

# Understanding and Improving Data on Entrepreneurship and Active Companies

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# Understanding and Improving Data on Entrepreneurship and Active Companies

## Executive Summary

Over the past several years, there has been a growing interest in reforms to improve company registries in developing and transition countries, with a major focus on legal and institutional reforms. In close association, researchers have been interested to use the databases created by company registries for purposes of statistical and economic analysis.

In this regard, the new World Bank “Entrepreneurship Database” is a very well-conceived, potentially very powerful new research tool to track a critical component of different economies - the number of formal firms (or "legal entities"), in 83 countries. The objective of this paper is to examine the quality of the data in the Entrepreneurship Database (which is being used increasingly in the World Bank Group for purposes of policy analysis and monitoring and evaluation), to identify the strengths and weaknesses of the data, and offer recommendations which may help, over time, to improve the quality of the data.

While other indicators have routinely been employed to measure the growth or strength of economies (most obviously GDP, GDP per capita, investment rates, employment rates, etc.), there has been growing interest in measures of "entrepreneurship" within an economy. The number of formal firms or legal entities can add a new dimension to the analysis of an economy. More firms, *ceteris paribus*, may be indicative of stronger competition within the economy, or enhanced prospects for division of labor.<sup>1</sup>

However, while it could be tempting to use this type of data for economic analysis and/or monitoring and evaluation of business environment reforms, without correcting for inherent problems in both the wide variety of the sources of the data and for the exit of inactive firms, it would be a serious disservice to WB/IFC credibility and the quality of monitoring and evaluation work moving forward. To accept the Entrepreneurship Database as a tool for economic analysis and for Monitoring and Evaluation of IFC “Business Enabling Environment” projects, more needs to be done to improve the underlying data.

While the current data available are problematic, we do see hope for improvement, which may allow for more reliable, robust and accurate analysis and comparisons in the future. However, such improvements will take investments of time and resources.

The first requirement should be to ensure consistent definitions across countries, (preferably using a harmonized business registry database design), and confine analysis to countries that

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<sup>1</sup> On the other hand, larger firms in an economy (which might imply relatively fewer firms) might also allow for greater economies of scale and thus improved efficiency.

are broadly similar in terms of the quality of the relevant statistical data (and perhaps also in terms of legal definitions and level of income).

As a second step, we would recommend targeted technical assistance to interested client governments in developing and transition countries aimed at improving the quality of the statistical data from the company and statistical registries. This would include the following elements:

- Design of a harmonized database for business registries for statistical purposes, with related registration procedures
- Improvement of the linkages between company registries, statistical agencies, and tax registries, to facilitate data sharing and updating of the core register;
- Clear legal definitions including which types of businesses are required to be registered and different legal categories (e.g., sole proprietors, LLCs, etc.)
- A requirement for periodic updating of information from companies listed in the company registry, with those not responding being moved to a category of “inactive” (but not necessarily removed from the registry entirely);
- Computerization (where practical) of Company Registries for ease of updating;
- Design of simple, user-friendly forms for company registration to facilitate development and maintenance of a sound statistical database (including simpler forms for periodic updating of information).
- Household surveys to estimate the size and composition of the informal sector
- A “quality assessment” approach to assessing business statistics, e.g., by using area business analysis methods, or business area sampling

Many of these measures could be incorporated into projects to create or upgrade Company Registries, or as a component of “statistical capacity building” to improve the quality of national statistics used for national accounts and economic analysis. Over time, such improvement in more countries, including the use of standardized definitions and templates for data on companies should yield an international database that can be used with much greater confidence for both economic analysis and for monitoring and evaluation purposes.

# 1. Introduction

Over the past several years, there has been a growing interest in reforms to improve company registries in developing and transition countries, with a major focus on legal and institutional reforms. In close association, researchers have been interested to use the databases created by company registries for purposes of statistical and economic analysis.

In this regard, the new World Bank “Entrepreneurship Database” is a very well-conceived, potentially very powerful new research tool to track a critical component of different economies - the number of formal firms (or "legal entities"), in 83 countries. The objective of this paper is to examine the quality of the data in the Entrepreneurship Database (which is being used increasingly in the World Bank Group for purposes of policy analysis and monitoring and evaluation), to identify the strengths and weaknesses of the data, and offer recommendations which may help, over time, to improve the quality of the data.

While other indicators have routinely been employed to measure the growth or strength of economies (most obviously GDP, GDP per capita, investment rates, employment rates, etc.), there has been growing interest in measures of "entrepreneurship" within an economy. The number of formal firms or legal entities can add a new dimension to the analysis of an economy. More firms, *ceteris paribus*, may be indicative of stronger competition within the economy, or enhanced prospects for division of labor.<sup>2</sup>

However, while it could be tempting to use this type of data for economic analysis and/or monitoring and evaluation of business environment reforms, without correcting for inherent problems in both the wide variety of the sources of the data and for the exit of inactive firms, it would be a serious disservice to WB/IFC credibility and the quality of monitoring and evaluation work moving forward. To accept the Entrepreneurship Database as a tool for economic analysis and for Monitoring and Evaluation of IFC “Business Enabling Environment” projects, more needs to be done to improve the underlying data.

The next section describes the relevant definitions and the existing literature on the subject. Chapter II discusses the existing data on entrepreneurship and its limitations. Chapter III discusses the implications of the use of data on entrepreneurship for economic analysis and monitoring and evaluation purposes. Chapter IV contains conclusions and recommendations for future efforts to improve the quality of the relevant data.

## **Background: Definitions and Literature**

One of the first problems we face is the need for clear and usable definitions for terms such as “enterprise” and “formal vs. informal”, and to establish the relevant methodologies for measurement.

The challenge here is that legal and administrative definitions and those used in economic and statistical literature differ from one another, and also vary widely across countries.

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<sup>2</sup> On the other hand, larger firms in an economy (which might imply relatively fewer firms) might also allow for greater economies of scale and thus improved efficiency.

Legal definitions focus on the rights and legal status of firms, which are important preconditions for formal or legal economic activity. The economic approach is important to understand how firms' economic decision-making and operations take place. It is in this context that the production factors first described by Schumpeter – land, capital, labor and entrepreneurship – are combined in order to generate value-added.

Generally, there is a separate literature focusing primarily on “formal” firms and another body of literature focusing more on “informal” firms, but even these basic terms are often unclear. The broadest definition of “formal” enterprises might be those with at least some recognition by some governmental body, at any level (e.g., a municipal administration). In a more narrow sense “informal firms” refer to production units (mostly in the non-agricultural sector) that are not registered with the relevant authorities, for a wide range of reasons. For this reason the informal sector will differ from country to country, because of different rules and systems for registration of units.

This paper will have more of a focus on “formal” firms and in particular legally-recognized and registered firms, as described in recent World Bank reports. Most relevant would be Klapper, et. al., “Entrepreneurship and Firm Formation Across Countries” (2007).<sup>3</sup> Their definition of the “unit of measurement of entrepreneurship” is:

*Any economic unit of the formal sector incorporated as a legal entity and registered in a public registry, which is capable, in its own right, of incurring liabilities and of engaging in economic activities and transactions with other entities.*

This definition is clearly one based on legal status and the fact of registration, and measurement of it does not necessarily say anything about whether the firm is economically active.<sup>4</sup> It could be, for example a “shell company” created by a law firm, waiting for a client to put it to active use, or a company that had once existed as a meaningful economic agent, producing and selling goods or services, but later went defunct and never de-registered. This concept is more legalistic than economic in its nature.

The above definition also excludes the informal sector, presumably on the grounds that useful data are unavailable on that sector, to maintain some degree of consistency in definitions that can be used for cross-country comparisons, and to ensure a focus on entrepreneurship that is generally abiding by the laws and regulations of the country within which it operates. However, if we are interested in the economic activity of firms (e.g., production and sale of goods and services, employment, etc.), then we should also be looking at the informal sector (for more on the informal sector, see below). This is especially relevant for developing countries where most units are informal and most entrepreneurship is informal.

Practitioners and researchers hope to show that improving the business enabling environment helps facilitate new business formation and the formalization of informal firms, as was originally suggested in *The Regulation of Entry* (Djankov et al, 2002). The hope is both to measure the impact of reforms to company registration and related procedures (e.g., the Doing Business indicators for “starting a business”) and to measure indirect impacts of other reforms intended to improve the business enabling environment.

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<sup>3</sup> Klapper, Leora, et. Al., World Bank Policy Research Working Paper no. 4313.

<sup>4</sup> Alternative definitions can be found in Section IV and in the various Case Studies in Annex 3.

New formal firms are expected to invest more, expand output and provide new employment opportunities as has been shown in Canada (Baldwin and Picot, 1995), India (Besley and Burgess, 2004), Italy (Viviano, 2006), Mexico (Bruhn, 2008) and Sweden (Davidsson et al, 1998). These increases in turn appear to lead to higher economic growth. Djankov et al (2006) use the Doing Business data to show countries in the best quartile of the business regulations grow 2.3 percentage points faster than those in the worse quartile.

Growth in the number of firms is also valued as an indicator of improved competition in an economy (see *Doing Business 2007*). Any economy where there are large and growing numbers of new firms may be distinguished, say, from an economy that may have relatively high rates of investment and economic growth but is dominated by a relatively small number of long-established, large firms. Competition is expected not only to help keep prices lower (Bruhn, 2008), but start-ups are expected to be more innovative than older firms (Porter, 1990) not only in terms of technology (Ruttan, 1997), but also in terms of marketing and management (Nickell, 1996).

The literature recognizes a “demography” of firms, knowing that many new firms (“births”) fail to survive, and even older firms may close, go bankrupt, or be acquired by other firms. Theoretical models of firm entry and exit were originally done by Joyanovich (1982) and Hopenhayen (1992) which emphasize the importance of incorporating firm dynamics - entry *and* exit - as the rate at which firms “die” measures both the competitive nature of the local market and the potential advantage incumbents may have. However, up to this point, good empirical analysis of entrepreneurship incorporating both entry and exit has been limited, especially in developing and transition countries.

A first strand of empirical research on firm entry and exit has shown rapid entry rates tend to be associated with rapid exit rates (Dunne et al, 1989). Case specific research done in the US has shown that the likelihood that a firm closes declines with age as well as with industry, size and location (Nucci, 1999). The “life expectancy” of a new firm in the United States was about 4.7 years.<sup>5</sup> For firms that were “autonomous establishments” (i.e., not subsidiaries of an established firm), the survival rates were even lower, with barely 40% surviving to an age of five years.<sup>6</sup>

Bartelsman et. al. (2004) found “post entry performance” differing significantly between Europe and the US, with Argentina resembling continental Europe more than the US. They reiterated that death among firms is, of course, not necessarily a bad thing, as “a large fraction of total factor productivity and labor productivity growth at the industry level is accounted for by the reallocation of outputs and inputs from less productive to more productive businesses.” Meanwhile, research done in Europe using data on corporate activity in 33 European countries from 1997 to 1998, shows that greater fairness (i.e., a more level playing field) and greater protection of property rights are associated with increased firm entry rates, and reduced firm exit rates (Desai et al, 2003).

Regarding informal firms in developing countries, the literature mostly refers to the small units that offer services or goods from households or shops on the streets without permitted building structures, or to mobile traders (e.g., who just walk the streets). Of

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<sup>5</sup> Nunci, Alfred, “The Demography of Business Closings,” in *Small Business Economics* 12: 25-39, 1999; note these were firms with a payroll, and thus excluded self-employment and most sole proprietorships.

<sup>6</sup> Ibid



course, informality may have many aspects, including non-compliance with any of a number of different formal requirements such as:

- Company registration
- Tax registration
- Payroll registration
- Municipal permits
- Operating licenses

The ILO considers it too difficult to find and apply agreed criteria to identify these units. They therefore for operational reasons accept the outcomes of the Delhi City Group and have agreed to consider all small units of 5 and less workers as being informal.<sup>7</sup> If we would apply this criterion, many firms in the developed countries would be defined as being informal, which could be misleading. In developed countries, there are relatively fewer businesses which are informal in the sense of being unrecognized by any government body, although there is often still a significant problem of “informal economic activity” such as unrecorded employment or revenue (including in-kind and barter transactions, e.g., see Schneider, 2004). Unrecorded revenue is defined as a form of underreporting by enterprises for all kinds of reasons. Unrecorded employment can be defined as employees without a proper legal (written) contract.

The work of Mr. Schneider (2004) may in some respects be misleading for purposes of international comparison, as his definition includes tax evasion, tax evading labor inputs, and do-it-yourself activities.

## **2. Data on Entrepreneurship and its limitations**

There are a number of different sources of data about companies in countries around the world, including company registries, tax registries, statistical registries and others, at various levels of government, following different legal traditions and different administrative procedures.

The Entrepreneurship Database (ED) has made a heroic attempt to consolidate such information across over 80 countries, but it exhibits a number of problems for our efforts to compare data across countries or even within a country over time. First we can look at the data sources and we see that of the 83 countries, in about 19 of them statistical registers are used, and the rest is a combination of administrative sources and legal sources. This mix of sources suggests that the units that are registered differ in type and definition.

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<sup>7</sup> Measuring the Non-Observed Economy, A Handbook, OECD, IMF, ILO, CIS Stat, 2002, Chapter 10, pages 159-177. and Hussmanns, Ralf, "Statistical definition of informal employment: Guidelines endorsed by the Seventeenth International Conference on Labour Statisticians (2003)", 7th Meeting of the Expert Group on Informal Sector Statistics, New Delhi, 2-4 February 2004

The biggest problem however, is a fundamental inconsistency in what might be called “gross” vs. “net” company formation. If we continue with the analogy with population demographics mentioned above, some countries in the database are clearly taking into account both “births” and “deaths” in the figures for the “total population” while others appear to use “births” only.

Specific examples of such inconsistencies are as follows:

Using the Entrepreneurship Database data from 2002-2005, we were able to calculate the implicit number of de-registrations for each country being included in the database. We calculate the implicit de-registrations by:

$$(TotalCorporations_t - TotalCorporation_{t-1}) - (NewCorporations_t)$$

Because the Entrepreneurship Database only has four years of data, this calculation is only possible for three years (2003-2005).

A number of countries in the ED (data for 2002 – 2005, See Annex 1) are apparently counting ONLY "new corporations" to obtain the change in each year's "total corporations", for example Botswana<sup>8</sup>:

Country	Year	Region	Total Corporations	New Corporations	Implicit De-registrations	Ratio new/total	Ratio de-reg./total
Botswana	2002	AFR	54,611	5,262		9.6%	
Botswana	2003	AFR	62,385	7,774	0	12.5%	0.0%
Botswana	2004	AFR	72,242	9,857	0	13.6%	0.0%
Botswana	2005	AFR	79,543	7,301	0	9.2%	0.0%

The same pattern can be seen for the following countries in the Entrepreneurship Database:

Congo, Rep.  
 Georgia  
 Jordan  
 Latvia  
 Lithuania<sup>9</sup>  
 Madagascar<sup>10</sup>  
 Malta  
 Morocco  
 Sri Lanka

In the case of Latvia, the Entrepreneurship Database used data from the Ministry of Justice<sup>11</sup>, rather than the Company Registry itself, which has very detailed data on both

<sup>8</sup> First 5 columns: Entrepreneurship Database, last 3 columns calculated by authors.

<sup>9</sup> Except in 2004, when there were 81 implicit de-registrations (less than 0.1% of total corporations)

<sup>10</sup> In each year there were less than 25 implicit de-registrations, (less than 0.1% of total corporations)

<sup>11</sup> Klapper, et. al., 2007, Annex 1.

entry and exit as well as other changes in legal status (for details, see Annex 2, Case Studies).

By contrast, all the "developed countries" in the Entrepreneurship Database (and some developing countries) implicitly include de-registrations in their figures for "total corporations".<sup>12</sup> A good example is Finland<sup>13</sup>:

Country	Year	Region	Total Corporations	New Corporations	Implicit De-registrations	Ratio new/total	Ratio de-reg./total
Finland	2002	DEV	112,106	7,226		6.4%	
Finland	2003	DEV	112,682	7,011	6,435	6.2%	5.7%
Finland	2004	DEV	112,734	7,424	7,372	6.6%	6.5%
Finland	2005	DEV	114,061	7,710	6,383	6.8%	5.6%

Most of the Northern and Western European countries (and the US and Japan) show relatively high rates of "deaths" (implicit de-registrations), usually over 4 - 5% of "total corporations" each year (up to about 15% as in Germany and Norway; and 8 - 11% in UK/US).

Similarly, we see quite stable/consistent patterns in the developed countries of "births" versus "deaths", with births usually running about 30% to 70% higher than deaths.<sup>14</sup>

Other countries' data look frankly very confusing. Algeria, for example, has some years with "total corporations" higher than the previous year's "total" plus "new corporations":

Country	Year	Region	Total Corporations	New Corporations	Implicit De-registrations	Ratio new/total	Ratio de-reg./total
Algeria	2002	AFR	69,692	13,770		19.8%	
Algeria	2003	AFR	79,908	10,123	-93	12.7%	-0.1%
Algeria	2004	AFR	92,930	12,494	-528	13.4%	-0.6%
Algeria	2005	AFR	103,482	12,164	1,612	11.8%	1.6%

Some of this might be due to large firms re-registering as multiple entities (to gain a better tax status or relief from labor legislation), but it might also be evidence of poor quality data. Other countries showing higher increases in "total corporations" than can be accounted for by "new corporations" in at least one year include the following:

Albania  
Bangladesh  
Bosnia

<sup>12</sup> We note, however, there is one negative figure, i.e., an increase in the "total corporations" greater than could be accounted for by "new corporations" - in Canada for one year.

<sup>13</sup> First 5 columns: Entrepreneurship Database, last 3 columns calculated by authors.

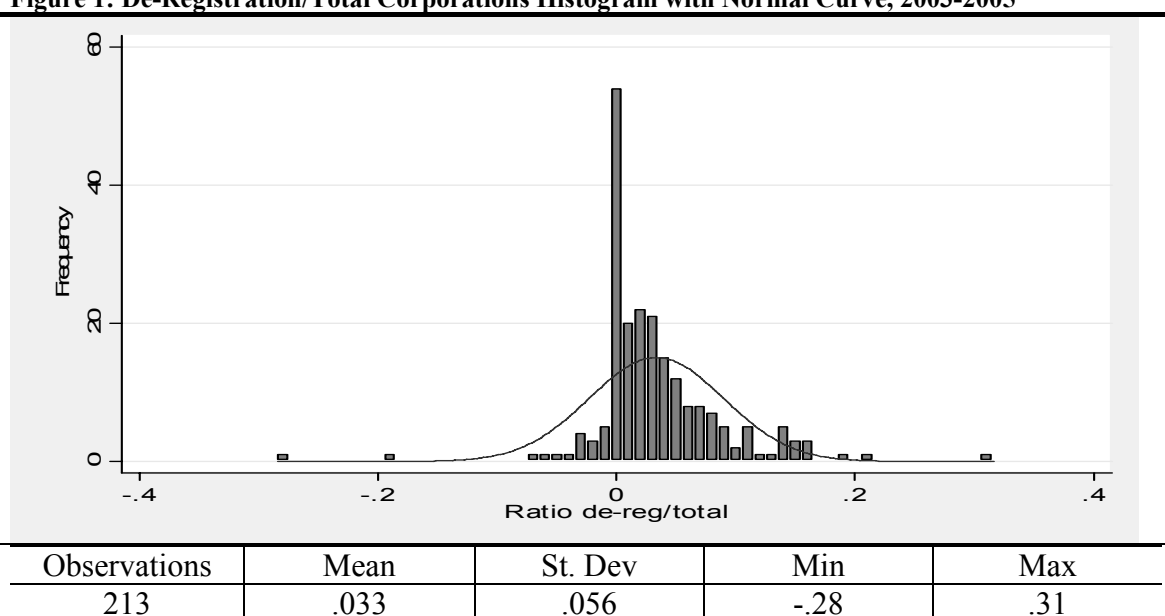
<sup>14</sup> Exceptions, where births are more than double the rate for deaths (for more than a single year, according to the data) include Australia, Greece, Iceland, New Zealand, and Spain (these countries also show less than 4% deaths/total corporations). This may be indicative either of flawed data or (given the short number of years for which data is available) may be driven by business cycle fluctuations.

Canada<sup>15</sup>  
 Ghana  
 Iceland<sup>16</sup>  
 India  
 Indonesia  
 Kenya  
 Senegal  
 Serbia  
 Slovakia  
 Slovenia  
 Tunisia

Finally we can see that most of the developing countries (including those in the list above) show very low ratios of implicit de-registrations to "total corporations" (e.g., less than 1%), while "new corporations" are often over 8 - 15% of "total corporations". Thus, their figures for "total corporations" seem to be getting progressively more inflated every year.

The resulting distribution of the ratio of implicit de-registrations to total corporations (a ratio is used to normalize the distribution) for the full database is shown in Figure 1:

**Figure 1: De-Registration/Total Corporations Histogram with Normal Curve, 2003-2005**



Source: World Bank Entrepreneurship Database 2007

While one might expect a significant positive level of firm de-registration/exit across countries, Figure 1 based on the Entrepreneurship data suggests otherwise – it presents a central tendency around or close to zero for the ratio of implicit de-registrations to total corporations. There is a mean ratio in the data of only 3.3 percent of total corporations de-registering per annum, suggesting a survival rate of 96.7 percent per annum. If we were to project this number out over five years it would imply that roughly 85 percent of new firms would still be in operation five years after beginning operation, a dramatically

<sup>15</sup> One year only

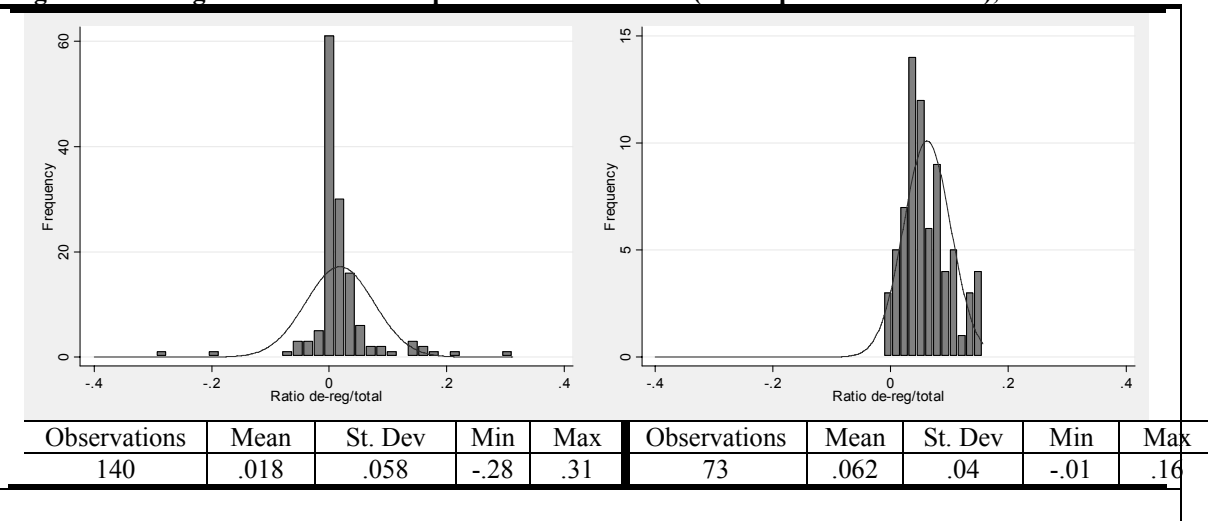
<sup>16</sup> One year only

higher number that Nucci found for the United States in 1999: a survival rate of about 40 percent (noted above).

When we disaggregate the ratio by level of economic development, and compare the implicit de-registrations of developed countries with the low and middle income countries of the world in the Entrepreneurship data, we can see the problem probably is in the quality of the data from the business registries of the poorer countries.

In Figure 2 on the left hand side we can see that for the developing and transition economies in the dataset, the mean ratio of de-registrations to total corporations is 1.8 percent implying that after five years roughly 92 percent of firms which register are still listed in the relevant registry. To assume they are all economically active seems hardly plausible, given our understanding of actual firm demography in developing and transition economies. For example, Bartelsman et. al. found: “Looking at cross-country differences in survivor rates, about 10% (Slovenia) to more than 30% (Mexico) of entering firms fail within the first two years.” (Bartelsman et. al., 2004, pg. 23).

**Figure 2: De-Registrations/Total Corporations Distribution (Developed vs. All Others), 2003-2005**



Source: World Bank Entrepreneurship Database 2007

Supporting this conjecture, Figure 2 on the right hand side also shows the ratio of de-registration to total corporations for the 73 observations in the developed countries. What we see is that the distribution is centered well to the right of zero – very logical since we should expect a natural rate of firms exiting - and the mean ratio is 6.2 percent implying a survival rate of 93.8 percent per annum or that up to 70 percent of new firms survive for five years or longer (which still may be a reflection of a lag in the recording of “exit” data, and/or the up-side of a business cycle).

A clear conclusion from this analysis is that in the current entrepreneurship database there is very little implied de-registration in most developing and transition economies, suggesting that either de-registrations are either (i) not being counted or (ii) miscounted.

Why is this happening? An example might be the experience of Madagascar.

In the case of Madagascar, the INSTAT statistical registry (the main company registry for the country) had a total of just over 500,000 “created” firms as of 2007, and a little over 16,000 de-registrations (“annulations uniquement”). After requiring legal re-registration

that year, and removing firms that failed to register or to object to being removed from the registry, the total number of firms was reduced to less than 104,000. Even for *Societe a Responsabilite Limetee* (S.A.R.L., roughly equivalent to limited liability companies), the totals fell from 19,938 to 6226.<sup>17</sup> Thus before the re-registration exercise, it is clear the data for corporations in Madagascar were polluted with corpses.

Correcting for the exit of formal or legally-recognized firms in the data of most developing and transition countries in the ED would thus probably reduce the figures of “total firms” and all related calculations (e.g., “density”).

On the other hand, these countries are, by most accounts, missing data regarding the informal sector, although there is no reason to believe that the overstatement of formal firms in the data is balanced by informal sector firms.

For this reason, cross-country comparisons using “total corporations” (aside perhaps from those confined only to data from developed countries) are clearly invalid. The World Bank “Entrepreneurship and Firm Formation” paper notes explicitly that:

... although approximately 80% of surveyed countries require businesses to report closures, a significantly lower number were actually able to report the number of closed businesses mainly due to the fact that the registrars generally have no enforcement mechanisms to obligate businesses to report closures. ...<sup>18</sup>

What does this imply?

A direct conclusion from the above analysis is that researchers and WB/IFC should be extremely cautious to use the ED “total company” data for any sort of analytical work of the business environment in developing and transition countries until the inherent limitations in the data are addressed. Not only would it not be right to infer causality from doing cross-country correlations as was suggested by Klapper et. al “Although we find significant relationships with these measures – i.e. more dynamic economies in countries with better business environments – we cannot postulate on the direction of causality.”<sup>19</sup> In addition, we also need be cautious about the results of the original theoretical suggestions from the cross-country correlations (for examples, pls see Annex 2, below).

In fact, the data on the developed countries in the Entrepreneurship Database also shows anomalies. The number of units on the Netherlands is clearly not about the active units. That number is about 20% less.<sup>20</sup> Germany appears to have half of the units registered (in terms of “density” or the ratio of total companies to working age population) compared with the Netherlands. The number of units per 1000 inhabitants of the US is half that of Russia and Serbia, with the implication that the entrepreneurship in the US is half that of Russia or Serbia. Changes in tax treatment of natural vs. juridical persons can drive “company formation” in the form of employees leaving an employer, forming a company, and returning to their former employer as a full time “contractor.”

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<sup>17</sup> Madagascar INSTAT printout out; the data in the ED for Madagascar appears to be those for SARL, reporting 19,305 “Total Corporations” in 2005.

<sup>18</sup> Klapper, et. al., op. cite., pp 13 – 14.

<sup>19</sup> Klapper et. Al, p. 18

<sup>20</sup> See Annex 3, Case Studies

Some case studies can shed more light on data availability and data quality for Ukraine, Latvia, Macedonia, Peru, South Africa, and several African countries (See Annex 3, below). While it might be possible to argue that firm survival rates might be higher on average in developing countries than developed countries (e.g., if cumbersome bureaucratic requirements or high costs deter all but the “strongest” entrepreneurs from starting formal firms and therefore they are more likely to survive) the examination of the data from the case studies (and the Madagascar example cited above) suggests otherwise. Ideally, we would like to look at detailed and accurate entry and exit data to infer “age specific mortality rates” over a full business cycle before drawing any firm conclusions.

### **3. Implications for use of data on entrepreneurship**

Analysis of the Entrepreneurship Database and alternative sources of data suggests that while the data on “legal entities” for most developed countries appears reasonably sound, the data for the majority of developing and transition countries shows evidence of an upward bias, due primarily to the failure to de-register firms that have exited the market and effectively ceased to exist.

If the data for developing and transition countries were corrected, “total corporations” would probably be significantly lower in most cases. By extension, the estimated “density” of firms (i.e., ratio of total corporations to working-age population) would probably be lower in most developing and transition countries because the numerator should be lower, while the “rate of new company formation” (i.e., the ratio of new corporations over total corporations) might be higher because the denominator should be lower.

The direction of the bias in the numbers of legal entities (as opposed to active entities) is quite clear: most data on “total corporations” from developing and transition countries is overstated. The next question one might ask is what is the magnitude of the bias? This is much more difficult to assess. Data from a few middle-income countries (e.g., Latvia, Peru and S. Africa) suggests that data from company registries might be roughly double the number of active legal entities. However, as suggested in the previous section, the experience of Madagascar (a low-income country) suggests the magnitude of the bias might be a function of the age of the registry (or number of years since a serious effort to require re-registration of active firms). In the case of Madagascar, the overall number of firms in the INSTAT database fell by almost four/fifths after its re-registration exercise and even the number of limited liability companies (presumably more solidly established than sole proprietorships) fell by over two-thirds.

However, if we are interested primarily in the economic activity of firms (as opposed to legal entities), we should also be interested in estimates of the number of informal firms, but estimates of the size and composition of the informal sectors of developing and transition countries faces even greater challenges than those plaguing company registries.

Another serious concern is the use of the Entrepreneurship Database for purposes of monitoring and evaluation. While the number of “new registrations” may be reasonably reliable on its own, any use of “total numbers of firms” is plagued by the problem of inflated numbers due to the accumulation of “dead firms” in the registry over time.

Thus both the “density of firms” and the “rate of new firm creation” yield serious data quality problems. For example, suppose someone tried to monitor the impact of reforms in Madagascar over the period 2006 – 2008: While the numbers of newly registered firms might be useful, any effort to use the total number of firms, the “density of firms” or the “rate of new company formation” would find (even if the true situation were improving) a major decline in the data from almost 20,000 LLCs to just over 6,000, because the company registry went through an exercise that purged dead firms from the data. The box below about Ukraine provides another example.

In Ukraine, regulatory barriers to exit have resulted in a considerable number of businesses, which are not active, but are still in the business registrar. This backlog of inactive enterprises in Ukraine (40% of all registered enterprises) thus hampers accurate tracking of business entry and growth rates and means that officially reported figures do not adequately reflect the true entrepreneurship picture. This means that the World Bank Group Entrepreneurship Database (WBG ED), while being the most comprehensive cross country firm entry dataset, provides information that does not accurately reflect business development in Ukraine.

Not filtering out the “inactive but still registered” businesses means that the overall number of enterprises, and their density per 1,000 population, is overestimated. This is compounded by differences in definitions of enterprise that further contribute to make entrepreneurship in Ukraine appear more developed than it really is. At the same time, it means that the growth rate is substantially underestimated, making Ukrainian business look less dynamic than it is.

IFC Ukraine BEE project estimates that the actual development of business in Ukraine in 2005-2006 was as follows:

- Average entry rate was 7.1% – vs. 5.9% according to WBG ED
- Average annual growth rate in active enterprises was 7.1% – vs. 4.3% according to WBG ED
- The 1-year survival rate for Ukraine was 91% and the 2-year survival rate was 81%.

Source: Annex 3

How would the data appear in an evaluation of a project? The actual impact of reforms to improve the investment climate may be positive, but if data have recently been corrected and purged of “dead firms”, the indicator may appear negative. Comparing a project in Madagascar with a similar project in a country that did not improve its statistics would be misleading. And worst of all, the temptation might be for donor-financed projects to avoid improving company statistics (or even discourage it or lobby for a “low priority” for such an exercise) because it might not look as good as the situation with flawed data.

A project that reduced barriers to entry might encourage new business formation and/or the formalization of informal firms, but we need to understand the longer-term dynamics: whether the new firms are as viable, on average, as those that formed earlier; whether new firms are displacing the market share of older firms, and ultimately whether the hoped-for impacts of increased value-added, employment opportunities and greater consumer choice



are being realized. An IFC project in Lima, Peru, which reduced entry barriers, clearly led to an increase in numbers of new firms registering, but the project is using “tracer studies” of the long-term impact on a representative sample of the new firms in order to gain a better understanding of such dynamics.

For Latvia, someone trying to show more impressive results might be tempted to use the data in the Enterprise Database (based on data from the Ministry of Justice and excluding any “exits”) because it shows higher numbers of “total corporations” than the more accurate data from the Company Registry and the Statistical Registry. Of course, as noted above for Ukraine, the “entry rate” using correct data would be higher than figures derived from the Entrepreneurship Database. Thus, robust M&E efforts should include an effort to obtain accurate data on active companies, or to correct for the distortions caused by the inclusion of inactive firms in the data.

## 4. Conclusions and Recommendations

The idea of a WB database of enterprises is very useful and the motivations for creating one are clear. However, it is also apparent from inspection that the current data available in the ED are problematic. The ED needs improvement, to allow for more reliable, robust and accurate analysis and comparisons in the future. Moreover, to realize useful improvements in the ED, it will take necessary investments of time and resources.

One idea considered was to obtain data on numbers of formal, “active” companies from tax registries, in cooperation with the IMF and OECD. Tax authorities should be able to see which companies have been filing regularly (including those reporting positive income, expenses, or payroll activity). Unfortunately, experience has shown that the tax authorities in most lower-income countries are not yet inclined to cooperate. While the tax authorities in Latvia routinely share their data with the national statistical agency, those in Macedonia and South Africa have barely begun the process of cooperation on company statistics, and the relationship between the tax authorities and the statistical agency in Peru has reportedly been inconsistent over the past few years.

Thus, an important first step to improve ED will be to encourage and support building these critical relationships over time. When the tax authorities are not willing to cooperate other national institutions may be considered. Also more research should be done for the proper understanding of the reasons of this lack of cooperation.

Another important step in the process to improve ED data quality should be to ensure consistent definitions across countries, (the only real solution would be to use a harmonized business registry database design), and confine analysis to countries that are broadly similar in terms of the quality of the relevant statistical data (and perhaps also in terms of legal status and size). As an example, EU regulations require harmonization of “statistical business registers” in large part to ensure a standard level of data quality “particularly as regards comparability.”<sup>21</sup>

Finally, we would recommend targeted technical assistance to interested client governments in developing and transition countries aimed at improving the quality of the

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<sup>21</sup> Eurostat/OECD “Manual on Business Demography Statistics”, 2007Ibid., pg. 11.

statistical data from the company and statistical registries. This would include the following elements:

- Clear legal definitions including which types of businesses are required to be registered and different legal categories (e.g., sole proprietors, LLCs, etc.)
- Design of a harmonized database for business registries for statistical purposes
- Improving the linkages between company registries, statistical agencies, and tax registries, to facilitate data sharing and updating of the core register;
- A requirement for periodic updating of information from companies listed in the company registry, with those not responding being moved to a category of “inactive” (but not necessarily removed from the registry entirely);
- Encouraging computerization of Company Registries for ease of updating;
- Design of forms for company registration to facilitate development and maintenance of a sound statistical database (including simpler forms for periodic updating of information).

## Definitions

The difference in definitions are important for statisticians and economists, as well as for lawyers, as they affect the way we measure entrepreneurship, and can impact our ability to compare entrepreneurship and business activity across countries. Below is brief discussion of some of the definitional challenges the ED faces and some potential ways forward.

In discussions about the definitions, the core question is; what is a “business” or an “enterprise”?<sup>22</sup> This may be a complicated question in the face of informality (common in developing countries) and various complex “group holdings” (more typically found in developed countries). An enterprise can be defined from the legal perspective as a legal unit, from the administrative perspective as a registered unit, and from the statistical perspective as a statistical unit.

Legal units are defined on the basis of an existing legal classification (types) of units (e.g., “sole proprietor” or “Limited Liability Company”), and can be active or not active. Administrative units can be defined on the basis of the existing registration in a country, or a combination of registrations, provided that double entries are eliminated; they can also be active or not active. Statistical units can be defined according to the types of statistical unit: the enterprise, the kind of activity unit and the local unit; they can also be classified as “active” or “inactive” and units can move back and forth between these two categories depending on the definitions used (e.g., providing financial statements or filing for taxes on a stipulated, regular basis).

Eurostat offers the following definition for a “statistical unit”:

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<sup>22</sup> “Enterprises” are commonly understood as production units. Production units are all those units that produce good and/or services for a market (and may also produce market equivalents for own consumption). Production units that only produce for own consumption or that do not enter the market are generally not thought of as enterprises.

The enterprise is the smallest combination of legal units that is an organizational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations. An enterprise may be a sole legal unit.”<sup>23</sup>

Eurostat has guidelines on the use of primary sources, including tax registers, “compulsory registration systems (e.g., for limited liability businesses or those quoted on stock markets), social security sources and other public or private sector data holdings.” They note that duplication and mapping of different data sources referring to the same enterprise need to be synthesized.<sup>24</sup> They define the population of “active enterprises ... [as] all enterprises that had either turnover or employment at any time during the reference period.”<sup>25</sup>

An example of good practice is Latvia, where the statistical registry draws data from the company registry, the tax registry, and the employment registry (with all firms using a “unique number” for all government interactions and reporting requirements). If a firm has not filed for taxes, or files showing no turnover and no employment for two years, it is moved to a category called “inactive.”

South Africa on the other hand provides an example of the reality of most low-middle income countries where, the company registry is computerized, but not yet fully harmonized with the statistical and tax registries. It’s neighbor, Namibia has a requirement for updating company information in order to stay fully registered, but has not yet computerized its database so has not yet been able to update it. Both cases show examples of why it is difficult to know if a firm is active or not in many low-middle income countries.

Eurostat is also very specific about definition whether an enterprise is active or not. They define the population of “active enterprises ... [as] all enterprises that had either turnover or employment at any time during the reference period.”<sup>26</sup> This distinction is critically important if we are using data for economic analysis. If one wants to understand the actual economic and entrepreneurial activity in a country it is relevant to know how many of the registered units are active (versus, e.g. a shell company or a tax vehicle or a dead firm). This point was made clear by Bartelsman et. al (2004), “... in all countries net entry (entry minus exit) is far less important than the gross flows of entry and exit that generate it.”<sup>27</sup>

In addition, a good statistical registry may further categorize and define the units in its database, and define whether the units are active or not. For example, if one wants to understand the entrepreneurial activity in a more limited sense one can try to understand how many units have declared their interest in becoming active. Or the registry could make a distinction between units that work in order to create profits and units that only

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<sup>23</sup> Eurostat/OECD “Manual on Business Demography Statistics”, 2007, pg. 8

<sup>24</sup> Ibid.

<sup>25</sup> Ibid., pg. 14.

<sup>26</sup> Ibid., pg. 14.

<sup>27</sup> Bartelsman, et. al., 2004, pg. 15.

want to have their costs covered.<sup>28</sup> This can be done by combining different sources of information (e.g., results of surveys and information from tax registers.)

Apart from the issue of whether enterprises may be active or not, there is also another aspect that needs to be reflected: A unit can be registered or not. In this case we speak about non-registered units. In most definitions these units are considered to be part of the so called “informal sector”.

This issue is complicated because there is considerable variation on the definition of an informal sector unit and how to measure it. According to the ILO definitions the informal sector is not defined by their level of registration but by their level of size and a series of specific characteristics, and by the fact whether they are registered or not. For example, units of 5 and less working persons are considered as informal sector units, or units with some relevant characteristics like operating from a household premise, not being registered and/or not keeping files.<sup>29</sup>

Many developing countries (typically with large informal sectors measured as a percent of GDP) have correspondingly large numbers of “informal sector production units.” These are still unfortunately defined in different ways in different countries and by different researchers. This shows that there is no firm agreement about the definition of the concept of the informal sector. If it is defined, e.g., as the total of registered small units (e.g., those under five employees), it would mean that the “informal sector” could be a combination of registered small units and non registered units. If the criterion of registration is used, the “informal sector” could be defined as the total of not registered units. In both cases, these informal units could be considered at any point as being active or not.

Because of the lack of agreed international definitions of the informal and the formal sector, it is important that each publication that uses these concepts should define them clearly, to explain how they are used and should be understood. This becomes even more important when we notice that some authors on the topic make estimations of the informal sector that include a wide range of activities, from tax avoidance (including, e.g., income tax of people with a job), to do-it-yourself-activities (Schneider 2004). Because of the wide discrepancies over definitions of informality and how to measure it in business statistics (especially in low and middle income countries) this issue needs to be addressed clearly when the topic is dealt with.

In addition, countries may exclude certain activities from some of their formal registration, like certain agricultural activities and/or financial activities. In some countries, legal units are units with a legal status distinct from their owners (who may be physical persons). When units do not have a legal status they are considered to be natural persons. The difference between the two is usually that legal units have some form of limited liability and the natural persons do not.

Thus, for practical reasons it is here proposed that all enterprise units that are not registered with at least one of the eligible formal registries in a country<sup>30</sup>, should be considered as being an informal sector unit.

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<sup>28</sup> In the former we speak about profit oriented units (businesses), and in the latter about subsidized, non-profit or government financed organizations.

<sup>29</sup> ILO, op cite.

<sup>30</sup> E.g., Company Registry, tax registry, statistical registry, labor registry

## Standard model for the registration of enterprises for statistical purposes

EU regulations require harmonization of “statistical business registers” in large part to ensure a standard level of data quality “particularly as regards comparability.”<sup>31</sup>

In this paper it is proposed to agree on a standard registration procedure for statistical purposes. The table below is a proposal for the agreement on a standard model for the registration of enterprises for statistical purposes. If such a proposal would be accepted we would be able to start with the harmonization of enterprises registration for all countries that would accept the idea. This would improve the information at the national levels and it would vastly increase the comparability of information of enterprises across countries. This approach would allow an understanding of the relationship between the national administrative registrations and the statistical registrations of enterprises.

Table 4.1 below presents information on the main characteristics that can to be registered in a national database of formal enterprises. The table shows five columns. The first two represent the administrative units and the last three the statistical units. Administrative registers legal units as types, firms with limited liabilities, own account workers and others, and the addresses of these units.

Statistical units used by statistical registers for statistical purposes are:

- the enterprise unit: that is the unit responsible for the financial information and/or the financial management of business activity (note: some “enterprises” may have several “establishment” units, e.g., large conglomerates)
- The concept of “establishment” is used to define a unit for which information is collected on the production process (output, costs and revenues), which may be a branch or subsidiary of a larger group or may be equal to an independent enterprise unit. (Usually the “enterprise” is the same as the “establishment unit” but for large conglomerates, the “enterprise” may have several “establishments”). In the European Union the concept of Kind of Activity (KAU) is used to obtain information from production units, about production, costs and revenues.
- "Local units" are used to present information on the various different geographical locations of the enterprise

Here is a list of suggested information that should be gathered in a good business registry based on the good practice of Eurostat:

- Source key – the unique number for that unit with the government administration
- General business registration number – unique number for each unit with the business register
- Legal status – legal status of the person registering
- SNA-sector code – which SNA sector that the unit belongs to
- Activity code (ISIC) –
- Size class – number of working persons (and / or turnover)
- Change code: if change has occurred, which kind of change.
- Survey code: for which kinds of surveys the unit is approached
- Remaining codes: are self-evident.

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<sup>31</sup> Ibid., pg. 11.

**Table 4.1 Characteristics of a business register data base for statistical purposes.**

	Legal units	Local part of a legal unit	Enterprise	Establishment	Local unit
Source key	X	X			
General Business Register number	X				
name /address	X	X	X	X	X
Legal status	X				
SNA-sector code			X		
Activity code (ISIC)	X	X	X	X	X
Size class (code)	X	X	X	X	X
Change (code)			(X)		
Geo code		X			
Survey code			X	X	
Date of entry	X	X			
Date of "birth"			X	X	
Date of "death"			X	X	
Date of de-register	X	X			

It would be useful to aim at obtaining this level of information, or part of it, for each registered enterprise in a business registry. The best time to obtain this information should be during the registration procedure. However, if there is no form of a formal registration, this information should be obtained by field visits (area approaches). Parts of the city can be visited by staff of governmental institutions (e.g., statistical agency). Also by using a GIS system, units can be identified and registered.<sup>32</sup> But when a proper registration procedure is developed this information can be considered for inclusion in the registration form.

A well-structured register can also record over time change of ownership, mergers/acquisitions, break-ups, split-offs, and/or creation/cessation of a joint-venture, as well as changes in principal activity, size and of main location.<sup>33</sup>

### **Informal Sector**

Finally, it would be desirable to get a better understanding of the size and importance of the informal sector in each country by applying household surveys (e.g., Bartelsman et al, 2004 and Bruhn, 2008). This is of particular importance in all of the developing countries (like IDA) and most of the middle income countries. The household survey is

<sup>32</sup> This information is normally of a lesser quality, however still better than no information at all.

<sup>33</sup> Eurostat manual, pp 18 – 19, with complete definitions on pp. 22 – 23.

the ideal tool to obtain a general impression of the number and size of these informal units. Such a tool, as part of the Labor Force Survey, has now been developed for Africa as part of the IMF/WB GDDS II project for Anglophone African countries by the DECDG division of the World Bank and by Statistics Canada. By creating a number of well-defined questions in a survey, the size and structure of the informal sector can be described in statistical terms. (The design of these questions has been completed and is made available.) In addition it is possible to target specific parts of cities, like public markets, to come up with estimates about the number of units that are active in trade on those markets, how many staff they have and the kind of trade they are involved in.

\* \* \* \* \*

Ultimately, we believe it is both possible and desirable to help client governments invest in improving their data on active companies. The World Bank group has access to the resources and expertise both to improve the data derived from company registries (regarding formal firms, probably best in conjunction with projects to create or improve company registries regarding their legal and administrative bases) and to design and implement household surveys to learn the size and characteristics of the informal sector.

Over time, such improvements, including the use of standardized definitions and templates for data on companies should yield an international database that can be used with much greater confidence for both economic analysis and for monitoring and evaluation purposes.

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# **Annex 1 Entrepreneurship Database including “implicit de-registrations”**

*[Excel file: Entrep with calculated deregistrations.xls]*

## Entrepreneurship Database

Country	Year	Region	Total Corporations	New Corporations	Implicit De-registrations	Ratio new/total	Ratio de-reg/total	Ratio new/de-registrations
Albania	2002	ECA	10,902	821		7.5%		
Albania	2003	ECA	16,553	952	-4,699	5.8%	-28.4%	
Albania	2004	ECA	13,687	1,421	4,287	10.4%	31.3%	
Albania	2005	ECA	16,423	2,388	-348	14.5%	-2.1%	
Algeria	2002	AFR	69,692	13,770		19.8%		
Algeria	2003	AFR	79,908	10,123	-93	12.7%	-0.1%	
Algeria	2004	AFR	92,930	12,494	-528	13.4%	-0.6%	
Algeria	2005	AFR	103,482	12,164	1,612	11.8%	1.6%	
Argentina	2002	LAC	343,848	21,000		6.1%		
Argentina	2003	LAC	359,192	40,000	24,656	11.1%	6.9%	
Argentina	2004	LAC	404,452	60,000	14,740	14.8%	3.6%	
Argentina	2005	LAC	450,535	53,000	6,917	11.8%	1.5%	
Armenia	2002	ECA	109,892	8,402		7.6%		
Armenia	2003	ECA	113,486	8,499	4,905	7.5%	4.3%	
Armenia	2004	ECA	118,596	9,089	3,979	7.7%	3.4%	
Armenia	2005	ECA	123,951	9,667	4,312	7.8%	3.5%	
Australia	2002	DEV	814,022	78,320		9.6%		
Australia	2003	DEV	870,963	75,946	19,005	8.7%	2.2%	299.6%
Australia	2004	DEV	935,047	81,079	16,995	8.7%	1.8%	377.1%
Australia	2005	DEV	.	.				
Austria	2002	DEV	158,590	12,564		7.9%		
Austria	2003	DEV	161,732	12,504	9,362	7.7%	5.8%	33.6%
Austria	2004	DEV	166,487	13,476	8,721	8.1%	5.2%	54.5%
Austria	2005	DEV	172,602	14,669	8,554	8.5%	5.0%	71.5%
Bangladesh	2002	Asia	52,030	2,986		5.7%		
Bangladesh	2003	Asia	55,933	3,906	3	7.0%	0.0%	
Bangladesh	2004	Asia	59,975	4,042	0	6.7%	0.0%	
Bangladesh	2005	Asia	67,459	5,328	-2,156	7.9%	-3.2%	
Belgium	2002	DEV	308,989	20,662		6.7%		
Belgium	2003	DEV	317,981	22,105	13,113	7.0%	4.1%	68.6%
Belgium	2004	DEV	328,817	25,143	14,307	7.6%	4.4%	75.7%
Belgium	2005	DEV	343,761	25,492	10,548	7.4%	3.1%	141.7%
Bolivia	2002	LAC	20,149	1,836		9.1%		
Bolivia	2003	LAC	21,632	1,551	68	7.2%	0.3%	
Bolivia	2004	LAC	23,084	1,524	72	6.6%	0.3%	
Bolivia	2005	LAC	24,649	1,625	60	6.6%	0.2%	
Bosnia and Herzegovina	2002	ECA	.	.				
Bosnia and Herzegovina	2003	ECA	27,775	1,481		5.3%		
Bosnia and Herzegovina	2004	ECA	31,145	1,481	-1,889	4.8%	-6.1%	
Bosnia and Herzegovina	2005	ECA	34,035	1,409	-1,481	4.1%	-4.4%	
Botswana	2002	AFR	54,611	5,262		9.6%		
Botswana	2003	AFR	62,385	7,774	0	12.5%	0.0%	
Botswana	2004	AFR	72,242	9,857	0	13.6%	0.0%	

Botswana	2005	AFR	79,543	7,301	0	9.2%	0.0%	
Canada	2002	DEV	1,343,806	84,767		6.3%		
Canada	2003	DEV	1,378,405	79,892	45,293	5.8%	3.3%	76.4%
Canada	2004	DEV	1,466,554	86,464	-1,685	5.9%	-0.1%	
Canada	2005	DEV	1,357,881	85,083	193,756	6.3%	14.3%	-56.1%
Chile	2002	LAC	163,466	27,141		16.6%		
Chile	2003	LAC	167,800	28,123	23,789	16.8%	14.2%	
Chile	2004	LAC	171,497	29,824	26,127	17.4%	15.2%	
Chile	2005	LAC	170,636	31,088	31,949	18.2%	18.7%	
Colombia	2002	LAC	17,111	1,021		6.0%		
Colombia	2003	LAC	18,034	1,093	170	6.1%	0.9%	
Colombia	2004	LAC	19,092	1,182	124	6.2%	0.6%	
Colombia	2005	LAC	20,026	987	53	4.9%	0.3%	
Congo, Rep.	2002	AFR	28,083	2,441		8.7%		
Congo, Rep.	2003	AFR	30,316	2,233	0	7.4%	0.0%	
Congo, Rep.	2004	AFR	32,354	2,038	0	6.3%	0.0%	
Congo, Rep.	2005	AFR	34,514	2,160	0	6.3%	0.0%	
Costa Rica	2002	LAC	.	.				
Costa Rica	2003	LAC	.	.				
Costa Rica	2004	LAC	348,622	36,084		10.4%		
Costa Rica	2005	LAC	392,726	44,301	197	11.3%	0.1%	
Croatia	2002	ECA	97,491	5,354		5.5%		
Croatia	2003	ECA	101,939	6,756	2,308	6.6%	2.3%	
Croatia	2004	ECA	106,923	7,311	2,327	6.8%	2.2%	
Croatia	2005	ECA	113,708	8,733	1,948	7.7%	1.7%	
Cyprus	2002	ECA	109,061	8,496		7.8%		
Cyprus	2003	ECA	115,744	9,080	2,397	7.8%	2.1%	
Cyprus	2004	ECA	125,361	11,586	1,969	9.2%	1.6%	
Cyprus	2005	ECA	137,636	14,494	2,219	10.5%	1.6%	
Czech Republic	2002	ECA	235,721	.				
Czech Republic	2003	ECA	248,107	.				
Czech Republic	2004	ECA	260,940	.				
Czech Republic	2005	ECA	273,688	30,945	18,197	11.3%	6.6%	
Denmark	2002	DEV	194,425	15,837		8.1%		
Denmark	2003	DEV	202,008	17,526	9,943	8.7%	4.9%	76.3%
Denmark	2004	DEV	211,871	21,263	11,400	10.0%	5.4%	86.5%
Denmark	2005	DEV	234,432	33,047	10,486	14.1%	4.5%	215.2%
Egypt	2002	AFR	.	.				
Egypt	2003	AFR	.	.				
Egypt	2004	AFR	.	.				
Egypt	2005	AFR	367,559	9,595		2.6%	0.0%	
El Salvador	2002	LAC	.	1,801				
El Salvador	2003	LAC	.	1,328				
El Salvador	2004	LAC	40,739	1,549		3.8%	0.0%	
El Salvador	2005	LAC	.	2,617				
Estonia	2002	ECA	58,371	6,471		11.1%		
Estonia	2003	ECA	63,056	6,813	2,128	10.8%	3.4%	
Estonia	2004	ECA	67,852	8,204	3,408	12.1%	5.0%	
Estonia	2005	ECA	73,999	9,945	3,798	13.4%	5.1%	
Finland	2002	DEV	112,106	7,226		6.4%		
Finland	2003	DEV	112,682	7,011	6,435	6.2%	5.7%	9.0%
Finland	2004	DEV	112,734	7,424	7,372	6.6%	6.5%	0.7%

Finland	2005	DEV	114,061	7,710	6,383	6.8%	5.6%	20.8%
France	2002	DEV	1,102,943	110,782		10.0%		
France	2003	DEV	1,133,955	123,765	92,753	10.9%	8.2%	33.4%
France	2004	DEV	1,182,941	142,625	93,639	12.1%	7.9%	52.3%
France	2005	DEV	1,225,291	144,521	102,171	11.8%	8.3%	41.5%
Georgia	2002	ECA	45,011	2,771		6.2%		
Georgia	2003	ECA	47,676	2,666	1	5.6%	0.0%	
Georgia	2004	ECA	51,805	4,129	0	8.0%	0.0%	
Georgia	2005	ECA	56,840	5,035	0	8.9%	0.0%	
Germany	2002	DEV	465,704	85,914		18.4%		
Germany	2003	DEV	464,172	71,259	72,791	15.4%	15.7%	-2.1%
Germany	2004	DEV	465,615	69,744	68,301	15.0%	14.7%	2.1%
Germany	2005	DEV	.	66,747				
Ghana	2002	AFR	93,982	5,576		5.9%		
Ghana	2003	AFR	100,272	6,189	-101	6.2%	-0.1%	
Ghana	2004	AFR	.	.				
Ghana	2005	AFR	.	.				
Greece	2002	DEV	29,941	2,315		7.7%		
Greece	2003	DEV	31,251	2,309	999	7.4%	3.2%	131.1%
Greece	2004	DEV	32,356	2,151	1,046	6.6%	3.2%	105.6%
Greece	2005	DEV	33,839	2,381	898	7.0%	2.7%	165.1%
Guatemala	2002	LAC	.	3,479				
Guatemala	2003	LAC	.	3,773				
Guatemala	2004	LAC	.	4,193				
Guatemala	2005	LAC	68,451	4,251		6.2%		
Haiti	2002	LAC	385	2		0.5%		
Haiti	2003	LAC	337	7	55	2.1%	16.3%	
Haiti	2004	LAC	339	9	7	2.7%	2.1%	
Haiti	2005	LAC	300	9	48	3.0%	16.0%	
Hong Kong, China	2002	DEV	510,114	47,363		9.3%		
Hong Kong, China	2003	DEV	504,689	50,900	56,325	10.1%	11.2%	-9.6%
Hong Kong, China	2004	DEV	526,557	66,439	44,571	12.6%	8.5%	49.1%
Hong Kong, China	2005	DEV	557,002	74,122	43,677	13.3%	7.8%	69.7%
Hungary	2002	ECA	198,427	19,931		10.0%		
Hungary	2003	ECA	209,641	19,854	8,640	9.5%	4.1%	
Hungary	2004	ECA	226,143	24,301	7,799	10.7%	3.4%	
Hungary	2005	ECA	240,556	22,251	7,838	9.2%	3.3%	
Iceland	2002	DEV	18,519	3,120		16.8%		
Iceland	2003	DEV	20,160	2,389	748	11.9%	3.7%	219.4%
Iceland	2004	DEV	22,062	2,517	615	11.4%	2.8%	309.3%
Iceland	2005	DEV	25,223	2,938	-223	11.6%	-0.9%	
India	2002	Asia	605,768	22,727		3.8%		
India	2003	Asia	636,461	28,024	-2,669	4.4%	-0.4%	
India	2004	Asia	661,371	36,859	11,949	5.6%	1.8%	
India	2005	Asia	712,800	38,129	-13,300	5.3%	-1.9%	
Indonesia	2002	Asia	232,771	6,901		3.0%		
Indonesia	2003	Asia	232,507	7,266	7,530	3.1%	3.2%	
Indonesia	2004	Asia	232,243	4,481	4,745	1.9%	2.0%	
Indonesia	2005	Asia	259,799	19,851	-7,705	7.6%	-3.0%	
Ireland	2002	DEV	154,242	13,814		9.0%		
Ireland	2003	DEV	148,303	14,347	20,286	9.7%	13.7%	-29.3%
Ireland	2004	DEV	157,502	15,592	6,393	9.9%	4.1%	143.9%

Ireland	2005	DEV	160,707	17,234	14,029	10.7%	8.7%	22.8%
Israel	2002	DEV	340,850	17,197		5.0%		
Israel	2003	DEV	354,387	14,938	1,401	4.2%	0.4%	
Israel	2004	DEV	368,352	13,965	0	3.8%	0.0%	
Israel	2005	DEV	379,503	14,687	3,536	3.9%	0.9%	
Italy	2002	DEV	1,584,125	107,092		6.8%		
Italy	2003	DEV	1,625,707	97,777	56,195	6.0%	3.5%	74.0%
Italy	2004	DEV	1,657,635	101,066	69,138	6.1%	4.2%	46.2%
Italy	2005	DEV	1,688,198	104,364	73,801	6.2%	4.4%	41.4%
Japan	2002	DEV	2,549,003	.				
Japan	2003	DEV	2,550,087	105,988	104,904	4.2%	4.1%	1.0%
Japan	2004	DEV	2,553,135	112,872	109,824	4.4%	4.3%	2.8%
Japan	2005	DEV	2,572,088	114,013	95,060	4.4%	3.7%	19.9%
Jordan	2002	AFR	83,398	4,792		5.7%		
Jordan	2003	AFR	88,478	5,080	0	5.7%	0.0%	
Jordan	2004	AFR	95,010	6,532	0	6.9%	0.0%	
Jordan	2005	AFR	102,716	7,706	0	7.5%	0.0%	
Kazakhstan	2002	ECA	26,144	.				
Kazakhstan	2003	ECA	27,805	2,696	1,035	9.7%	3.7%	
Kazakhstan	2004	ECA	29,883	2,690	612	9.0%	2.0%	
Kazakhstan	2005	ECA	32,150	3,302	1,035	10.3%	3.2%	
Kenya	2002	AFR	101,582	4,760		4.7%		
Kenya	2003	AFR	107,490	5,943	35	5.5%	0.0%	
Kenya	2004	AFR	114,168	6,701	23	5.9%	0.0%	
Kenya	2005	AFR	125,102	7,371	-3,563	5.9%	-2.8%	
Latvia	2002	ECA	165,447	6,178		3.7%		
Latvia	2003	ECA	172,996	7,549	0	4.4%	0.0%	
Latvia	2004	ECA	183,037	10,041	0	5.5%	0.0%	
Latvia	2005	ECA	193,893	10,856	0	5.6%	0.0%	
Lebanon	2002	AFR	57,079	2,853		5.0%		
Lebanon	2003	AFR	58,858	2,891	1,112	4.9%	1.9%	
Lebanon	2004	AFR	61,282	3,470	1,046	5.7%	1.7%	
Lebanon	2005	AFR	63,423	3,127	986	4.9%	1.6%	
Lithuania	2002	ECA	59,163	3,241		5.5%		
Lithuania	2003	ECA	62,897	3,734	0	5.9%	0.0%	
Lithuania	2004	ECA	66,578	3,762	81	5.7%	0.1%	
Lithuania	2005	ECA	71,085	4,507	0	6.3%	0.0%	
Luxembourg	2002	DEV	18,849	2,250		11.9%		
Luxembourg	2003	DEV	19,546	2,176	1,479	11.1%	7.6%	47.1%
Luxembourg	2004	DEV	20,239	2,172	1,479	10.7%	7.3%	46.9%
Luxembourg	2005	DEV	.	.				
Macedonia, FYR	2002	ECA	132,934	9,757		7.3%		
Macedonia, FYR	2003	ECA	141,611	9,698	1,021	6.8%	0.7%	
Macedonia, FYR	2004	ECA	148,950	8,584	1,245	5.8%	0.8%	
Macedonia, FYR	2005	ECA	157,973	10,814	1,791	6.8%	1.1%	
Madagascar	2002	AFR	15,823	667		4.2%		
Madagascar	2003	AFR	16,889	1,089	23	6.4%	0.1%	
Madagascar	2004	AFR	18,075	1,200	14	6.6%	0.1%	
Madagascar	2005	AFR	19,305	1,234	4	6.4%	0.0%	
Malawi	2002	AFR	5,194	329		6.3%		
Malawi	2003	AFR	5,214	339	319	6.5%	6.1%	
Malawi	2004	AFR	5,262	272	224	5.2%	4.3%	

Malawi	2005	AFR	5,595	420	87	7.5%	1.6%	
Malta	2002	ECA	30,835	1,651		5.4%		
Malta	2003	ECA	32,996	2,161	0	6.5%	0.0%	
Malta	2004	ECA	35,410	2,414	0	6.8%	0.0%	
Malta	2005	ECA	37,773	2,363	0	6.3%	0.0%	
Mexico	2002	LAC	.	.				
Mexico	2003	LAC	.	.				
Mexico	2004	LAC	.	.				
Mexico	2005	LAC	4,290,000	306,400		7.1%		
Moldova	2002	ECA	48,189	4,012		8.3%		
Moldova	2003	ECA	52,529	4,587	247	8.7%	0.5%	
Moldova	2004	ECA	56,881	4,874	522	8.6%	0.9%	
Moldova	2005	ECA	61,333	5,033	581	8.2%	0.9%	
Morocco	2002	AFR	119,942	9,362		7.8%		
Morocco	2003	AFR	130,730	10,788	0	8.3%	0.0%	
Morocco	2004	AFR	142,540	11,810	0	8.3%	0.0%	
Morocco	2005	AFR	155,947	13,407	0	8.6%	0.0%	
Netherlands	2002	DEV	941,000	88,000		9.4%		
Netherlands	2003	DEV	955,000	88,000	74,000	9.2%	7.7%	18.9%
Netherlands	2004	DEV	986,000	102,000	71,000	10.3%	7.2%	43.7%
Netherlands	2005	DEV	1,030,000	116,000	72,000	11.3%	7.0%	61.1%
New Zealand	2002	DEV	275,813	42,976		15.6%		
New Zealand	2003	DEV	307,461	54,861	23,213	17.8%	7.5%	136.3%
New Zealand	2004	DEV	345,702	62,468	24,227	18.1%	7.0%	157.8%
New Zealand	2005	DEV	388,846	62,695	19,551	16.1%	5.0%	220.7%
Norway	2002	DEV	268,491	39,041		14.5%		
Norway	2003	DEV	290,432	38,747	16,806	13.3%	5.8%	130.6%
Norway	2004	DEV	289,955	43,068	43,545	14.9%	15.0%	-1.1%
Norway	2005	DEV	298,360	47,436	39,031	15.9%	13.1%	21.5%
Pakistan	2002	Asia	38,893	1,371		3.5%		
Pakistan	2003	Asia	40,631	1,738	0	4.3%	0.0%	
Pakistan	2004	Asia	40,670	2,576	2,537	6.3%	6.2%	
Pakistan	2005	Asia	44,897	4,227	0	9.4%	0.0%	
Peru	2002	LAC	469,692	23,136		4.9%		
Peru	2003	LAC	494,449	25,696	939	5.2%	0.2%	
Peru	2004	LAC	521,765	28,302	986	5.4%	0.2%	
Peru	2005	LAC	554,135	33,349	979	6.0%	0.2%	
Poland	2002	ECA	478,972	23,247		4.9%		
Poland	2003	ECA	489,738	23,938	13,172	4.9%	2.7%	
Poland	2004	ECA	498,920	23,683	14,501	4.7%	2.9%	
Poland	2005	ECA	509,894	23,864	12,890	4.7%	2.5%	
Portugal	2002	DEV	252,827	15,076		6.0%		
Portugal	2003	DEV	262,686	16,770	6,911	6.4%	2.6%	142.7%
Portugal	2004	DEV	.	.				
Portugal	2005	DEV	.	.				
Romania	2002	ECA	629,410	50,129		8.0%		
Romania	2003	ECA	686,451	73,850	16,809	10.8%	2.4%	
Romania	2004	ECA	768,056	89,244	7,639	11.6%	1.0%	
Romania	2005	ECA	851,562	91,386	7,880	10.7%	0.9%	
Russia	2002	ECA	3,845,000	311,339		8.1%		
Russia	2003	ECA	4,150,000	362,887	57,887	8.7%	1.4%	
Russia	2004	ECA	4,417,000	369,476	102,476	8.4%	2.3%	

Russia	2005	ECA	4,767,300	446,605	96,305	9.4%	2.0%	
Senegal	2002	AFR	987	31		3.1%		
Senegal	2003	AFR	1,015	57	29	5.6%	2.9%	
Senegal	2004	AFR	1,115	24	-76	2.2%	-6.8%	
Senegal	2005	AFR	1,000	23	138	2.3%	13.8%	
Serbia	2002	ECA	199,572	7,644		3.8%		
Serbia	2003	ECA	204,891	6,721	1,402	3.3%	0.7%	
Serbia	2004	ECA	263,251	8,832	-49,528	3.4%	-18.8%	
Serbia	2005	ECA	270,872	14,608	6,987	5.4%	2.6%	
Singapore	2002	DEV	87,490	11,294		12.9%		
Singapore	2003	DEV	91,600	13,544	9,434	14.8%	10.3%	43.6%
Singapore	2004	DEV	98,025	17,513	11,088	17.9%	11.3%	57.9%
Singapore	2005	DEV	102,662	19,501	14,864	19.0%	14.5%	31.2%
Slovakia	2002	ECA	57,338	2,372		4.1%		
Slovakia	2003	ECA	62,368	4,029	-1,001	6.5%	-1.6%	
Slovakia	2004	ECA	72,191	6,199	-3,624	8.6%	-5.0%	
Slovakia	2005	ECA	81,775	7,507	-2,077	9.2%	-2.5%	
Slovenia	2002	ECA	31,401	2,003		6.4%		
Slovenia	2003	ECA	33,974	2,559	-14	7.5%	0.0%	
Slovenia	2004	ECA	37,078	2,994	-110	8.1%	-0.3%	
Slovenia	2005	ECA	40,560	3,237	-245	8.0%	-0.6%	
South Africa	2002	AFR	507,813	29,590		5.8%		
South Africa	2003	AFR	509,815	29,343	27,341	5.8%	5.4%	
South Africa	2004	AFR	529,028	33,645	14,432	6.4%	2.7%	
South Africa	2005	AFR	553,425	41,356	16,959	7.5%	3.1%	
Spain	2002	DEV	1,840,645	117,780		6.4%		
Spain	2003	DEV	1,952,789	124,088	11,944	6.4%	0.6%	938.9%
Spain	2004	DEV	2,067,703	131,685	16,771	6.4%	0.8%	685.2%
Spain	2005	DEV	2,193,691	139,119	13,131	6.3%	0.6%	959.5%
Sri Lanka	2002	Asia	45,673	3,116		6.8%		
Sri Lanka	2003	Asia	49,612	3,939	0	7.9%	0.0%	
Sri Lanka	2004	Asia	53,764	4,152	0	7.7%	0.0%	
Sri Lanka	2005	Asia	58,518	4,754	0	8.1%	0.0%	
Sweden	2002	DEV	287,126	16,649		5.8%		
Sweden	2003	DEV	289,132	15,684	13,678	5.4%	4.7%	14.7%
Sweden	2004	DEV	295,538	20,245	13,839	6.9%	4.7%	46.3%
Sweden	2005	DEV	301,814	21,695	15,419	7.2%	5.1%	40.7%
Switzerland	2002	DEV	127,388	16,719		13.1%		
Switzerland	2003	DEV	131,638	12,221	7,971	9.3%	6.1%	53.3%
Switzerland	2004	DEV	134,287	13,186	10,537	9.8%	7.8%	25.1%
Switzerland	2005	DEV	140,580	8,998	2,705	6.4%	1.9%	232.6%
Syria	2002	AFR	2,192	201		9.2%		
Syria	2003	AFR	2,168	173	197	8.0%	9.1%	
Syria	2004	AFR	2,299	178	47	7.7%	2.0%	
Syria	2005	AFR	2,268	216	247	9.5%	10.9%	
Tanzania	2002	AFR	.	3,623				
Tanzania	2003	AFR	.	2,675				
Tanzania	2004	AFR	.	3,242				
Tanzania	2005	AFR	59,163	3,933		6.6%		
Tunisia	2002	AFR	47,816	5,460		11.4%		
Tunisia	2003	AFR	53,665	5,332	-517	9.9%	-1.0%	
Tunisia	2004	AFR	57,682	5,883	1,866	10.2%	3.2%	



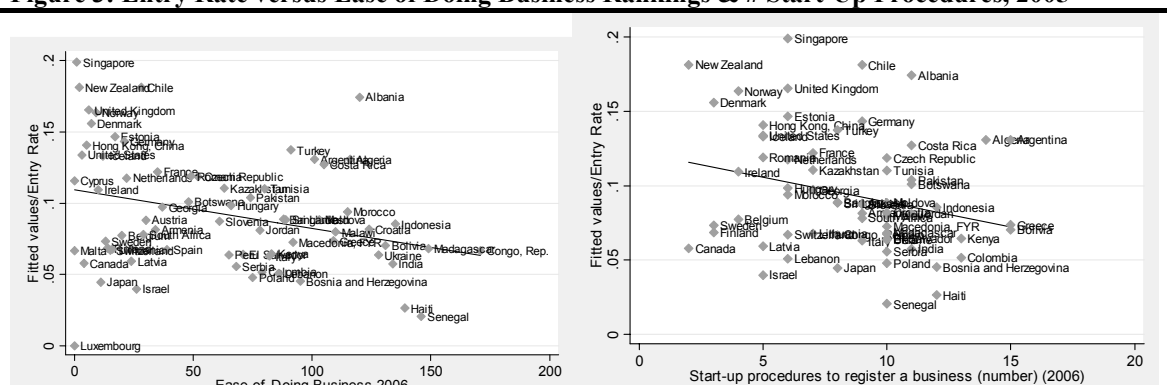
Tunisia	2005	AFR	62,563	6,353	1,472	10.2%	2.4%	
Turkey	2002	ECA	585,981	56,285		9.6%		
Turkey	2003	ECA	605,020	56,804	37,765	9.4%	6.2%	
Turkey	2004	ECA	632,093	82,250	55,177	13.0%	8.7%	
Turkey	2005	ECA	593,166	86,900	125,827	14.7%	21.2%	
Uganda	2002	AFR	.	5,106				
Uganda	2003	AFR	.	4,857				
Uganda	2004	AFR	.	7,221				
Uganda	2005	AFR	89,503	8,096		9.0%		
United Kingdom	2002	DEV	1,658,200	225,500		13.6%		
United Kingdom	2003	DEV	1,804,100	325,900	180,000	18.1%	10.0%	81.1%
United Kingdom	2004	DEV	2,016,700	390,200	177,600	19.3%	8.8%	119.7%
United Kingdom	2005	DEV	2,160,000	333,700	190,400	15.4%	8.8%	75.3%
Ukraine	2002	ECA	411,094	27,361		6.7%		
Ukraine	2003	ECA	430,796	27,877	8,175	6.5%	1.9%	
Ukraine	2004	ECA	451,167	26,724	6,353	5.9%	1.4%	
Ukraine	2005	ECA	471,839	28,716	8,044	6.1%	1.7%	
United States	2002	DEV	4,921,000	.				
United States	2003	DEV	4,960,000	618,503	579,503	12.5%	11.7%	6.7%
United States	2004	DEV	5,052,000	657,195	565,195	13.0%	11.2%	16.3%
United States	2005	DEV	5,156,000	676,830	572,830	13.1%	11.1%	18.2%
Yemen	2002	AFR	.	.				
Yemen	2003	AFR	.	.				
Yemen	2004	AFR	.	.				
Yemen	2005	AFR	21,332	1,800		8.4%		
Zambia	2002	AFR	.	2,350				
Zambia	2003	AFR	.	2,443				
Zambia	2004	AFR	.	3,078				
Zambia	2005	AFR	65,155	3,389		5.2%		

## Annex 2 Analysis of Cross-Country comparisons using Entrepreneurship Database

Let's reexamine the correlations done by Klapper et. al in light of what we know about the potential problem with firm demography. Using the ED data, Klapper et al, ran various correlations with indicators such as (i) the business environment using indicators from the World Bank Doing Business report, such as the 178 country rank<sup>34</sup>, # of procedures to start a business as well as (ii) the level of economic and financial development using income and private credit/gdp measures.

Running a simple correlation of the entry rate, or the number of new companies this year over the total number of companies last year on the ease of doing business indicator rank (a simple weighted average of ranks of ten business related indicators) and the # of procedures to start a business, Klapper et. al found statistically significant evidence that a higher entry rate<sup>35</sup> was associated with a more competitive business environment and with fewer number of procedures to start a business. We followed the same procedures and in Figure 3 you can see the results confirm the original hypothesis – higher entry rates are negatively correlated with DB rank and # of procedures to start a business - without identifying the direction of causality.

**Figure 3: Entry Rate versus Ease of Doing Business Rankings & # Start-Up Procedures, 2005**



Source: World Bank Entrepreneurship Database 2007, World Bank Development Indicators 2007

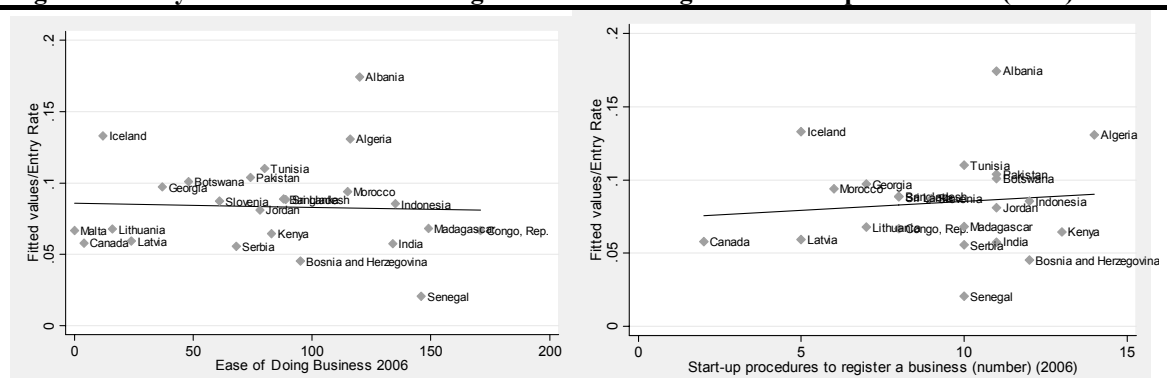
However, if we disaggregate the sample and look at the 26 countries (listed above) that have data which suggests they are not collecting firm “deaths” or firms are not de-registering at all and do the same correlations, we see that the relationship significantly weakens for the ease of doing business rank and reverses for the number of start up procedures to register a business – implying more procedures increases firm entry rate (or the reverse; see Figure 4 below).

<sup>34</sup> Since the Doing Business Report did not produce a rank in 2005, we used the Ease of Doing Business Rank from 2006, something which was not clear from the Klapper et. Al paper

<sup>35</sup>

We define entry rate as: 
$$\frac{NewCompanies_t}{TotalCompanies_{t-1}}$$

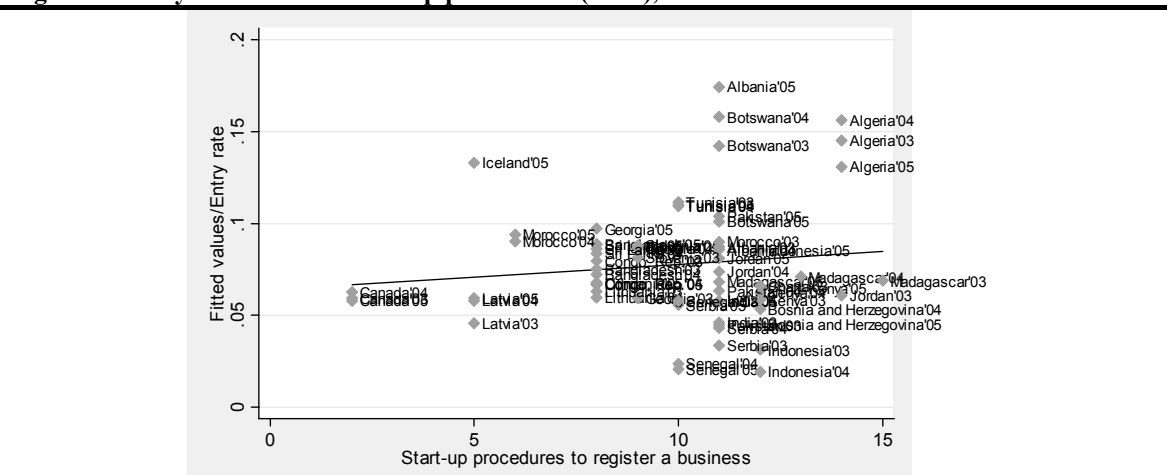
**Figure 4: Entry rate versus Ease of Doing Business Rankings & # Start-Up Procedures (Both)**



Source: World Bank Entrepreneurship Database 2007, World Bank Development Indicators 2007

We also checked by grouping three consecutive years of data (2003, 2004 and 2005) to increase the sample size to 78 observations and the same puzzling results were found (Figure 5).

**Figure 5: Entry rate versus # start-up procedures (Both), 2003-2005**



Source: World Bank Entrepreneurship Database 2007, World Bank Development Indicators 2007

It is important to remember when looking skeptically at these small sample size correlations, that in fact the whole database suffers from a sample size that may be too small to infer anything meaningful from the data. Even if we assumed that the data were accurate, with just 84 countries in the entrepreneurship data set, and in many cases with lack of data in other areas the correlations are being made with just 60-80 observations - strongly increasing the likelihood that outliers are driving the correlations. If we remove the top two (Singapore and New Zealand) and bottom two (Haiti and Senegal) countries for business entry rate, then the relationship between things like entry rate and average of Kaufmann et al Governance indicators (Figure 9 p. 21 Klapper et. Al) becomes insignificant.

Another curiosity emerges when we compare the entry rates with level of economic development and disaggregate the data by income levels. Klapper et al. correlated entry rate with GDP per capita and found a significant positive relationship – suggesting, as they say, either “positive economic growth is determinant for the creation (i.e. registration) of new businesses or ...greater entrepreneurship leads to economic growth



## **Annex 3 Country Case Studies**

- **Ukraine**
- **Latvia**
- **Peru**
- **Macedonia**
- **South Africa**
- **Other African countries**

# **“Sorting out the active from the inactive”**

## **How a backlog of inactive but still registered enterprises is hiding the true entrepreneurship picture in Ukraine**

*Working paper – by Yuriy Kuzmyn and Florentin Blanc, IFC Ukraine BEE Project*

*Significant differences between the officially reported figures on entrepreneurship (which get reflected in international indices) and the real situation means that the design of reform interventions and solutions can be seriously misguided. The government as well as the donor community and not least the IFC need to take this into account when designing programs aimed at fostering private sector development. Paraphrasing the well known slogan: “what gets measured, gets done” – “wrong measurement will lead to wrong actions!”*

### **Executive summary**

In Ukraine, regulatory barriers to exit have resulted in a considerable number of businesses, which are not active, but are still in the business registrar. This backlog of inactive enterprises in Ukraine (40% of all registered enterprises) thus hampers accurate tracking of business entry and growth rates and means that officially reported figures do not adequately reflect the true entrepreneurship picture. This means that the World Bank Group Entrepreneurship database (WBG ED), while being the most comprehensive cross country firm entry dataset, provides information, which does not accurately reflect business development in Ukraine.

Not filtering out the “inactive but still registered” businesses means that the overall number of enterprises, and their density per 1,000 population, is overestimated. This is compounded by differences in definitions of enterprise that further contribute to make entrepreneurship in Ukraine appear more developed than it really is. At the same time, it means that the growth rate is substantially underestimated, making Ukrainian business look less dynamic than it is.

IFC Ukraine BEE project estimates that the actual development of business in Ukraine in 2005-2006 was as follows:

- Average entry rate was 7.1% – vs. 5.9% according to WBG ED
- Average annual growth rate in active enterprises was 7.1% – vs. 4.3% according to WBG ED
- The 1-year survival rate for Ukraine was 91% and the 2-year survival rate was 81%<sup>38</sup>.

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<sup>38</sup> This was calculated using specially requested data from the State Statistics Committee – WBG ED does not have a “survival rate” indicator. Using the methodology suggested by Luttikhuisen, Hornberger and Coolidge in their draft paper “Understanding and Improving Data on Entrepreneurship and Active Companies” (May 2008 – see pages 4-8) one can calculate the 1-year survival rate suggested by the WBG ED data as being over 98%.

## Number of registered and active enterprises in Ukraine

This document sheds light on the business statistics in Ukraine. We compare the data coming from two sources: State Statistics Committee of Ukraine and WBG Entrepreneurship database. We intend to show the differences in methodology behind the datasets and how they influence business demography statistics for Ukraine<sup>39</sup>.

Despite the fact that international definition of businesses does exist, the rules that govern what statistical offices do largely reflect institutional and administrative arrangements that exist in their country. Therefore indicators of businesses demography may differ from country to country.

For the purpose of this study, we base ourselves on the definition used in the EU *‘The enterprise is the smallest combination of legal units that is an organizational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations. An enterprise may be a sole legal unit.’*<sup>40</sup> This definition is consistent with the one used in the 1993 System of National Accounts and International Standard of Industrial Classifications.

With the goal to have indicators, which could be comparable across countries, from the universe of all legal entities registered in Business registrar in Ukraine we selected those, which correspond to the above definition and local practice.

Specifically, the following rules are applied to derive the final dataset:

### 1. Legal forms:

The indicators presented below include market oriented legal forms (e.g. limited liability companies, partnerships) but **exclude** business units in the central and local **government sectors**, associations and unions. This is partly because the births and deaths of enterprises in the latter sectors are typically determined by very different factors than those that govern births and deaths in the market sector<sup>41</sup>. Due to sub-optimal quality of data we also exclude **sole proprietors**<sup>42</sup> (which are also excluded from the WBG ED data for Ukraine).

### 2. Ownership:

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<sup>39</sup> Interestingly, at least for corporations, Ukraine official statistics actually maintain a register of active enterprises vs. “registered but inactive”. This is far from being the case in every country, as shown in Luttikhuisen, Hornberger and Coolidge (op.cit.). Thus this suggests that one key way to improve the quality of data in WBG ED can be to exercise stricter control of the quality of the responses provided by local institutions.

<sup>40</sup> Council Regulation (EEC) No 696/93 of 15 March 1993 on the statistical units for the observation and analysis of the production system in the Community.

<sup>41</sup> Specifically, companies accounted for here are legal entities (a) of selected organizational types [Private enterprise, Associated company, Foreign enterprise, Enterprise of association of citizens, Enterprise of consumer co-operation, Joint-stock company, Public corporation, Closed joint-stock company, State joint-stock association (society), Limited (liability) company, Company with additional liability, Complete partnership, Special partnership, Cooperative (society), Associations of legal entities], *Parties, religion organizations, etc (in total 41 types of establishments were excluded)* and of (b) private ownership.

<sup>42</sup> According to results of a population survey conducted by IFC in April-May 2007, number of *active* sole proprietors is about a quarter of the official data on *registered* sole proprietors.

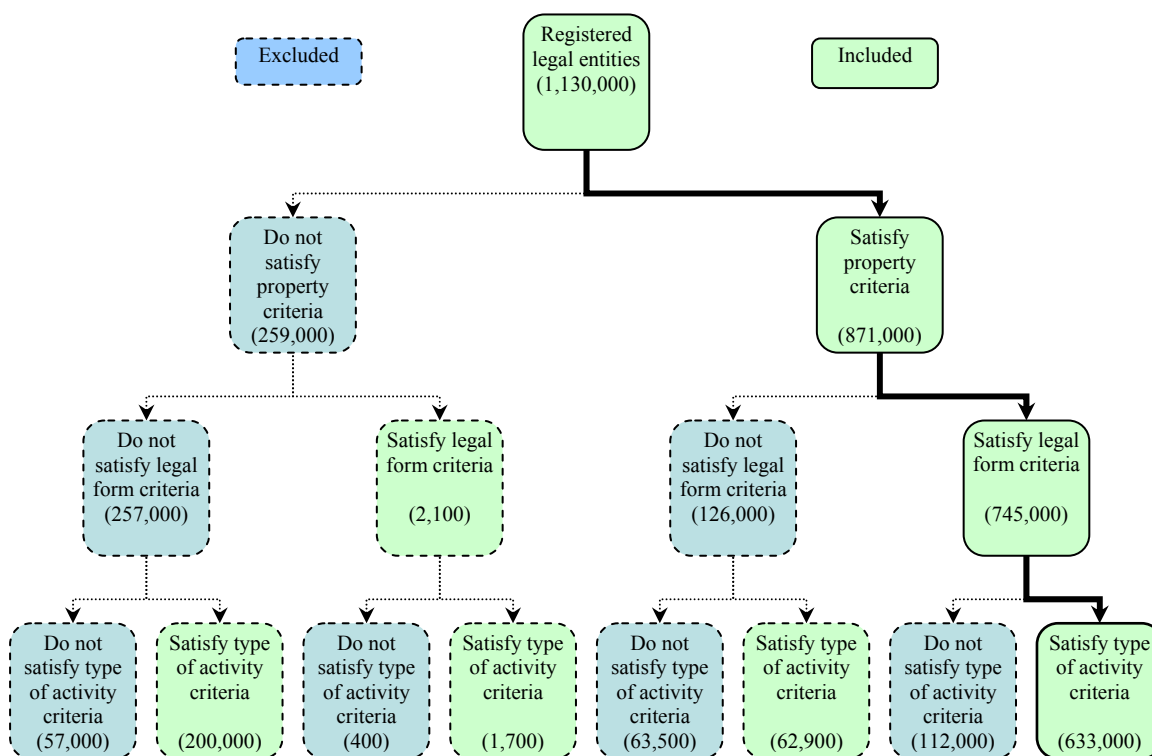
For the above reason we exclude business units owned by central or local government.

### 3. Activities:

Activities relating to production, construction, distributive trades and services are covered, but **agriculture, public administration, non-market, and extra-territorial activities are not**. This is mainly to comply with the current coverage of statistical business registrars in most OECD and EU countries<sup>43</sup> - agriculture is typically excluded because of its specificities which mean it is difficult to aggregate “farms” and “enterprises” in a meaningful way. The exclusion of public administrations etc. from *entrepreneurship* data is relatively self-explanatory.

As a result of application of the above mentioned criteria about sixty percent out of 1,130,456 Ukrainian legal entities (not counting sole proprietors) satisfied this internationally accepted definition of enterprise in 2006.

**Chart 1. About half of registered legal entities satisfy the international definition of enterprise.**



<sup>43</sup> Specifically, companies accounted for here are filtered by their main type of activity [Industry, Construction, Trade, Public catering and hotels, Transportation, Services are included; *Agriculture / Forestry, Public administration and extra-territorial activity are excluded.*

See also EUROSTAT - OECD Manual on Business Demography Statistics, OECD, p. 13 [http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-RA-07-010/EN/KS-RA-07-010-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-RA-07-010/EN/KS-RA-07-010-EN.PDF)



Based on the derived number of registered enterprises we constructed a set of indicators to track the development of business in Ukraine (see Table 1 for details). Two of them deserve special explanation, others are self explanatory:

- Active entities – legal entities, which file tax returns to the State Tax Service.
- Activity rate – number of active enterprises as a share of registered enterprises. The activity rate helps to monitor how many companies stop being active, but do not liquidate because of the regulatory difficulty of doing so. In addition to this, one can compute the survival rate based on data specifically requested from the official statistics. In 2006, the 1-year survival rate for Ukraine was 91% and the 2-year survival rate was 81%<sup>44</sup>. Based on the activity rate and survival rate one finds that the average age of an enterprise in Ukraine is about 9 years.

**Table 1: Number of registered and active enterprises in Ukraine**

Year	Total registered (# of enterprises in register as of year end)	Year on year change in # of registered enterprises	Active (# of enterprises filing tax returns)	Year on year change in # of active enterprises	Activity rate (active total registered)	Newly registered (# of enterprises registered during the year)	Entry rate (newly registered to total registered)	Liquidated (# of enterprises de-registered during the year)	Exit rate (de-registered to total registered)
	A	dA	D	dA	D/A	B	B/A	C	C/A
2004	565,113	x	333,604	x	59%	36,578	6%	4,969	1%
2005	595,915	5%	347,196	4%	58%	40,201	7%	11,001	2%
2006	632,759	6%	382,210	10%	60%	46,686	7%	11,527	2%

Source: *Business register held by the State Statistics Committee of Ukraine. Official title - Unified State Register of Enterprises and Organizations of Ukraine.*

<sup>44</sup> A standard 'survival rate' indicator, which shows the number of enterprises, that were born in year xx-n and survived to year xx as a percentage of all enterprises born in year xx-n.

## Comparison with the World Bank Group Entrepreneurship Database (WBG ED)<sup>45</sup>

The World Bank Group Entrepreneurship database, a joint effort led by the IFC SME Department and the World Bank Development Research Group, is known as the most comprehensive dataset on cross-country firm entry data available today. It includes cross-country, time-series data on the number of total and newly registered businesses and was collected directly from Registrars of Companies via questionnaires<sup>46</sup>.

Judging from the total number of entities, **WBG ED** provides data on **registered** entities and corporations in Ukraine despite the fact that its questionnaire contains the requirement that the data supplier should report only on businesses, which are considered to be active<sup>47</sup>. As specified in the methodological note accompanying Entrepreneurship Database<sup>48</sup>, for the sake of comparisons across countries, WBG ED covers only registered companies – but the Ukrainian State Statistical Committee clearly did not understand correctly or overlooked the request to exclude non-active entities. By contrast, the IFC Ukraine BEE Project dataset analyzed here provides data separating “**registered and active**” from “**registered but non-active**” entities.

Despite the fact that WBG ED and IFC Ukraine BEE data come from the same source and aim to provide the same kind of information, they present some differences.

A major difference comes from the definitions used. The IFC Ukraine BEE dataset was prepared by the State Statistics Committee of Ukraine (holder of the Business Registrar) according to the rules specified above (definition of enterprise that is built on legal forms, ownership and activities criteria, see also Chart 1). On the contrary, the dataset provided to WBG ED was not filtered to eliminate categories that are usually excluded from the internationally accepted definition of enterprise (see Table 2 for details). This also indicated that the Ukrainian State Statistical Committee does not do it as a matter of usual practice.

The differences apply both to “enterprises” and to “corporations”, as defined by the WBG ED questionnaire (see below).

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<sup>45</sup> <http://www.ifc.org/ifcext/sme.nsf/Content/Entrepreneurship+Database>

<sup>46</sup> [http://www.ifc.org/ifcext/sme.nsf/AttachmentsByTitle/Enterprise+Database+Survey+English/\\$FILE/English.pdf](http://www.ifc.org/ifcext/sme.nsf/AttachmentsByTitle/Enterprise+Database+Survey+English/$FILE/English.pdf).

<sup>47</sup> See footnote 4 to questionnaire.

<sup>48</sup> See p.16 of ‘Entrepreneurship and Firm Formation across Countries’, Policy Research Working Paper 4313, The WB Development Research Group, August 2007.

**Table 2: Comparison with WBG Entrepreneurship Database**

<b>Indicator</b>		<b>Of those in practice:</b>
	<b>Registered</b>	<b>Active<sup>49</sup></b>
Total entities in business registrar as of January 1, 2007	1,133,200	53%
of them:		
Total enterprises (as per WBG ED)	830,719	57%
Total corporations (as per WBG ED)	494,730	58%
Total enterprises (as per IFC Ukraine BEE)	632,759	60%
Total corporations (as per IFC Ukraine BEE)	443,046	60%

### **Implications for business demography statistics**

The above differences in methodologies have serious implications for understanding business demography in Ukraine.

1. The data reported by WBG ED more than twice (217%) overestimates the number of actually active enterprises. This is mainly due to:
  - a. Use of registered, rather than active entities. The number of active entities in Ukraine is less than two thirds (60%) of the number of registered entities.
  - b. Variation in the definition of enterprise. In accordance with a commonly internationally accepted definition of enterprise, the IFC Ukraine BEE dataset does not cover certain types of activity. As a result, the number of registered enterprises reported by IFC Ukraine BEE is about one quarter less (24%) than the same indicator reported by WBG ED.

This means that the level of entrepreneurship development, as measured by the number of enterprises per 1,000 active population, was actually *lower* than currently reported by WBG ED.

2. Because WBG ED data contains a large amount of non-active entities as well as entities, which should not be considered as enterprises, the analysis based on this total underestimates the actual growth rate of business in Ukraine over the last years. The average annual year on year change (growth rate) of the number of active enterprises over 2005-2006 was 7.1% comparing to 4.3% reported by WBG ED.

This means that entrepreneurship in Ukraine was *more dynamic* than currently reported by WBG ED.

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<sup>49</sup> Since WBG ED does not provide data on active entities, the respective number was derived from IFC Ukraine BEE dataset.

**Table 3: Implications for business demography statistics**

<b>Indicator</b>	<b>Legal entities, 2006</b>	<b>Legal entities per 1,000 active population<sup>50</sup></b>	<b>Year on year change (average for 2005, 2006)</b>	<b>Entry rate (average for 2005, 2006)</b>
Total registered enterprises (WBG ED)	830,719	25.65	4.3%	5.9%
Total registered corporations (WBG ED)	494,730	15.27	4.7%	6.4%
Total registered enterprises (IFC Ukraine BEE)	632,759	19.53	5.8%	7.1%
<i>Total registered corporations (IFC Ukraine BEE)</i>	<i>443,046</i>	<i>13.68</i>	<i>N/A<sup>51</sup></i>	<i>N/A</i>
Total active enterprises (IFC Ukraine BEE)	382,210	11.80	7.1%	<i>ca. 8%<sup>52</sup></i>
<i>Total active corporations (IFC Ukraine BEE)</i>	<i>267,727</i>	<i>8.27</i>	<i>N/A</i>	<i>N/A</i>

<sup>50</sup> Enterprise density per 1,000 people aged 15-64 as suggested in Luttikuizen, Hornberger and Coolidge

<sup>51</sup> Because the IFC Ukraine BEE project uses “enterprises” as per commonly accepted definition and not “corporations”, its historical dataset does not have data on “corporations” as per WBG ED definition – this was only calculated specially for the latest year, to show that the differences apply regardless of whether one looks only at “corporations” or at “enterprises”.

<sup>52</sup> The average entry rate of active enterprises is not computed since data on enterprises, which were newly registered and active in 2005, is not currently available. Given that entry rate of active enterprises was 8.1% in 2006, our rough estimate of it is 8%.

- **Latvia**

As of the late 1990s, Latvia was preparing itself for EU accession, and was undertaking a broad range of reforms. In 1999, the Government of Latvia committed itself, *inter-alia*, to the principle of sharing information across government ministries and agencies, developing e-government solutions, and reducing the compliance burden for businesses (i.e., by avoiding requirements for them to provide the same information multiple times to different government agencies). In particular, they combined company registration and tax registration, and introduced a “unique identification number” for both physical and legal persons, to be used for all interactions with government.

The **Central Statistical Bureau** has a database representing the intersection of businesses (legal persons) registered in the Commercial Registry and those "active" in the sense of showing economic activity in their tax filings to the State Revenue Service (SRS). They receive data regularly from the Commercial Registry, SRS, and other sources (e.g., re physical persons, farms, NGOs, public sector agencies, etc.). They see the balance sheet and financial information submitted by registered firms, and can update their own databases regularly. They have their own database of "economically active" firms, by type of organizational form, by "main activity" (four digit NACE), by size of firm, by ownership (public/private, foreign/domestic) etc.

Firms that show no economic activity (i.e., tax filings all "zero" or failing to file) for two years are considered "dead" in the Statistical Business Registry.<sup>53</sup> If it re-starts after that, it is counted as a "new company." They do structured annual surveys of about 15,000 firms (out of about 55,000 economically active firms as of 2007). The Statistical agency also has detailed data on investment, broken down by source of financing and "main activity" and other categories.

The **commercial registry** in Latvia was computerized and outsourced, and companies can update their information on-line. The Company Registry has a contractual relationship with Lursoft until 2010, when it will be re-bid.<sup>54</sup>

There are varying definitions of an "active" company in Latvia. The Commercial Registry and Lursoft use "active registrations in previous year + new registrations - business terminations in the same year". Lursoft also can show the companies that filed their annual financial reports in a particular year (noting that their data may show an increase for a past year if, e.g., someone files it late). Thus for 2005, the Commercial Registry has over 80,000 firms designated as "active" by their definition. Lursoft shows slightly over 55,000 companies filed financial statements in 2005, while the Statistical Business Registry shows 49,881 "active" by their definition (following Eurostat: if a company fails to file for taxes two years in a row they are considered "dead.")

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<sup>53</sup> They have reports since 2004 on "business demography," available at <http://data.csb.gov.lv>. (but only in Latvian language)

<sup>54</sup> Their web-site is <http://www.ur.gov.lv>.

The State Revenue Service (SRS) sees about 65% of firms that are registered are "active" and paying taxes. SRS closely tracks the amount of debt owed by companies to the state, but does not pay as much attention to the actual number of firms that are active or inactive. Data on that come from the SRS regional offices and is shared with the Statistical Business Registry, but is not actively tracked by the central SRS. They currently have 141,000 registered, "active" (i.e., non-liquidated) tax payers in 2007 including sole proprietors.

### **Summary comparison of business statistics in Latvia for 2005:**

World Bank Entrepreneurship Database <sup>55</sup> :	193,893
Company Registry (incl. sole proprietors):	105,690
Company Registry (firms/legal entities):	81,128
Company Registry (firms filing financials):	55,103
CSB "active firms" (firms filing for taxes):	49,881

- **Peru:**

Peru has a number of registration organizations at both the municipal and national level, including the national registry of "legal persons" (SUNARP), the Lima Municipality registry of firms, the national tax registry (SUNAT), the national statistical agency (INEI) and the Ministry of Labor. Of course, all these agencies have different mandates and therefore have their own definitions and classifications of firms.

SUNARP focuses on legal entities and ensures their legal status within Peru. They report they have a problem of many "inactive" firms still in the registry, and they can't be sure which firms in the registry are active or not. Fees for de-registration are not expensive, but there is a procedure that has to be followed – the applicant needs to file the "minutes" of dissolution and get them notarized (cost about S30 - 50).

All firms that are registered in SUNARP must register with SUNAT in the RUC. They expect that in the future, it may be possible for firms to bypass notaries and register themselves on-line, and simultaneously register in the RUC. Sole proprietors are generally not registered in SUNARP, but are supposed to register with SUNAT.

There was a consensus among all the agencies listed above that the most accurate and up to date data about active companies in Peru would be the tax database (SUNAT). They reported they have 4.5 million registered taxpayers, of which 3.8 million are currently "active". Of the latter, almost 75% are natural persons. The other 25% (about 1 million) are businesses, including mostly natural persons (sole proprietors and professionals). Their database is called "RUC" (Unified Taxpayers Registry or Registro Unico de Contribuyentes in Spanish).

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<sup>55</sup> Source cited by ED is "Ministry of Justice".

They get about 45,000 new registrations (of all kinds) per month. Firms that fail to file for six months are automatically de-registered (roughly 8000/month, or a total of about 700,000 since RUC was created in 1993). Firms can also ask to be "suspended" for up to a year (if they don't re-activate within a year, they are automatically de-registered). There had been about 10,000 suspensions by JPs and 37,000 by NPs for 2007 as of October. If they file "0" income, and if this continues for more than a year they are declared "inactive."

<b>Business/Vendor/Company</b>				
<b>REGIME</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007 *</b>
GENERAL REGIME	219,327	251,191	207,782	221,349
RER	16,569	24,298	17,130	21,145
RUS	1	13	2	2
OTHER REGIMES 3/	2,777	3,705	4,042	3,912
<b>TOTAL</b>	<b>238,674</b>	<b>279,207</b>	<b>228,956</b>	<b>246,408</b>

<b>STATE</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007 *</b>
ACTIVE	2,917,980	3,283,378	3,482,079	3,807,617
TEMPORARILY SUSPENDED	266,843	206,454	202,421	208,136
Voluntary liquidations	220,995	260,314	301,389	329,034
Involuntary liquidations	1,109,784	1,162,458	1,370,817	1,375,540
<b>TOTAL</b>	<b>4,515,602</b>	<b>4,912,604</b>	<b>5,356,706</b>	<b>5,720,327</b>

Firms that are de-registered either voluntarily or involuntarily have their banks notified by SUNAT, and their accounts are de-activated.

The State Statistical Agency (INEI) was able to verify the accuracy and currency of the RUC database at SUNAT. They used it last year, starting with a "universe" in the RUC of about 800,000 "active" companies (including sole proprietors), and drawing a sample of 20,000 from 13 different sectors. Most large firms (about 5000) were included in a mandatory survey. There were about 8000 medium firms. Of the (about) 7000 "small" firms, at least 10% were "lost or closed" and up to a maximum of 20% were inactive or had moved to another address. A smaller percentage had changed their activity.

## Summary comparison of business statistics in Peru, 2005:

World Bank Entrepreneurship database (2005):	554,135
Tax Registry (companies)	279,207
Estimate of "active companies" (max) <sup>56</sup>	237,000
Estimate of "active companies" (min) <sup>57</sup>	186,573

- **Macedonia**

The Government of Macedonia recently enacted a number of reforms to overhaul their registries and consolidate them in a "Central Registry". They report they have regular sharing of data between the Central Registry, Statistical office, Public Revenue office, and related agencies (e.g., customs). They state they are getting harmonized with Eurostat, re "main activities" (NACE 4 digit), and other relevant definitions and categorization.

Before 2006, most company registrations took place in the courts, and companies were also required to register with the Public Revenue Office and the Statistical Agency. As of Jan. 1, 2006, there is a "one stop shop" for basic registration, a unique ID shared across government agencies (with various "sub-numbers" as relevant for specific purposes), and a protocol for sharing information across the relevant government agencies. The courts are no longer part of the process of company registration, and the Central Registry is the body responsible for registration (it was built up from the former "ZPP" central payment office).

Prior to 2006, Macedonia suffered the usual problems of company statistics. There were few legal or economic incentives for companies to report changes in their address, status, etc. Now there is a requirement for annual submission of financial reports, and a legal protocol to remove a company that fails to report for three years in a row. They are also introducing full electronic registration and will soon allow electronic submission of annual financial reports.

Before the reform, the statistical database had about 180,000 entities (including private commercial companies, but also public sector entities such as schools, non-profit entities such as churches and associations, etc.). Only about 55,000 submitted annual accounts in 2005; of which about 4000 submitted financial reports indicating "no financial activity." There were over 84,000 firms entered into the electronic registry through conversion of court files in 2006 (a number of which were subsequently deleted as inactive). The Central Registry reported that both registration and de-registration activity is increasing. De-registration is still a somewhat cumbersome process, including public announcement and a waiting period. It takes about 3 - 4 months.

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<sup>56</sup> Estimate based on statistical agency's recent survey sample

<sup>57</sup> Estimate based on tax registry's active/total (including sole proprietors)



The Public Revenue Office (PRO) confirmed that they share data on companies with the Central Registry and can alert the Central Registry if, e.g., a company has been audited and found to have submitted incorrect financial information. More commonly, the two agencies compare the financial information they receive from a company (which is supposed to be in agreement). If a taxpayer submits contradictory information to the Central Registry and the PRO, they are requested to make necessary corrections and can be pursued by the PRO.

The statistical agency promised to send historical data from about 2000 - 2005 (before the reform) but do not yet have a complete database ready for the new data after the reform. They plan to do surveys to verify data (e.g., address, main activity, etc.).

### **Summary comparison of business statistics in Macedonia for 2005 and 2007:**

World Bank Entrepreneurship database (2005):	157,973
Of which filed annual accounts (2005, estimate)	55,000
Company Registry (thru conversion of court files) 2007:	84,089
No. "private trade companies", sole proprietors in reg.2007:	71,118

- **South Africa**

In South Africa, there is an official policy of cooperation between the relevant government agencies to combine their data into an "integrated business registry" and to share information on a regular basis, but this is still a work in progress. For example, new companies who register with the Company and Intellectual Property Registry (CIPRO) are automatically passed along to South Africa Revenue Service (SARS), and de-registrations are similarly shared, at least in theory.

CIPRO registers "legal entities", but there is no formal requirement for registration of "sole proprietors" or "partnerships" with CIPRO. As far as SARS is concerned, sole proprietors and partnerships are liable for income tax as individuals, and their companies are not recognized as tax payers in their own right.

CIPRO readily admitted that they have a lot of old data, and that companies lack an incentive to formally "de-register." While they receive notice of "deregistration" from SARS, they are also taking steps to introduce a new "duty system" that will require firms to pay a small fee each year to remain on the "active list" of the registry, as a way to help ensure that the registry is more reliable and up to date. An amendment to the company law is expected to be enacted later this year. CIPRO also records liquidations and conversions (e.g., from a closed corporation to a private company), but not "mergers," which are apparently intended only for public corporations.

SARS has its own database of business taxpayers (including sole proprietors), and defines the following categories:

- Active and still trading
- De-registered
- Dormant
- In liquidation
- In suspension
- Unknown

It follows established policies and procedures for moving taxpayers from one of these categories to another, and it has annual data on each of these categories, going back several years.

The table below shows SARS taxpayers for 2006, (including sole proprietors as well as legal entities), those counted as fully “active” and the total in their registry, by turnover band.<sup>58</sup>

Turnover bracket (Rands)	TAXPAYER STATUS	
	ACTIVE	Grand Total <sup>59</sup>
> 500,000,000	4	5
50,000,000 - 100,000,000	36	50
30,000,000 - 50,000,000	55	71
20,000,000 - 30,000,000	68	90
10,000,000 - 20,000,000	160	232
5,000,000 - 10,000,000	314	455
2,500,000 - 5,000,000	543	790
1,000,000 - 2,500,000	1,307	1,929
300,000 - 1,000,000	3,975	5,982
20,000 - 300,000	29,066	45,892
0 - 20000	550,010	1,207,146
(Turnover unavailable)	442,020	752,216
<b>Grand Total</b>	<b>1,027,558</b>	<b>2,014,858</b>

### Summary comparison of business statistics in South Africa, 2005 and 2007:

World Bank Entrepreneurship database (2005):	507,813
CIPRO (excluding “close corporations”, 2007):	425,107
CPRO (including “close corporations”, 2007):	1,701,264
SARS total (including close corporations):	2,014,858
SARS “active companies” including close corporations:	1,027,558

<sup>58</sup> Data provided by SARS, Feb. 2007.

<sup>59</sup> Includes, in addition to “active” taxpayers, those who are “dormant” (not trading), “suspended” (return to the taxpayer is not being issued), “address unknown” and those in the process of closing down.

## Other African Countries

In general a precondition of comparing countries is that use is made of harmonized data that means that the data set of one country is at the level of the definitions and the individual units comparable with the other country. Therefore it can make a difference which kind of sources is being used, because different sources in different countries are likely not to be harmonized. The matter is whether active and not active units are being used in one data set, whether the informal sector is part of the data, and if so whether similar definitions are used, or completely different ones.

An example can help us to understand this. It is possible to compare information from a developed country with lesser developed countries, even when the data is completely incomparable. The differences in data show at the same time differences in realities and in registration methods, between the benchmark, the developed country, and between the selected African countries. The Netherlands was chosen as a benchmark in this exercise, to compare with African countries since it is a middle sized developed country with many small firms and a well developed registration system for enterprises. The African countries were chose because they were easy to visit by one of the authors of this paper We want to emphasize that the data of all countries in principle cannot be compared, but nevertheless we can draw lessons from looking at this data.

Table 1: Comparison of not comparable information from The Netherlands with 6 selected African Countries.

Countries	Registered units in stats	Registered units in stats	Popu- lation	reg. units per 1000 inhabitants	reg. units per inhabi tant	reg. units per inhabi tant	reg. units per inhabitan t	Differences with Neth. = Active
	total	active	*1 million	total	tot. active	Index total NL=100	index active NL=100	factors
Netherlands	900000	719405	16	56.3	45	100	100	
Tanzania	27962	NA	38	0.7		1	2	61
Kenya	43057	NA	34	1.3		2	3	36
Uganda	160883	NA	28	5.7		10	13	8
Ghana	26493	NA	22	1.2		2	3	37
Namibia	40000	NA	2	20.0		36	44	2
Botswana	20000	NA	2	10.0		18	22	4
Total of 6	318395		126	2.5		4	6	18

The number of units compared are, by definition, not comparable. In The Netherlands agricultural units (95.000) are excluded. In Tanzania are registered all ACTIVE units that are profit making and not profit making (mostly governmental), of at least five employed persons.<sup>60</sup> In Uganda the information of 2002 is about all registered ACTIVE

<sup>60</sup> In the cases of Tanzania, Uganda and Kenya, “active” firms were identified on the basis of surveys by the statistical agency for firms with more than five employees (including government-owned enterprises).

firms, divided between formal (5 and more employed persons) and informal, defined by having less than 5 working persons. The size of the included informal sector (as defined here) in Uganda is 150,000 units. For Kenya (2006) information is presented of all active firms of what they call the Modern sector, that excluded all small firms of agricultural and non agricultural nature (small is not defined). Included are all firm with a limited liability, including those of the government and all units in the urban areas. The Ghana data of 2006 is limited to all Mining and Industry units, etc. For Namibia and Botswana we only have general estimates of speakers of the statistical offices.

This information shows that only in The Netherlands can an explicit difference be made between active and not active units. The data allows a comparison between the African countries and the benchmark as far the number of registered units per 1000 inhabitants is concerned. This is called the density of units. The index for the active units in the Netherland (=100) shows the number of active units in the compared country, per 1000 inhabitants. These differences also can be expressed as a factor. This means that in The Netherlands the density of commercial enterprises is 61 times higher compared with the fdata on Tanzania. The data also shows that we have an extreme problem in comparing these countries.

Table 2: Statistical Business Register information compared between The Netherlands and 6 African countries for 2005.

(The Netherlands is about employees in stead of working persons.)

Country	Total units	workforce	units with <5 employed	units with >5 - 99 employed	units with 100 plus employed	100 plus, % of share of workforce	units with <5 employed as a share of total units
Netherlands = 2005	719,365	8,799,000	614,215	91730	13420	60	85
Tanzania	27,962			26995	967		
Uganda	160,883	444,118	150,138	10745	254		93
Ghana	26,493	275,495	14,438	14135	303		54
Kenya	43,057	1,807,712	14,073				33
Namibia	40,000						
Botswana	20,000						
Total	318395	2,527,325	178,649	51875	1524		

This table is first of all useful to show the differences. These differences show not only numerical differences but also the enormous differences between the types of registers. Only the data from Uganda looks comparable with the Netherlands in a very limited way. But this is just a first impression. The number of units in Uganda cannot really be compared with The Netherlands, nor can the other countries be compared, because

Uganda consists in fact of almost 90% “counted informal units.” The result is that the share of the small units (as a ratio of the total) seems to be comparable with the share of small units in the Netherlands. However, the underlying figures are not comparable and therefore the ratios are not comparable. For Ghana and Kenya it shows that the share of the small units is also different. The conclusion is that all three countries in fact have only information over a very limited part of their economic activities.

In the table below we present information on the growth of the population and of the labor force. That is essential to understand the relation between enterprises and the labor force.

Table 3: Comparisons of the development of the population with the labor participation rate since 1990 for The Netherlands and six African countries.

Country	Population in 1990	Population in 2005	growth since 1990 in %	labor participation rate in 1990 Male	labor participation rate in 2006 Male	change rates Males since 1990
Netherlands	15	16.3	8.7	71	73	2
Tanzania	26.2	38.3	46.2	91	90	-1
Kenya	23.4	34.3	46.6	90	90	0
Uganda	17.8	28.8	61.8	92	86	-6
Ghana	15.5	22.1	42.6	80	75	-5
Namibia	1.4	2	42.9	65	63	-2
Botswana	1.4	1.8	28.6	77	70	-7
Average	85.7	127.3	48.5	83	79	-4

This table shows the enormous growth of the population in the African countries compared with the growth in The Netherlands. Apart from Botswana is the growth of the population in these countries more than 5 times higher compared with the Netherlands. Further we see in the African countries a decline of the labor force participation, and an increase for The Netherlands. This can be understood in different ways. It is important to note that only a very small part of the labor force in African countries work in the formal sector, see next table.

Tables 4 shows that compared with the benchmark country (the Netherlands) only a very small part of the workforce in the African countries is working in these registered units. This is particularly relevant for the workforce in the age group 15-64. Of the 1000 persons in the Netherlands, where 801 work in registered firms, the situation is different in Africa. In Kenya only 90 out of 1000 work in registered firms, in Uganda 32 out of 1000 (including the “informal” sector), and in Ghana 21 out of 1000 work in registered units.

Table 4. Comparison of the benchmark with three African countries for the workforce in registered units as part of the total population and the age group 15-65.

Country	Information on businesses	Population in 2005	age group 15-64 in 2005	workforce in registered units	workforce in registered units per 1000 inhabitants	workforce in registered units per 1000 inhabitants in age group 15-65
Netherlands	all businesses	16.3	10986200	8,799,000	540	801
Tanzania	all units 5 and plus	38.3				
Kenya	modern sector	34.3	20020200	1,807,712	53	90
Uganda	formal and informal	28.8	13910400	444,118	15	32
Ghana	only industry	22.1	13271000	275,495	12	21
Namibia		2				
Botswana		1.8				
Total/Average		127.3	47201600	2,527,325		

The size of the labor force in the Netherlands in registered units is, roughly comparable with Uganda and Ghana, although those countries have has a much larger population. This shows the demographic differences with The Netherlands and the share of the workforce in the registered sector as part of the total workforce. In other words, they key question is: what are the rest of the people in Kenya and Uganda and Ghana doing, those who are not working in registered units.

Table 5: Indexes that present information on the size of the workforce in registered units, compared with the benchmark for the total population and the age group 15-65 (per 1000).

Country	Information on businesses	population in 2005	age group 15-64 in 2005	workforce in registered units	Index 540=100	Index 801= 100
Netherlands	all businesses	16.3	10986200	8,799,000	100	100
Tanzania	all units 5 and plus	38.3				
Kenya	modern sector	34.3	20020200	1,807,712	10	11
Uganda	formal and informal	28.8	13910400	444,118	3	4
Ghana	only industry	22.1	13271000	275,495	2	3
Namibia		2				
Botswana		1.8				
Total/Average		127.3	47201600	2,527,325		

This table shows again, but now as an index, that the share of the labor force in African countries that works in registered units is extremely small compared with the benchmark

country. The workforce in the registered units in the three countries (Kenya, Uganda and Ghana) for which we have this data is much less compared with The Netherlands. But even between the African countries there are major differences. In Kenya the level of the workforce in registered units as part of the age group 15 – 65 years, is higher compared with the two other countries. This information reinforces the question about the quality of this data and the nature of the work that is done by the not-registered workforce. Are they working in the informal sector, in not-registered units as in Uganda, in the very small units in Kenya and Tanzania, or in subsistence activities in agriculture? Only a labor force survey can inform us about how the massive labor force in Africa is involved in production processes.

### 3. Structural differences and a conclusion.

The countries compared show that in Uganda where the “informal” sector (150,000) is included, only a fraction of the workforce is working in registered units. In Kenya a larger part of the relevant age group works in what is called the modern sector. That leaves the informal sector in Kenya, as defined in Uganda, out of the picture. The workforce in Ghana is only related to a part of the economy. The actual workforce in the formal sector in Ghana for this reason needs to be much larger. This means that the data presented in these tables strongly underestimates the number of firms and the workforce that are active in these three African countries.