taken over several decades of the past. However, the alternative is to use investment scoreboard to explain FDI flows, and as the latter are notoriously volatile in small and/or relatively poor countries (responding strongly, as they do, to individual investment projects, privatisation programmes, etc.) of investment positions are preferred as an indicator of country "attractiveness"⁵.

As a starting point it is assumed that inward FDI positions depends on a small number of factors (in the following referred to as "control variables") that are not necessarily captured by investment scoreboards. Foremost among these are (as demonstrated by a multitude of empirical literature) the size of the population ("POP") and national income levels, or value-added, per capita ("GDPcap"). This is a direct consequence of "market-seeking" FDI which aims to service the consumers in a given country by producing, and otherwise operating, locally. To capture another important category of investment in

5 A compromise would be to use a long moving average of annual FDI flows as the target variable. However, as UNCTAD's investment position data in many developing countries rely on cumulative flows, the difference may in practice be limited.

developing countries, namely “resource seeking” FDI, indicators of the importance of energy and minerals have been included. These are the share of fuel in total merchandise exports (“FUEL”), and the share of metals and ore in total merchandise exports (“METAL”). These variables are all derived from the World Bank’s World Development Indicators database. Countries for which no indicators of the variables in question are available for the last ten years have been omitted from the sample.

In the case of investment scoreboards that do not attempt to assess the restrictiveness of capital accounts and other policies toward FDI, the Heritage Foundation’s indicator of FDI regulation (“FDIreg”) has been used. Finally, three dummies indicating whether countries are located in Latin America (“LATdum”), Asia (“ASIAdum”) and Africa (“AFRDum”) were used to check for systematic differences among the main regions of the world.

a) *Estimation results*

The gist of the econometric findings below can be described as follows. All four models yield economically meaningful results, with the control variables (country size, income levels and, in most cases, the availability of raw materials) playing an important role. Elements of the investment scoreboards also entered into all the equations – whereby sub-indices and even individual components of the scoreboards in many cases perform more strongly than the main indices.

1) *The Growth Competitiveness Index*

It was chosen to estimate econometrically the impact of the GCI initially broken down by its three sub-indices namely macroeconomic environment (“GCI_{mac}”), public institutions (“GCI_{pub}”) and technology (“GCI_{tech}”). The estimation results are presented in the Annex to this report, Table A1.

In the first estimation with no variables omitted, many of the explanatory variables (except for the habitually strong POP and GDP_{cap}) perform weakly. Most remarkably, however, GCI_{pub} comes out statistically insignificant and with an un-interpretable sign. It would appear that GCI’s index for the quality of public institutions makes no contribution to explaining what countries attract FDI – or at least within the given sample. Re-estimating the equation with a composite indicator defined as $0.5 \cdot \text{GCI}_{\text{mac}} + 0.5 \cdot \text{GCI}_{\text{tech}}$ as representative of the GCI indicators improves the model’s qualities (Table A1, line 2). Actually, GCI_{tech} appears to be the strongest performer among the three sub-indices. It does in some specifications (not shown in the Annex) come out as the only one with significant predictive power.

Further experiments were made, replacing FUEL and METAL with an aggregate indicator of raw material dependency (line 3) and dropping the regional dummies (line 4). Both can be done at a minimal cost to the model’s predictive qualities. Replacing, in the reduced version of the equation, $0.5 \cdot \text{GCI}_{\text{mac}} + 0.5 \cdot \text{GCI}_{\text{tech}}$ with the overall GCI index results in a marginal deterioration which must, however, be weighed against the advantage of using a widely publicised index in the model. Figure A1 in the Annex shows the actual and fitted values according to equation 4.

2) *Index of Economic Freedom*

In view of the large number of sub-indices to IEF, it was chosen to start by testing the predictive power of the index itself (Table A2). In the enlarged sample, owing to the greater country coverage than IEF than GCI, the overall fit of the model declined. Most of the control variables, including raw-material dependency and the three regional dummies, were rendered insignificant in all estimations and consequently were dropped from the equations presented in Table A2. As a corollary to this, the importance of population and per-capital incomes in explaining inward FDI was even more pronounced than in the previous estimations.

As demonstrated by equation 1 in Table A2, the Index of Economic Freedom contributes significantly to explain what countries are relatively more or less likely to attract FDI. (In order to render the signs of the estimates more intuitive the explanatory variable “IEF” in the table was constructed as 5 minus the Index of Economic Freedom.)

An alternative formulation was attempted, including all IEF’s sub-indices in free estimation (IEFtp: trade policy; IEFfb: fiscal burden; IEFgi: government intervention; IEFmp: monetary policy; IEFfi: foreign investment; IEFbf: banking and finance; IEFwp: wages and prices; IEPpr: property rights; IEPr: regulation; IEPim: informal market). Predictably, given the large number of variables in the model, many of the indicators came out insignificant or with an unpredictable sign. Such macroeconomic indicators as the fiscal burden and monetary policy were particularly hard to get into the model in a meaningful way. IEFtp also dropped out at an early stage, which is harder to explain given the generally accepted linkage between openness to trade and ability to attract FDI. Perhaps most perplexingly, IEFfi that is supposed to measure a country’s openness to FDI did not perform well in the estimations either.

In the end, a composite index calculated as $(IEFgi+IEFpr+IEFwp+IEFr)/4$ was found to outperform the main IEF index in predicting what countries are better at attracting FDI (Table A2, Equation 2). Finally, in order to see whether recent improvements in “freedom” had exerted a separated impact on countries inward FDI stock, the variable $\Delta 5IEF$ capturing the change in IEF between 1999 and 2004 was added to the equation (if the five-year old index had been a better predictor than present-day IEF it would also have shown up in the impact ascribed to this variable), but without a significant impact. Figure A2 in the Annex shows the actual and fitted values according to equation 2.

3) *World Business Environment Survey*

As mentioned above, WBES contains a multitude of individual indicators, the coverage of which is clustered into main areas (regulation, corruption, transparency...), but that not aggregated to indices or sub-indices. In consequence, a very general specification was attempted, which however (reflecting the relatively limited 63 countries in the sample) had to be limited to two or three representative indicators from each of the main areas.

After weeding out variables with a clearly insignificant or un-interpretable impact, equation 1 in Table A3 ensued. The variables from WBES that made it into the equation are WBgotr: “general obstacles, taxation and regulation”; WBroen: “regulatory obstacles: environment”; WBrotax: “regulatory obstacles: tax administration”; WBrola: “regulatory obstacles: labour”; WBPste: “public services: telecom”. Among the control variables, the population and per capita income performed strongly as usual, and the indicator of raw material exporting countries also had a significant effect, whereas the regional dummies had little or no impact.

The only WBES variable in equation 1 that has a significant impact on a 95% confidence level is WBPste. Also, WBroen has a sign that can appear counter-intuitive, given that it indicates that particularly serious regulatory obstacles in the environmental area attract FDI. However, a number of empirical studies have concluded that foreign investors are rarely attracted to locations that operate on low environmental standards and may be attracted by sound environmental regulation (e.g. Zarsky, 1999). Moreover, an identification problem relates to the variables WBgotr and WBrotax, which are strongly collinear: respondents who feel constrained by regulatory obstacles in tax administration usually also register their complaints about the general nature of taxation and regulation⁶.

6 One may speculate that this finding is influenced by a relatively strong representation of ex-Soviet and other transition economies in the sample.

In equations 2 and 3 WBrota is dropped and the significance of the remaining variables is tested. WBgotr now becomes clearly significant, but (apart, still, from WBPste) no other variable does. In equation 4, WBgotr has been replaced by WBrota. The latter is significant *en lieu* of the more general indicator, but the overall equation performs marginally worse. Figure A3 in the Annex shows the actual and fitted values according to equation 3.

4) *Investment Compass*

A special dataset was obtained from UNCTAD for the purpose of this exercise, which included six countries in addition to the 52 from the official version of the Investment Compass. The chosen strategy was to undertake the empirical analysis at three different levels of aggregation: the six main indices of the Compass (e.g. “resource assets”), the 12 sub-indices (e.g. “quality of human capital”) and the bottom-level indicators themselves (e.g. “science and engineering students”).

However, as this involves 59 variables (and 18 indices), the 58 country observations in the data set are not sufficient to attempt a free estimation of all the explanatory variables.⁷ In consequence, a sequential approach was chosen: first, countries’ inward FDI stocks were estimated as a function of the six main indices alone (plus regional dummies, but none of the other control variables as factors such as size of economy, population and the availability of raw materials are all internal to the Compass). Second, this estimation was repeated a number of times, each time with one of the main indices disaggregated to level 2 (except for the fifth index that has no sub-indices). The outcome of this exercise can be found in Annex Table A4.

Third, a further disaggregation to bottom-level indicators was attempted for those sub-indices that had proved themselves significant – the purpose being to establish whether individual variables were responsible for the strong performance. Fourth a final attempt was made to include bottom-level indicators from the insignificant sub-indices in the equation. The outcome of the experiments with individual variables can be found in Annex Table A5.

In order to be able to present Table A4 in a relatively compact form, the following naming convention was applied: IC1tot through IC6tot are the six main indices of the Investment Compass (1: resource assets; 2: infrastructure; 3: operating costs; 4: economic performance and governance; 5: taxation; 6: regulatory framework). Sub-1 through Sub-3 in lines 2 to 6 of the table display the estimated effect of the two or three sub-indices of each of the main indices (again, except for IC5tot).

Equation 1 of the table shows that of the six main indices in the Investment Compass, the only ones that add significantly to explain countries’ inward FDI positions are IC1tot (resource assets) and IC6tot (regulatory framework). This seems intuitively appealing, given that the earlier estimations in this paper found the strongest impacts from population size and GDP per capita – both of which embedded in this IC1tot – followed by regulatory indicators.

The testing of the sub-indices in equations 2 to 6 yields interesting additional information. First and somewhat disappointing, none of the sub-indices to the categories “infrastructure”, “operating costs” and “economic performance and governance” adds significantly to the quality of the model. The cost indicators even assume the wrong sign, which would seem to indicate that direct investors, far from being attracted to

7 The problem is compounded by the fact that some of the bottom-level indicators are missing for some of the countries. Importantly this also means that the number of observations in an estimation shrinks when one includes variables at the most disaggregate level.

low-cost and low-wage countries actually tend to avoid these locations⁸. Second, the sub-indices in both “resource assets” and “regulatory framework” perform quite strongly.

The estimation results in Table A5 have taken the findings of Table A4 as their starting point. (The naming convention from Table A4 is now further expanded to cover sub-indices by means of a second numbering – e.g. IC22tot: “infrastructure, ICT”; IC63tot: “regulatory framework, protection and exit). Equation 1 started with the inclusion of sub-indices that, based on the previous estimations, looked the most promising, namely IC11tot to IC13tot and IC62tot to IC63tot. All of these sub-indices entered the model significantly at a 10 per cent confidence level, and most of them on a 5 per cent level. Secondly, a couple of equations were estimated to determine whether certain of the bottom-level indicators performed better than the sub-indices.

As indicated by equation 2, raw GDP figures appear to have greater predictive power than the composite measure (IC11tot) of market size. In equation 2 a further marginal improvement can be obtained by replacing IC12tot by a weighted average of countries’ energy and mineral resources. The third component in the sub-index, agricultural production, appears to have no significant impact on inward FDI, but the improvement was not considered big enough to merit excluding one of the sub-indices. Other estimations indicate that a further improvement may be possible by splitting IC62tot into its individual components. However, detailed data is missing for several countries, so this result coincides with a further reduction in the, already limited, number of observations and may therefore not be robust.

Finally, a number of attempts were made to bring some of the components of sub-indices that were themselves insignificant into the model. As indicated in the last row of Table A5, unemployment rates, an economic performance indicator from IC41tot, have predictive power. There is also an indication that some of the tax variables from IC5tot might have been brought in, but here again there is a number of missing variables which makes the finding less than reliable. Figure A4 in the Annex shows the actual and fitted values according to equation 3.

b) Lessons for aid agencies

The results from the four estimations are very difficult to compare, not least as the sample size and, crucially, the country coverage differs greatly. Nevertheless, the following observations offer themselves:

- The overall quality of the fit in all the estimations is encouraging. Much of the academic literature on the determinants of FDI mixes developing and developed countries, whereby much of the explanatory power goes into identifying rich/poor differences. Many studies have also taken the form of time series analysis, with parts of their findings probably reflecting individual country improvements in rapidly evolving economies. Conversely, explaining a “snapshot” of inward investment positions in developing countries – as was done in the previous section – is considered notoriously difficult.
- The large explanatory power of the control variables “population size” and “income per capita” in the first three estimations is consistent with both economic theory and numerous earlier empirical studies. Both variables come out with an FDI-elasticity of around 1, which means that an increase in a country’s GDP of 10 per cent would result in an increase in the inward FDI stock of 10 per cent as well – regardless of whether the increase takes the form of population growth or higher per capita income.

8 This could be a case of omitted variables: low-cost locations are mostly less developed countries, which most likely have weaknesses in their investment climates that go beyond what is captured by the indicators in the Investment Compass.

- The relatively limited number of indicators from the respective investment scoreboards that in each case performs significantly in the equations can appear disappointing. However, it should be noted that the indicators in the individual scoreboards are mostly collinear (i.e. even seemingly unrelated variables tend to covariate across countries). This seems to reflect the fact that many of the variables captured by the scoreboards (e.g. public governance and regulatory quality) tend to move in unison, and also to some extent reflect the level of economic achievement of countries. Also, in surveys based entirely on investor perceptions a certain country bias can be detected, with dissatisfied (or satisfied) investors consistently giving a given country low (or high) marks across the board.

The limited number of investment scoreboard variables that entered the final equations makes it impossible to use the findings to derive lessons about relative priority areas for policy makers. Instead, two alleys are pursued in the following subsections. First, the numeric significance of the different indicators on countries' ability to attract FDI is derived, and some conclusions are drawn regarding the likely impact of reform in selected countries. Secondly, the countries that perform less well in attracting FDI than the four models would suggest are identified.

1) *Model properties: how much do countries' "scores" matter?*

The estimations reported in the previous section demonstrated that the best specification is a logarithmic-linear one. All the equations are logarithmic with regards to population and per capita GDP, and semi-logarithmic with regards to the impact variables from the investment scoreboards. This has important implications for the interpretation of the results. First, it implies that no country is "too small" or "too poor" to attract FDI; on the contrary countries attract FDI as a function of their size and income. Second, it means that the estimated coefficients to the scoreboard variables can be interpreted as semi-elasticities (i.e. relative responses in FDI stocks to an absolute change in the indicator). A given change in an indicator will, regardless of country, yield a similar *percentage* change in the inward FDI position. Countries with a large prior FDI stock will, of course, see a much bigger *absolute* change than others. An overview of the estimated impact of changes in scoreboard variables on FDI positions is provided below.

Growth Competitiveness Index. The preferred variable from the GCI complex was an un-weighted average of the two sub-indices for macroeconomic stability and technology. A coefficient of 0.63 was estimated to this composite variable (Table A1), which is quite large. It implies that a change of 1.00 in these two elements of the GCI index is likely to cause inward FDI positions in the respective country to jump by no less than 88 per cent.⁹ The average value of the explanatory variable is 3.4 across all developing countries; the lowest score recorded is 2.3 (in Chad and Haiti). This implies that by raising their GCI score from present levels to the emerging economy average, these countries could expect to see their FDI stock double.

Index of Economic Freedom. The one variable that made it into the final equation is an un-weighted average of IEF's indicators of government intervention, freedom in wage and price setting, property rights and regulation. This variable is attributed an estimated coefficient of 0.56 (Table A2), which implies that an improvement of 1.00 in the relevant elements of the IEF index leads to an expected change in inward FDI positions of 75 per cent. The IEF index and sub-indices run from 0 (best) to 5 (worst) and the average score of the four sub-indices that appear in the model is 3.2 for developing countries. In a finding not unlike the previous bullet point it follows that a country that comes out in the lowest category according to

9. Coefficients with values close to zero can be interpreted as percentages (e.g. 0.04 implies a response of 4 per cent to a one unit change in the explanatory value), but large coefficients need to be interpreted via inverse-logarithmic transformation.

IEF's classification could expect to see its inward FDI position more than double if it aligned itself with the emerging economy average.

World Business Environment Survey. Three WBES variables appear in the preferred equation 3 in Table A3, namely a portmanteau assessment of the intrusiveness of taxation and regulation, a rating of the obstacles emanating from labour market rules and an assessment of the quality of telecom services. The model properties of the three are: (coefficients are negative because, as readers are reminded, in WBES responses a large numbers signifies a serious obstacle to business)

- *Taxation and regulation.* This variable assumes the numerically largest coefficient among the WBES indicators, namely -0.50 . This implies that an improvement of about one point of this indicator (which runs from 1 to 4) would lead to around 65 per cent more inward FDI. It is, however, a bit difficult to translate this observation into policy lessons: "taxation and regulation" is a very broad concept, and its strong performance in the model seems to be influenced by the survey responses from a few countries from the former Soviet Union. Characteristically, the lowest performer according to this indicator is Ukraine (score 3.7). If this country were to align itself successfully with the average for developing countries (score 2.8), the model predicts that its inward FDI position would increase by more than half.
- *Labour market regulation.* The indicator for labour market regulation is statistically significant in some of the estimations and not in others, and so must be interpreted with caution. It takes the coefficient -0.26 , which means that a country which improves its score of this indicator by 1.00 (on a scale, this time, from 1 to 6) should see its inward FDI rise by about a third.
- *Quality of telecom services.* This indicator comes out significantly in all equations and although it is strongly collinear with several other WBES indicators of the quality of public services it generally outperforms them. Still, it must be assumed that the variable catches the effect of not just telecom but also other kinds of basic infrastructure. It takes the coefficient -0.28 , implying that it has a broadly similar effect as the labour market regulations above. However, the telecom services indicator is one of the more volatile ones across countries. The lowest-scoring country is Haiti, which, with a rating of 5, is way above the average (2.9), and hence could expect its inward FDI to rise by almost 80 per cent if it managed to align its telecom infrastructure with other developing countries.

Investment Compass. This is the only estimation that was undertaken without control variables, reflecting the fact that macroeconomic variables are already embedded in the Compass. For reasons of comparability, the Compass variables corresponding to the control variables in the other estimations, namely GDP and the indicator of raw material availability, are not included below:

- *Human resource assets.* The indicator of the quality of the labour force enters significantly in all estimations. Its coefficient implies that an increase of 1.00 in the value of the index will give rise to about 2.5 per cent more inward FDI. As the indices in the Investment Compass are all normalised to run from 0 to 100, this implies that the difference from worst to best performer in this respect can explain a two-and-a-half fold increase in FDI¹⁰.
- *Regulatory indicators.* Two regulatory indicators enter the model, both of them quite significantly. The indicator for regulation of commercial operations takes a coefficient of 0.025

10 Actually, as the normalisation is based on a larger number of countries than the 58 presently included in the Investment Compass, the maximum value is sometimes below 100 and the minimum value sometimes above 0.

and the indicator for protection of property and regulation of exit takes a coefficient of 0.02. In other words, these regulatory indicators have very strong explanatory power vis-à-vis the countries included in the Investment Compass. If the two indicators move in unison, a 20 points increase would in principle be sufficient to trigger a doubling of inward FDI, and a country moving from being a low to a high performer could expect to see its FDI increase several times. It should, however, be noted that the indicator for regulation of operations is collinear with national GDP: If the equation is re-estimated with the GDP impact tied to 1 (the same as in the other equations) the impact of regulation is reduced.

These numeric results, in turn, can be turned into model predictions of what countries' inward FDI positions might be, given certain assumptions. Table 8 provides an illustration of this, using the models for the influence of the Growth Competitiveness Index and the World Business Environment Survey as examples. The ten developing countries displayed in the table were selected with a view to being representative across continents and size categories – though it must be assumed that certain of the large countries that have been particularly successful in attracting direct investment (e.g. China, Brazil) would not serve as useful examples as the models tend to under-predict their FDI.

In the case of each model (including the countries for which data are available) it was assumed that the country characteristics – GDP per capita, population size, the availability of raw materials – are given in the short term. Two alternative assumptions were made about each individual country's performance relative to the GCI and WBES indicators: that its scores in each indicator covered by the model change to the average of the sample; or that its scores change to the best performing countries in the sample.

Notwithstanding certain discrepancies across models (which is inevitable considering that not only the explanatory values differ but also the coverage), a few interesting observations can be drawn from the table. The perhaps most visible finding is the massive potential increases in inward FDI that the models assign to large and resource rich countries such as India and Russia. Both countries are close to the average score for emerging economies according to CGI (and so is India in the case of the WBES indicators), but by approaching the top categories within the two scoreboards India could attract at least another US\$ 50 billion. The models differ more on Russia's potential, but it would appear from the magnitude of the figures that, given a successful transition to international regulatory best practices, macroeconomic stability and technology, Russia could rival Brazil as one of the main emerging economy destinations for FDI.

The potential changes in smaller and less-developed countries, for instance in Sub-Saharan Africa, may seem puny in comparison. However, relative to the present foreign corporate presence in these countries, and relative also to the size of their annual economic outputs, the increases in FDI that could be gained from improved performance are considerable. The table predicts that countries like Cameroon and Kenya would stand to almost double their inward FDI by aligning themselves with the average of emerging economies. They could increase their direct investment positions four- to six-fold if they were able to perform up to international best practices (admittedly a tall order in the short run, as best practices are represented by the more highly developed economies of South East Asia).

A country like Bangladesh that is not only rated lowly in the investment scoreboards but also has a large population could apparently increase its inward investment by a factor 10 if it managed to upgrade its performance to that of the highest-scoring developing countries.

Table 8. Potential change in FDI positions according to models: selected countries

	Actual FDI position (US\$ billion)	Growth Competitiveness Index		World Business Environment Survey	
		Assuming a country aligns itself with:			
		Average performance	Best-in-group	Average performance	Best-in-group
Bangladesh	1.1	1.8	9.8	1.7	12.0
Cameroon	1.4	0.8	4.3	0.5	6.1
Egypt	20.7	-2.4	19.0	-3.4	37.5
India	25.8	-8.3	51.7	-4.1	86.3
Kenya	1.1	0.4	4.1	0.6	5.8
Russia	22.5	-2.5	80.2	26.7	226.2
Senegal	1.0	0.2	2.0	-0.9	1.6
Thailand	30.2	-14.7	6.7	4.8	45.4
Uganda	1.8	0.2	1.7	-0.4	1.4
Uruguay	1.3	0.1	3.5	0.0	6.6

2) *Countries performing above, and below, expectations*

This last subsection takes stock of countries that have performed considerably worse than predicted by the estimations. Deviations from the “fitted” value in a model can of course reflect more than one thing. It may for instance point to a weakness in the estimated equation; it could indicate an omitted variable – e.g. important factors not included in the scoreboards; or it may mean that variables that are not of general importance nevertheless matter to certain individual country’s ability to attract investment.

Few, if any, countries perform exactly as the models predict. Also, there are differences across models with cases of the same country being assigned above- and below-expectations outcomes by competing equations. In order to limit the analysis to a small number of relatively clear-cut cases the following delimitations were undertaken. First, countries are not counted as being below expectations unless their actual inward FDI position is at least 50 per cent lower than the model predictions. (The countries that perform below, and above, expectations according to this methodology are listed in Annex 3). Second, only countries that are assigned this status by at least two of the models are included. Seventeen countries stand out as having attracted *less* FDI than would have been expected. They are (the models assigning this status are indicated in parentheses):

- *Latin America and Caribbean.* El Salvador (GCI, IEF); Haiti (GCI, IEF, WBES); Peru (GCI, IC); Uruguay (GCI, IEF, WBES, IC).
- *Africa.* Algeria (GCI, IEF, WBES, IC); Burkina Faso (IEF, IC); Guinea (IEF, IC); Kenya (GCI, IEF, WBES, IC); Malawi (GCI, IEF, IC); Mauritania (IEF, IC); Mauritius (GCI, IEF).
- *Asia other than Former Soviet Union.* Bangladesh (GCI, IEF, WBES); India (GCI, IEF, WBES); Pakistan (IEF, IC); Turkey (GCI, IEF, WBES); United Arab Emirates (IEF, IC).
- *Transition countries.* Russia (GCI, IEF, WBES).

Again, it should be kept in mind that not all countries are included in all scoreboards, so the above list (of countries as well as of the scoreboards that name them as outliers) is almost certainly incomplete. Nevertheless, a few countries come out as “clearly underperforming” in the sense that they have attracted less FDI than predicted by all four models, namely Algeria, Kenya and Uruguay.

In principle, large outliers necessarily imply that certain explanatory variables have been omitted. The question is whether these are common to the outliers (or most of them) or specific to individual countries. The latter seems to be the case: following the economic exercises a number of intuitively appealing explanatory variables was tabulated against the “underperforming” countries. For instance, one might speculate that the countries in question have particularly strict FDI regulation in place, but according to indicators of the strictness of FDI rules (including the one embedded in the Index of Economic Freedom) this is not the case – and quite the opposite in the case of United Arab Emirates. The specific scoreboards (Corruption Perceptions Index, Opacity Index) also yield few insights, as do individual components of larger scoreboards such as WBES.

The countries listed above, and the aid agencies assisting them, need to consider what specific weaknesses in their investment climates may have caused their inward FDI to be so low. These countries’ foreign corporate presence apparently falls short of not only what their size and wealth might otherwise have attracted, but also what commonly used indicators predicts about their enabling environment. Consequently, they need not only to enhance their common performance indicators (like many other developing countries) but also to identify specific domestic challenges and take remedial action.

Twenty-four countries stand out as having attracted *more* FDI than would have been expected. They are (the models assigning this status are indicated in parentheses):

- *Latin America and Caribbean.* Argentina (GCI, IEF); Bolivia (GCI, IEF, WBES); Brazil (GCI, IEF, WBES); Ecuador (GCI, IEF, WBES); Jamaica (GCI, IEF); Nicaragua (GCI, IEF); Panama (GCI, IEF, WBES); Venezuela (IEF, IC).
- *Africa.* Chad (GCI, IEF); Congo (IEF, IC); Gambia (GCI, IEF, IC); Nigeria (GCI, IEF); South Africa (IEF, WBES); Togo (IEF, IC); Tunisia (GCI, IEF); Zambia (IEF, WBES, IC).
- *Asia other than Former Soviet Union.* China (GCI, IEF, WBES); Hong Kong-China (GCI, IEF); Indonesia (GCI, IEF); Malaysia (IEF, IC); Viet Nam (GCI, IEF, IC).
- *Transition countries.* Azerbaijan (IEF, WBES); Kazakhstan (IEF, WBES); Moldova (IEF, WBES).

These results need to be interpreted with some caution, since the middle-income Latin American countries appear to be overrepresented, and certain countries would seem to be on the list because the models have failed to fully capture the impact of their resource-richness on FDI. Nevertheless, aid agencies and developing countries are well advised to study the relative success of these countries – some of them comparatively small and poor – in creating an environment in which FDI exceeds the predictions.

IV. Summary and conclusions

The number of international business and investment climate scoreboards has grown at an impressive rate in recent years. However, this does not seem to imply that there is as yet much redundancy and overlapping between scoreboards. Existing scoreboards cover different grounds, *inter alia* because they aim at explaining different economic characteristics of host countries and operate at different levels of generality. The examples surveyed in this paper includes indicators of national competitiveness, freedom to do business, specific and general assessments of regulatory burdens and efforts to classify the investment climate overall. In addition, the chosen information basis (e.g. surveys versus verifiable data), methodology (aggregate indexes versus specific indicators) and geographic focus are so different that each of the scoreboards adds unique information.

For these reasons, it is difficult to check the consistency of scoreboards' ranking of individual countries. A general indicator (perceived "political stability") and a specific one (various indications of the "rule of law") were nevertheless compared across a few scoreboards. The main outcome was that the scoreboards appear to be consistent in their rankings of countries, but sometimes subject to some non-trivial outliers. Another finding was that the survey-based scoreboards seem to display a degree of country bias. When respondents are, say, sceptical about a given investment location they tend to give consistently low ratings to all the indicators of this country's investment climate.

Empirical models were estimated aiming to explain inward FDI positions in developing countries by means of basic macroeconomic variables and four of the investment scoreboards. The outcome was encouraging in the sense that the estimations confirmed conventional macroeconomic wisdom about the factors driving FDI, including a significant impact from elements of the four scoreboards. Some stylised findings are:

- Inward FDI into a given developing country is a function principally of its population size and its GDP per capita. The elasticity (percentage response to a given change) is in both cases 1, meaning that, say, a 10 per cent increase in GDP per capita is expected to lead to a 10 per cent increase in inward FDI stocks. Importantly, there appears to be no difference in impact across size and income categories. In other words, no developing country is "too small" or "too poor" to attract FDI.
- The use of investment scoreboards as explanatory variables gave mixed, but generally encouraging, results. As a rule, overall indices themselves perform poorly whereas each scoreboard contains sub-indices or individual indicators that contribute significantly to explain what countries have been more or less successful in attracting FDI. These include, according to equation, indicators of regulatory quality and restrictiveness, government intervention, macroeconomic stability and technological advancement
- The indicators of the quality of the investment climate are found to have a relative rather than an absolute effect on FDI positions. In other words an improvement, as quantified by the scoreboards, tends to increase inward FDI by a given percentage of the previous FDI stock. Thus, whilst all developing countries can increase FDI by enhancing their investment climate, the absolute changes will normally be greater in the countries that have a large foreign corporate presence at the outset.

Based on the models a couple of empirical exercises were undertaken. First, the estimated change in inward FDI was calculated for a small number of countries, assuming that their macroeconomic attributes stay the same but their scoreboard ratings are changing. The outcome is that the difference between present FDI performance and a scenario in which individual countries perform up to the best (according to the scoreboards) in all cases amounted to at least a doubling of inward FDI stocks. In the case of countries that are either particularly large or at present score particularly poorly, the benefits of enhancing their performance could be as high as ten times more FDI than at present.

Second, two groups of countries that according to the models have received inexplicably little, or explicable much FDI were identified. Even when allowing for the likelihood of missing variables, these countries merit the special attention of aid agencies and investment promoters. It would appear that those that perform lowly by this measure have either failed to properly convey the quality of their investment climate to potential investors, or face country-specific shortcomings that need to be addressed for them to reach their full potential as recipients of FDI.

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ANNEX 1

COUNTRY COVERAGE OF THE FOUR INVESTMENT SCOREBOARDS USED FOR EMPIRICAL ANALYSIS¹¹

Growth Competitiveness Index:

Algeria, Argentina, Bangladesh, Bolivia, Botswana, Brazil, Bulgaria, Cameroon, Chad, Chile, China, Colombia, Costa Rica, Croatia, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, Ethiopia, Gambia, Ghana, Guatemala, Haiti, Honduras, Hong Kong (China), India, Indonesia, Jamaica, Jordan, Kenya, Latvia, Lithuania, FYR Macedonia, Madagascar, Malawi, Malaysia, Mali, Mauritius, Morocco, Mozambique, Namibia, Nicaragua, Nigeria, Pakistan, Panama, Paraguay, Peru, Philippines, Romania, Russian Federation, Senegal, Serbia and Montenegro, South Africa, Sri Lanka, Tanzania, Thailand, Trinidad and Tobago, Tunisia, Turkey, Uganda, Ukraine, Uruguay, Venezuela, Viet Nam, Zambia, Zimbabwe.

Index of Economic Freedom

Albania, Algeria, Argentina, Armenia, Azerbaijan, Bahamas, Bahrain, Bangladesh, Belarus, Belize, Benin, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, Central African Republic, Chad, Chile, China, Colombia, Congo, Costa Rica, Côte d'Ivoire, Croatia, Djibouti, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, Ethiopia, Fiji, Gambia, Georgia, Ghana, Guatemala, Guinea, Guyana, Haiti, Honduras, Hong Kong (China), India, Indonesia, Iran, Jamaica, Jordan, Kazakhstan, Kenya, Kuwait, Kyrgyzstan, Laos, Latvia, Lebanon, Lithuania, FYR Macedonia, Madagascar, Malawi, Malaysia, Mali, Mauritania, Mauritius, Moldova, Mongolia, Morocco, Mozambique, Namibia, Nepal, Nicaragua, Niger, Nigeria, Oman, Pakistan, Panama, Paraguay, Peru, Philippines, Romania, Russian Federation, Rwanda, Saudi Arabia, Senegal, South Africa, Sri Lanka, Swaziland, Syrian Arab Republic, Tajikistan, Tanzania, Thailand, Togo, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Uganda, Ukraine, United Arab Emirates, Uruguay, Venezuela, Viet Nam, Yemen, Zambia, Zimbabwe.

World Business Environment Survey

Albania, Algeria, Armenia, Azerbaijan, Bangladesh, Belarus, Belize, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Cambodia, Cameroon, Chile, China, Colombia, Costa Rica, Côte d'Ivoire, Croatia, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, Ethiopia, Georgia, Ghana, Guatemala, Haiti, Honduras, India, Indonesia, Kazakhstan, Kenya, Kyrgyzstan, Lithuania, Madagascar, Malawi, Malaysia, Moldova, Namibia, Nicaragua, Nigeria, Pakistan, Panama, Peru, Philippines, Romania, Russian Federation, Senegal, South Africa, Tanzania, Thailand, Trinidad and Tobago, Tunisia, Turkey, Uganda, Ukraine, Uruguay, Venezuela, Zambia, Zimbabwe.

11 Only the countries that are included in the empirical estimations are listed. Countries that are not classified as “emerging economies” or for which essential data are not available have been excluded.

Investment Compass

Algeria, Argentina, Armenia, Bangladesh, Benin, Bolivia, Botswana, Brazil, Burkina Faso, Cameroon, Chile, Colombia, Congo, DR Congo, Côte d'Ivoire, Ecuador, Egypt, Ethiopia, Gambia, Ghana, Guinea, Guinea-Bissau, India, Iran, Kenya, Korea, Lebanon, Lesotho, Liberia, Malawi, Malaysia, Mali, Mauritania, Mauritius, Mexico, Morocco, Nepal, Niger, Nigeria, Pakistan, Paraguay, Peru, Saudi Arabia, Senegal, Singapore, South Africa, Sri Lanka, Tanzania, Thailand, Togo, Tunisia, Uganda, United Arab Emirates, Uruguay, Uzbekistan, Venezuela, Vietnam, Zambia.

ANNEX 2

ESTIMATION RESULTS

Table A1. Growth Competitiveness Index

	Investment scoreboard				Control variables										R-square
	GCI _{mac}	GCI _{tech}	GCI _{pub}	GCI _{pop}	Ln(POP)	Ln(GDPcap)	FUEL	METAL	FDIreg	LATdum	ASIAdum	AFRDum	Const.		
1	0.32 (1.3)	0.44 (1.7)	-0.06 (-0.4)		0.76 (8.8)	0.90 (5.3)	0.007 (1.6)	0.021 (3.0)	-0.067 (-0.5)	0.53 (2.1)	0.69 (1.9)	0.39 (1.4)	-13.4 (-7.1)	0.87	
2	0.68 (2.5)				0.77 (9.0)	0.91 (5.7)	0.008 (1.7)	0.022 (3.2)	-0.049 (-0.4)	0.52 (2.2)	0.64 (1.9)	0.34 (1.3)	-13.5 (-7.5)	0.87	
3	0.70 (2.6)				0.74 (8.6)	0.85 (5.3)		0.011 (2.6)	-0.075 (-0.6)	0.53 (2.2)	0.67 (1.9)	0.32 (1.2)	-12.6 (-7.0)	0.86	
4	0.63 (2.6)				0.80 (11.7)	0.89 (7.1)		0.009 (2.7)	-0.074 (-0.6)				-13.4 (-10.0)	0.85	
5	0.50 (2.4)				0.83 (12.5)	0.97 (8.4)		0.009 (2.6)	-0.072 (-0.6)				-13.9 (-10.4)	0.85	

Response variable: ln(FDIstock); 67 countries in sample; t-values in parentheses.

Table A2. Index of Economic Freedom

	Investment scoreboard				Control variables			R-square
	IEF	(IEF _{gi} +IEF _{pr} +IEF _{wp} +IEF _r)/4	Δ5IEF	Ln(POP)	Ln(GDPcap)	Const.		
1	0.45 (2.3)			0.92 (15.3)	0.97 (11.1)	-14.6 (-11.8)	0.77	
2		0.56 (3.4)		0.92 (16.1)	0.96 (12.2)	-14.8 (-12.4)	0.78	
3	0.50 (2.4)		-0.18 (-0.8)	0.91 (14.8)	0.94 (9.8)	-14.3 (-11.0)	0.77	

Response variable: ln(FDIstock); 108 countries in sample; t-values in parentheses.

Table A3. World Business Environment Survey

	Investment scoreboard						Control variables						R-square
	WBgotr	WBroen	WBrota	WBrola	WBpste	Ln(POP)	Ln(GDPcap)	FUEL	METAL	Const.			
1	-0.25 (-1.0)	0.47 (1.4)	-0.52 (-1.5)	-0.34 (-1.6)	-0.26 (-2.1)	0.80 (14.3)	1.02 (8.4)	0.013 (4.2)		-9.7 (-6.0)	0.88		
2	-0.53 (-3.5)	0.39 (1.2)		-0.38 (-1.80)	-0.27 (-2.1)	0.81 (14.4)	1.12 (11.4)	0.012 (3.9)		-11.0 (-7.7)	0.88		
3	-0.50 (-3.3)			-0.26 (-1.4)	-0.28 (-2.2)	0.83 (15.1)	1.12 (11.3)	0.012 (3.9)		-10.8 (-7.6)	0.88		
4			-0.56 (-2.6)		-0.31 (-2.4)	0.84 (15.8)	0.98 (9.9)	0.011 (3.6)		-10.3 (-6.6)	0.87		

Response variable: ln(FDistock); 63 countries in sample; t-values in parentheses.

Table A4. Investment Compass: Predictive power of the sub-indices

	IC1tot	IC2tot	IC3tot	IC4tot	IC5tot	IC6tot	Sub-1	Sub-2	Sub-3	AFRdum	LATdum	Const.	Obs.	R-square
1	0.091 (5.8)	0.006 (0.4)	-0.005 (-0.4)	0.016 (0.7)	-0.006 (-1.0)	0.037 (2.3)				0.30 (0.7)	0.48 (1.0)	2.73 (1.6)	58	0.72
2	X	0.001 (0.0)	-0.007 (-0.5)	0.012 (0.7)	-0.006 (-1.1)	0.036 (2.2)	0.067 (3.5)	0.005 (0.4)	0.036 (3.4)	0.59 (1.3)	0.67 (1.3)	2.87 (1.7)	58	0.74
3	0.090 (5.7)	X	-0.007 (-0.5)	0.024 (1.3)	-0.005 (-0.9)	0.037 (2.3)	0.010 (0.7)	-0.002 (-0.2)		0.33 (0.7)	0.57 (1.1)	2.51 (1.4)	58	0.72
4	0.111 (5.5)	0.001 (0.1)	X	0.016 (0.9)	-0.006 (-1.0)	0.051 (2.2)	-0.005 (-0.6)	-0.007 (-0.5)		0.47 (0.9)	0.23 (0.4)	2.06 (1.1)	52	0.77
5	0.091 (6.3)	0.024 (1.2)	-0.018 (-1.3)	X	-0.005 (-0.9)	0.026 (1.6)	0.015 (1.1)	-0.005 (-0.2)		0.45 (1.1)	0.58 (1.1)	4.30 (2.3)	52	0.79
6	0.095 (6.0)	0.001 (0.1)	-0.005 (-0.4)	0.009 (0.6)	-0.008 (-1.7)	X	-0.004 (-0.6)	0.048 (3.1)	0.050 (4.5)	0.65 (1.5)	1.09 (2.2)	-0.07 (-0.1)	51	0.85

Response variable: ln(FDistock); 58 countries in sample; t-values in parentheses.

Table A5. Investment Compass: Predictive power of individual variables

	IC11tot	IC12tot	IC13tot	IC62tot	IC63tot	IC41tot	AFRdum	LATdum	Const	Obs.	R-square
1	0.061 (3.6)	0.021 (1.8)	0.034 (4.1)	0.032 (2.5)	0.037 (3.2)		0.43 (1.3)	0.73 (1.7)	0.85 (0.8)	54	0.82
2	Ln(GDP)	0.022 (2.3)	0.031 (4.0)	0.029 (2.4)	0.026 (2.3)		0.54 (1.6)	0.57 (1.4)	2.00 (2.0)	54	0.85
	0.64 (4.9)										
3	Ln(GDP)	0.022 (2.4)	0.023 (2.6)	0.025 (2.2)	0.022 (2.1)	Unemployment	0.63 (2.0)	0.52 (1.4)	2.02 (2.1)	54	0.87
	0.62 (5.0)										

Response variable: ln(FDistock); 58 countries in sample; t-values in parentheses.

Figure A1: Actual and fitted value, GCI (Table A1, Equation 4)

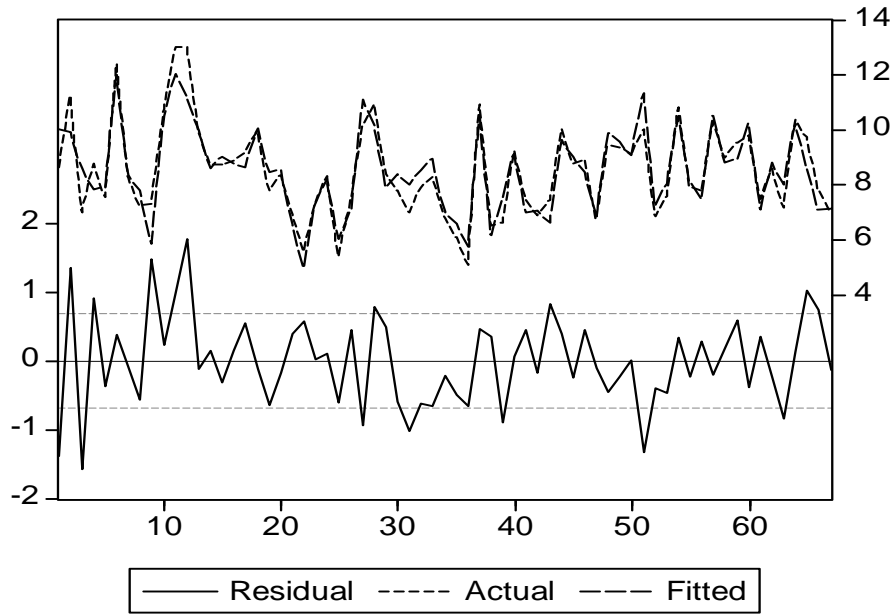


Figure A2: Actual and fitted value, IEF (Table A2, Equation 2)

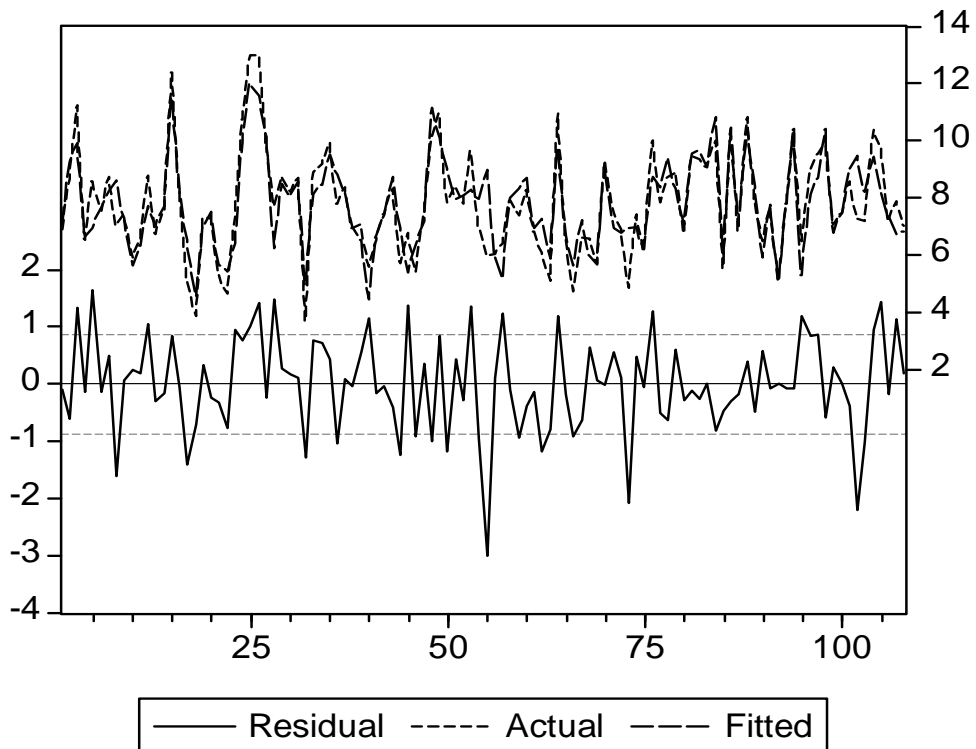


Figure A3: Actual and fitted value, WBES (Table A3, Equation 3)

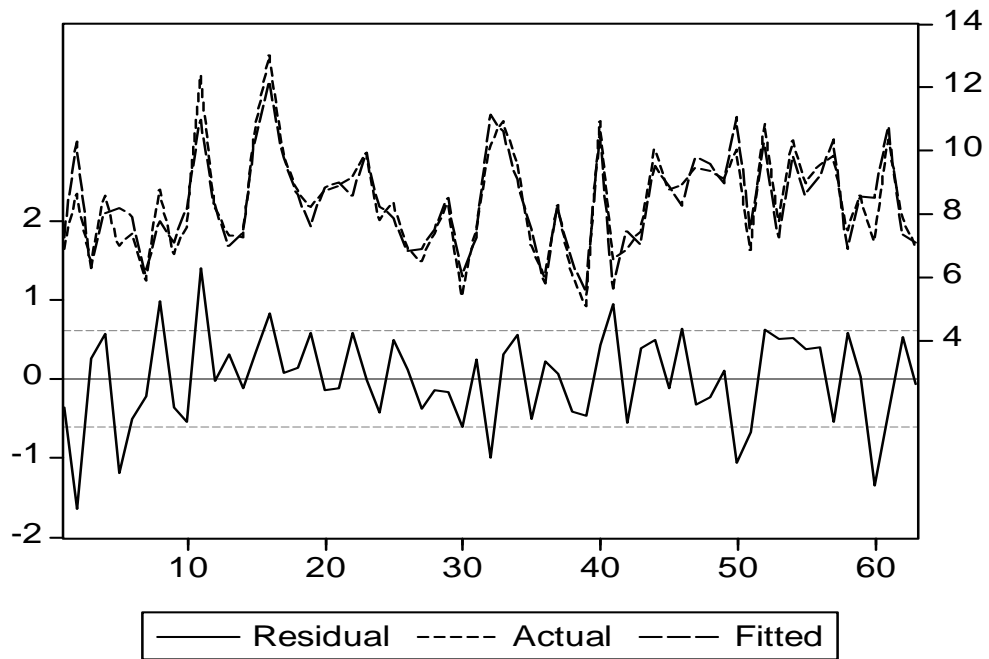
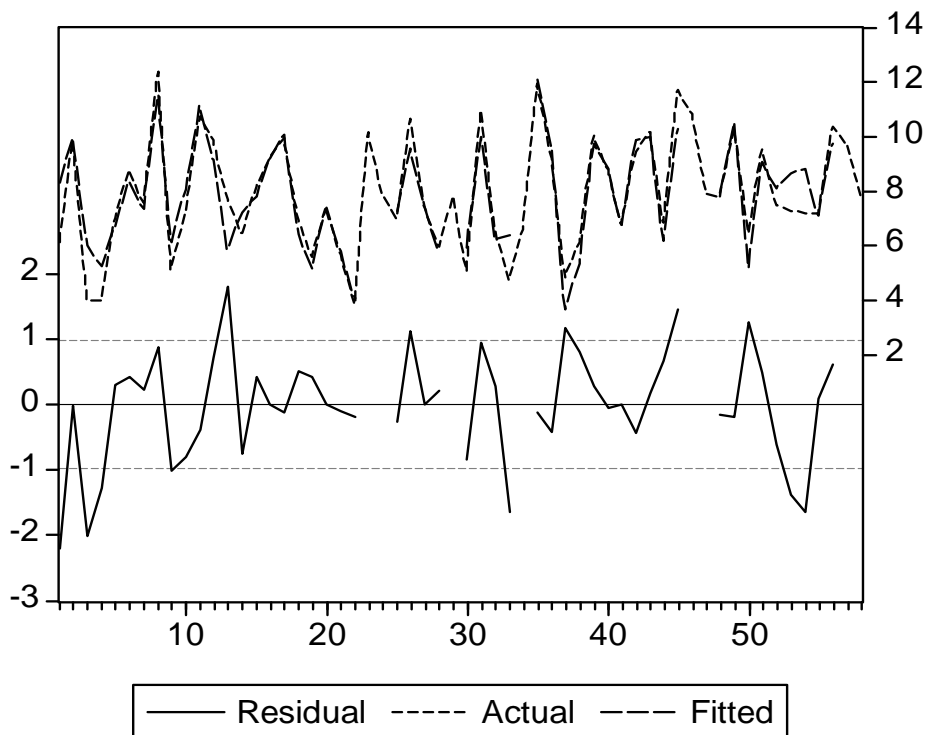


Figure A4: Actual and fitted value, Investment Compass (Table A5, Equation 4)



ANNEX 3

COUNTRIES THAT HAVE PERFORMED BETTER/WORSE THAN PREDICTED

Inward FDI stock more than 50 per cent below the estimated levels:

GCI	IEF	WBES	Investment Compass
Algeria	Algeria	Algeria	Algeria
Bangladesh	Bangladesh	Bangladesh	
		Belarus	
		Botswana	
	Burkina Faso		Burkina Faso
	Burundi		
	Central African Republic		Cameroon
			DR Congo
	Djibouti		
El Salvador	El Salvador		
	Guinea		Guinea
Haiti	Haiti	Haiti	
India	India	India	
	Iran		
Jordan			
Kenya	Kenya	Kenya	Kenya
	Kuwait		
Latvia			
Lithuania			
	Lebanon		
	Madagascar		
Malawi	Malawi		Malawi
	Mauritania		Mauritania
Mauritius	Mauritius		
		Namibia	
	Nepal		
	Pakistan		Pakistan
			Paraguay
Peru			Peru
Russian Federation	Russian Federation	Russian Federation	
		Senegal	
Turkey	Turkey	Turkey	
			Uganda
	United Arab Emirates		United Arab Emirates
Uruguay	Uruguay	Uruguay	Uruguay
			Uzbekistan

Inward FDI stock more than 50 per cent above the estimated levels:

GCI	IEF	WBES	Investment Compass
Argentina	Argentina		
	Azerbaijan	Azerbaijan	
	Bahrain		
Bolivia	Bolivia	Bolivia	
Brazil	Brazil	Brazil	
	Cambodia		
Chad	Chad		
	Chile		
China	China	China	
China, Hong Kong	China, Hong Kong		
	Congo		Congo
Ecuador	Ecuador	Ecuador	
Ethiopia			
	Fiji		
Gambia	Gambia		Gambia
	Guyana		
Indonesia	Indonesia		
Jamaica	Jamaica		
	Kazakhstan	Kazakhstan	
	Lao People's Dem. Rep.		
	Malaysia		Malaysia
			Mali
	Moldova	Moldova	
	Mozambique		
Nicaragua	Nicaragua		
			Niger
Nigeria	Nigeria		
			Senegal
Panama	Panama	Panama	
			Singapore
	South Africa	South Africa	
		Thailand	
	Togo		Togo
	Trinidad and Tobago		
Tunisia	Tunisia		
		Uganda	
	Venezuela		Venezuela
Viet Nam	Viet Nam		Viet Nam
	Zambia	Zambia	Zambia