

Working paper Series 2013

No.13-143

“Enabling Productive entrepreneurship in Developing Countries: Critical Issues in Policy Design”

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Published: January 2013

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ABSTRACT

This paper reviews three strains of recent empirical research on entrepreneurship in developing countries: the relationship between entrepreneurship and economic growth; the importance of individual characteristics in entrepreneurial choice and success; and the impact of the business environment on entrepreneurial activity. It identifies policy design as a fourth, neglected area of study and explores issues of magnitude, sequence, and speed. It conducts an empirical test of the impact of speed of reform on new firm entry across 97 developed and developing countries and finds that speed matters more in poorer countries. The results enhance our understanding of entrepreneurship policy in developing countries.

ACKNOWLEDGEMENTS

I am grateful to my father and my colleagues at the London School of Economics for their support and thoughtful comments. All errors are my own.

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‘How the entrepreneur acts at a given time and place depends heavily on the rules of the game—the reward structure in the economy—that happen to prevail.’¹

- William Baumol

SECTION I: INTRODUCTION

Over the last ten years, research on entrepreneurship in developing countries has increased more than ten-fold thanks, in large part, to the availability of new country-, firm- and individual-level data. Between 2001 and 2012, 1967 articles on entrepreneurship in developing economies were published in peer-reviewed academic journals, up from just 123 articles on the same topic between 1990 and 2000.² Traditionally a mainstay of the business management literature, in which the majority of research has focused on developed, industrial economies, entrepreneurship has become increasingly important to understanding the process of economic development, particularly in countries transitioning to modern market economies (Lerner and Schoar, 2010).

Economists have long acknowledged the critical role that entrepreneurs play in bearing risk in uncertain business environments (Knight 1921), driving competition and innovation (Schumpeter 1942), creating markets (Coase 1991), and generating employment. It is only recently, however, that these theoretical assertions have been subject to rigorous empirical testing both in developed and developing countries.

New datasets from the World Bank and the Global Entrepreneurship Monitor (GEM) provide cross-country and time series data that make it possible to compare trends in entrepreneurship

¹ 1990, p. 894

² As of 16 Aug 2012; based on a search of English language, peer-reviewed journal articles on the ProQuest Entrepreneurship Database; search term: ‘entrepreneurship in developing countries’ (available at: <http://search.proquest.com/gate2.library.lse.ac.uk/entrepreneurship?accountid=9630>)

across regions and income groups. As a result, academics and policy-makers are able to evaluate empirically the conventional wisdom regarding entrepreneurship and begin to acquire a more nuanced understanding of the contribution of entrepreneurship to development. The current empirical literature relating to developing countries has moved along three major tracks: 1) the relationship between entrepreneurship and economic growth 2) the importance of individual characteristics in the decision to become self-employed and the outcomes of entrepreneurial activities and, 3) the effect of the institutional environment on opportunities to pursue entrepreneurship.

One area that has been relatively neglected in the literature is the importance of policy design in enhancing opportunities for entrepreneurs. Policy design generally refers to the speed, sequence, quality, and magnitude of reforms. The manner in which policies are implemented may affect economic outcomes for two main reasons. The first is political economy; because policies are not implemented in a vacuum, organized interest groups can influence which policies are implemented and when.³ The speed and sequence of a given set of reforms may, therefore, affect the potential for rent-seeking and elite capture of the policy process. The second is complementarity or the presence of synergy in reform such that the implementation of several reforms together enhances the impact of each one.

Though well-documented in the United States and Europe (Walburn 2005; Gilbert, Audretsch, and McDougall 2004), public policy towards entrepreneurship remains understudied in much of the developing world despite its growing prevalence in national development strategies. Often, developing country governments implement policies that are based on the experiences of advanced economies rather than on the specific institutional

³ Grossman and Helpman (1994) make this argument with respect to a government's choice of trade policy.

contexts of their own economies and, as a result, entrepreneurship policies in those regions have not generated similar levels of growth (Schott and Jensen 2008). For policy-makers seeking to replicate the successful experiences of developed, industrial economies, an understanding of policy design is crucial; a better understanding of which policies are most important and how they should be implemented can help policy-makers in developing countries match their choice of policy and implementation strategy to their desired outcomes.

The main objectives of this dissertation are to review the various strands of recent empirical literature that link entrepreneurship and development in developing countries and to analyse the importance of policy design in detail as this topic has been relatively neglected in the literature. While the literature on entrepreneurship in OECD countries has been surveyed many times,⁴ there have been very few attempts at critically examining the role of entrepreneurship in developing countries⁵ and none, to the author's knowledge, that cover the literature enabled by the availability of new global datasets in the last decade or so.

The remaining sections are organized as follows: Section II provides a critical survey of recent empirical literature on entrepreneurship in the developing world. It contains a discussion of each of the key tracks along which the literature has moved and identifies relevant gaps for further research. Section III provides a discussion of the issue of policy design and tests for the effect of reform speed on entrepreneurship. It finds that a faster pace of reform increases levels of productive entrepreneurship in poorer countries. Section IV concludes.

⁴ Most recently by Audretsch 2002; Karlsson, Friis and Paulsson 2005; Carree and Thurik 2005; and Audretsch 2006.

⁵ See Bruton et al. 2008.

SECTION II: LITERATURE REVIEW

In recent years, the development literature has seen a revival of interest in the role of entrepreneurship in economic development due in large part to the availability of new data. This section provides an overview of new databases and key variables of interest for measuring entrepreneurship. It then reviews empirical research that has utilized this data.

2.1 The Data

The two main sources of data on entrepreneurship and private sector development in low and lower-middle income countries are the World Bank and the Global Entrepreneurship Monitor (GEM).

Over the last decade, the World Bank has compiled five relevant databases for the study of entrepreneurial activity around the world. The Doing Business (DB) database and World Business Environment Survey (WBES) are useful for measuring the quality of the institutional and regulatory environment facing entrepreneurs in the formal sector and, by extension, the barriers to formality faced by those operating in the informal sector.

Entrepreneurial Snapshots (WBGES) and the Micro, Small, and Medium Enterprise Country Indicators (MSME-CI) database provide time-series data on firm registration. The Enterprise Surveys (ES) provide further measures of the business environment and entrepreneurial activity based on direct interviews with individual entrepreneurs.

The Doing Business Indicators are the largest and most up-to-date time series data on private sector reform, covering 183 economies over a ten-year period from 2003-2012. Doing Business measures the ease of doing business in a country based on ten areas of regulation,

which cover many (but not all) of the factors relevant for operating a formal sector business. Countries are ranked in an index from 1 to 183, where a lower rank is associated with a more business-friendly economic environment. Doing Business is a good source of data on private sector development because it specifically measures the regulatory environments faced by small and medium-sized domestic firms in the formal sector (SMEs). These firms are more likely to be operated by non-elite entrepreneurs and, as a result, they are most likely to benefit from regulatory reform than improves the business environment.

The GEM research program was developed in 1997 to determine how variations in entrepreneurial activity were associated with national economic growth. Since then, it has expanded to include individual attitudes and aspirations towards entrepreneurship. Most importantly for development researchers, the GEM survey data distinguishes between opportunity-driven and necessity-driven entrepreneurship, which is particularly useful for understanding why higher rates of self-employment in some developing countries do not necessarily correspond with better economic outcomes.

Table 1, below, provides a summary of these six databases, the methodologies used to construct them, and their strengths and limitations. Table 2 highlights selected variables from these databases that can be used to measure different aspects of entrepreneurship and private sector development. Many of these variables have been used in the literature that will be discussed below.

Table 1. Databases Covering Entrepreneurship and Private Sector Performance in Developing Countries⁶

Database (Source)	Description/Methodology	Advantages	Limitations
Doing Business (World Bank IFC)	<ul style="list-style-type: none"> Survey of over 9,028 legal experts in 183 countries Conducted annually since 2003 Ranks countries according to quality of business environment across 10 areas of regulation: starting a business, dealing with construction permits, getting electricity⁷, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts, and resolving insolvency 	<ul style="list-style-type: none"> Standardized and comparable across countries Inexpensive; easily replicable Extended time series Largest sample size Measures quality of private sector institutions 	<ul style="list-style-type: none"> Includes only representative formal sector firms in an economy's largest business city Does not measure all aspects of business environment or all areas of regulation Does not account for corruption
World Business Environment Surveys (World Bank)	<ul style="list-style-type: none"> Survey of firm managers/owners in over 10,000 firms across 80 countries + 1 territory Conducted in 1999-2000 Covers corruption, judiciary, lobbying, and quality of business environment 	<ul style="list-style-type: none"> Large sample size 	<ul style="list-style-type: none"> Limited time series
Entrepreneurial Snapshots (World Bank)	<ul style="list-style-type: none"> Survey of business registries in 112 countries Conducted between 2004-2009 Provides cross-country data on new business registration and entry density 	<ul style="list-style-type: none"> Standardized and comparable across countries 	<ul style="list-style-type: none"> Limited to formal sector LLCs
Micro, Small, and Medium Enterprise Country	<ul style="list-style-type: none"> Survey of MSMEs across the formal sector in 132 economies and the informal sector in 16 economies, based on a country's own definition of micro, small, and medium 	<ul style="list-style-type: none"> Appropriate for country case studies Extended time series Includes informal 	<ul style="list-style-type: none"> Data are not standardized across countries or over time

⁶ Other notable databases, excluded here because they cover mostly developed economies, are the Flash Eurobarometer Survey on Entrepreneurship compiled by the European Commission (<http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/eurobarometer/>) and the OECD Entrepreneurship Indicators (<http://www.oecd.org/industry/entrepreneurshipandbusinessstatistics/theentrepreneurshipindicatorsprogrammeinformation.htm>).

⁷ Introduced in 2010

Indicators (MSME-CI) (World Bank IFC)	<ul style="list-style-type: none"> • Conducted between 1990-2010 • Covers size breakdown of firms in the economy, total number of MSMEs, MSME's per 1,000 people, and MSME employment as % of total employment 	sector	
Enterprise Surveys (World Bank IFC)	<ul style="list-style-type: none"> • Survey of firm managers/owners in over 130,000 firms across 135 countries • Conducted annually since 2002 • Covers corruption, crime, finance, gender, informality, infrastructure, innovation, performance, regulations and taxes, trade, and workforce 	<ul style="list-style-type: none"> • Captures constraints faced by individual entrepreneurs • Includes informal sector data for selected countries 	<ul style="list-style-type: none"> • Survey data is costly to collect
Global Entrepreneurship Monitor (GEM)	<ul style="list-style-type: none"> • Survey of over 150,000 individuals (entrepreneurs and experts) across 52 economies, divided into an Adult Population Survey (APS) and a National Expert Survey (NES) • Conducted annually since 1999; data available from 2001 • Covers entrepreneurial activity, individual attitudes and perceptions towards entrepreneurship, and individual aspirations for the future of their business 	<ul style="list-style-type: none"> • Standardized and comparable across countries • Captures behavioural aspects of entrepreneurship • Distinguishes between necessity and opportunity entrepreneurship 	<ul style="list-style-type: none"> • Unbalanced panel; different countries are included in the sample in different years • Costly to collect • Does not distinguish between formal and informal sectors • May overestimate entrepreneurial activity

Table 2. Selected Indicators for Measuring Entrepreneurship

Variable	Definition	Source
TEA	Total Early-Stage Entrepreneurial Activity; percent of 18-64 age group who are either a nascent entrepreneur (actively involved in starting a new business) or owner-manager of a new business (less than 42 months old).	GEM
TEA OPP	Opportunity-Driven Entrepreneurial Activity; percentage of those involved in TEA who claim to be driven by opportunity as opposed to finding no other option for work	GEM
TEA NEC	Necessity-Driven Entrepreneurial Activity; percentage of those involved in TEA who are involved in entrepreneurship because they had no other option for work	GEM
Entry Density	Number of newly registered limited liability companies per 1,000 working-age people (aged 15-64)	WBGES
MSME employment	Share of total employment accounted for by the micro, small, and medium enterprise sector	MSME-CI
MSMEs per 1,000	Number of micro, small, and medium enterprises as a proportion of the population	MSME-CI

2.2 *The Literature*

The precise definitions and measurements of entrepreneurship established in this new data have enabled academics to more rigorously test common assumptions about the relationship between entrepreneurship and private sector development and contribute to a theoretical framework more applicable to developing countries. Recent research on entrepreneurship falls into three broad categories. The first explores the relationship between entrepreneurship and economic growth. The second takes a micro approach by looking at individual characteristics that contribute to successful entrepreneurial activity. The third considers the importance of the institutional environment on private sector development.

2.2.1 *Entrepreneurship and Economic Growth*

Conventional wisdom regarding the relationship between entrepreneurship and economic growth suggests that entrepreneurs promote growth by creating new firms and new jobs,

enhancing competition, and increasing productivity by adopting and introducing new technologies. Indeed, recent scholarship has found these patterns to be true in many advanced economies (Feldman and Audretsch 1999; Carree and Thurik 2005; van Praag and Versloot 2007). Among developing countries, however, the effects of entrepreneurship on growth are less straightforward.

In 2000, the GEM Executive Report found that entrepreneurship, defined as new start-up business activity, and economic growth were positively and significantly correlated. 'All countries with high levels of entrepreneurial activity have above average economic growth,' the report argued (Reynolds et al, 1). Since then, with the expansion of the dataset to include more developing economies, the GEM data has actually been used to refute the conventional wisdom about the relationship between entrepreneurial activity and growth in developing countries. The most recent GEM data from 2011 covers 52 economies of which 25 are classified as low income, lower-middle income, or upper middle income based on the World Bank's definitions. The latest executive report presents a revised model of entrepreneurship where the economic role of the entrepreneur varies according to a country's stage of economic development (Bosma et al 2012).

Recent empirical literature has validated this new approach. Using an indicator for total early-stage entrepreneurial activity (TEA) from the GEM database, van Stel, Carree, and Thurik find that the impact of entrepreneurial activity on national growth depends on a country's level of per capita income (2005). Entrepreneurship has a differential effect on growth rates depending on the income level of a country such that TEA is associated with positive growth in relatively rich countries and negative growth in relatively poor countries. They suggest that this relationship may be due to the fact that poorer economies have fewer large firms, which

often provide valuable on-the-job training to would-be entrepreneurs and create opportunities for smaller firms to act as suppliers. Another possible explanation they offer is that poorer countries have lower levels of human capital, which limits the potential for growth-enhancing knowledge spillovers and reduces the proportion of opportunity-driven entrepreneurs relative to necessity-driven or remedial entrepreneurs. Thus, instead of facilitating knowledge spillovers across firms and individuals, increasing competition, and enhancing the diversity of firms, many entrepreneurs in the developing world appear to be mimicking existing business models simply to make ends meet. These explanations, however, describe a link between the *level* of income and the level of entrepreneurial activity. They do not necessarily show a link between *growth* (and changes in the level of income) and the level of entrepreneurial activity.

To do this, it is useful to distinguish between types of entrepreneurial activity. van Stel et al. allude to entrepreneurship taking a different form in developed versus developing countries, using terms like ‘marginal’ and ‘innovative’ entrepreneurs, but they do not explicitly distinguish between these types of entrepreneurship in their empirical model (319). It is possible to do so from the information in the GEM database which allows for differentiation between necessity-driven entrepreneurship (TEANEC) and opportunity-driven entrepreneurship (TEAOPP). The former concept accommodates the fact that many self-employed persons may have become self-employed out of necessity or economic hardship and their move into self-employment and entrepreneurship does not necessarily carry positive connotations. Not all entrepreneurship is economically productive, as one might gather from reading literature focused largely on the OECD countries.

Indeed, it turns out that developed and developing countries have very different profiles of entrepreneurship. TEAOPP is much higher in richer countries while TEANEC is much higher in poorer countries.⁸ Indeed, the relationship between entrepreneurship and levels of economic development (proxied by per capita income) is better described as U-shaped rather than linear; low income countries have high levels of necessity entrepreneurship in agriculture and small-scale manufacturing, middle income economies have higher levels of wage labor due to the growth of manufacturing, and high income economies see higher levels of opportunity entrepreneurship as manufacturing declines and the services and IT sector grows (Acs 2006).

The distinction between opportunity induced entrepreneurship (TEAOPP) and necessity induced entrepreneurship (TEANEC) provides a possible explanation for the negative relationship between TEA and economic growth found by van Stel et al. It is possible that higher levels of TEA in poorer countries are associated with worsening macroeconomic conditions which push people into low productivity self-employment as part time farmers or microenterprise owners. So while TEA is rising, it is really TEANEC that is growing within the overall measure of TEA. In this explanation, the negative relationship between growth and entrepreneurship in poorer countries is driven by poor or worsening economic conditions, suggesting that empirical tests should control explicitly for this variable.

This distinction between necessity and opportunity induced entrepreneurship will be pursued further in a later section. The next section provides an overview of the importance of individual characteristics to entrepreneurship.

⁸ Ardagna and Lusardi (2008) report that more than 66% of self-employed individuals in poor countries engage in remedial entrepreneurship while only 21.9% are remedial entrepreneurs in high-income countries (23).

2.2.2 *Individual Characteristics Matter*

Individual characteristics of an entrepreneur may affect his or her ability to contribute productively to economic performance. The World Bank Enterprise Surveys and GEM have made it possible to measure the effects of key characteristics, such as gender, education, family/social networks, parental self-employment, risk aversion, and skills on private sector outcomes in developing countries.

Gender has been increasingly studied due to the availability of gender-specific measurements of entrepreneurship. It is one of the 11 topics covered by the Enterprise Surveys, which report the percent of firms with female participation in ownership as well as the percent of firms with a female top manager. Similarly, GEM provides data on total entrepreneurial activity disaggregated by gender, which makes it possible to measure the number of female entrepreneurs as a proportion of a country's female working age population. Development scholars have used this data to show that female-owned business in developing countries tend to be smaller and less productive than male-owned firms, even after controlling for firm- and industry-specific characteristics (Sabarwal and Terrell 2008; Amin 2010). Of course, as Minniti and Nardone (2007) point out, gender-specific indicators may actually be capturing aspects of the institutional environment, such as barriers to formal registration and access to credit for women, rather than individual characteristic such as attitudes towards risk.

The impact of *education* on selection into entrepreneurship and subsequent entrepreneurial success has also been the subject of much research. In theory, more highly educated people possess greater managerial ability, which increases their likelihood of becoming productive entrepreneurs. On the other hand, more educated people may have better opportunities to pursue high-paid wage labor, which would decrease their likelihood of becoming

entrepreneurs. The relationship between entry, performance, and education is ultimately ambiguous. Using the GEM data, Acs et al. (2004) find that entrepreneurs with higher levels of education tend to pursue opportunity-based ventures while those with lower levels of education become entrepreneurs out of necessity. Among developing countries, Van der Sluis et al (2005) find that an additional year of education increases the returns to entrepreneurial activity by 5.5% on average. The education effect tends to be stronger for women than for men. While total years of education are positively correlated with entrepreneurial income, they find no significant relationship between levels of education and the decision to become an entrepreneur. In a study of manufacturing enterprises in 11 sub-Saharan African countries, Goedhuys and Sleuwaegen (2010) find that entrepreneurs with a graduate or post-graduate degree increase employment levels by 2 percentage points more than those with less education. Ultimately, education does seem to matter, though future research will need to be more precise about what types of education (primary, secondary, tertiary, business-related) matter for what kinds of entrepreneurship (necessity vs. opportunity) in which sectors (agriculture, manufacturing, services) (Dickson et al. 2008).

One area of new research on education and entrepreneurship assesses how leadership and management training and consulting services can encourage more people to become productive entrepreneurs and teach existing entrepreneurs how to operate their businesses better. The empirical research that is already underway uses experimental data collected in randomized control trials rather than the existing datasets described above. Notable amongst these are Fairlie, Karlan, and Zinman (2012) who find that entrepreneurship training does not have strong long-run effects on performance for those who face other constraints such as restricted access to credit or labor market discrimination (e.g. women). They do find positive short-run effects in the form of greater business ownership and employment. These types of

analyses are crucial for understanding the importance of individual characteristics relative to the business environment.

Family attributes and the size of one's *social network* also affect entrepreneurial choice and performance. Having a large and diverse social network can provide an individual with the (financial) resources and information to become a successful entrepreneur. As such, the GEM database provides an indicator, 'Know Startup Entrepreneur Rate', which measures the percentage of people aged 18-64 who personally know someone who has started a business in the last two years. Djankov et al (2005, 2006, 2007) have collected separate survey data from entrepreneurs and non-entrepreneurs in five developing and transition countries—Russia, Brazil, China, India, Nigeria—to measure the effect of individual characteristics on the scope for entrepreneurship. Data collected from Russia, China, and Brazil thus far shows that after controlling for age, gender, and education, individuals who have more entrepreneurs in the family and among childhood friends are more likely to become entrepreneurs themselves. They find that both individual characteristics (nature) and the social environment (nurture) are important in the decision to become an entrepreneur, while individual characteristics are more important in subsequent business success. These individual characteristics include attitudes towards risk and confidence in one's abilities. The GEM database captures indicators for 'entrepreneurial intention', 'fear of failure rate', and 'perceived capabilities.' It is expected that individuals who are less risk-averse (have a lower fear of failure) and who believe they possess the requisite skill set are more likely to become entrepreneurs, though there is very little research that uses these particular indicators to measure entrepreneurship trends in the developing world. Understanding which individual characteristics matter for successful, productive entrepreneurship is essential for designing public policy.

2.2.3 *The Impact of the Institutional Environment*

For the individuals who already possess favorable characteristics and business know-how, what role does the regulatory environment play in enabling or restricting their entrepreneurial activity? A third major strand of recent empirical research seeks to answer this question using cross section time-series data on the quality of the business environment.

Literature on improving the regulatory environment for business has proliferated since the publication of Hernando De Soto's seminal study of informal markets in Peru. In *The Other Path* (1989), De Soto outlines the costs entrepreneurs face in accessing and remaining in formal markets as a result of inefficient legal restrictions, arguing that people make a rational choice to operate in the informal sector when the costs of formality are too high. Informality, too, has its costs however. Informal businesses are less productive because they lack the benefits of formal legal protection, which includes recognition of property rights, enforcement of contracts, and access to an extra-contractual legal system. Moreover, they must devote resources to avoiding detection by the authorities rather than towards optimal levels of productive investment. As such, De Soto claims "there can be no doubt that a relatively innovative business will be larger than informality will permit" (176). He advocates for reforming legal institutions as the key mechanism for lowering barriers to entry into the formal economy.

Following De Soto's work, Djankov et al (2002) sought to better understand why some countries regulate their business environments so heavily. Their study represents the first attempt to rank countries according to how heavily they regulate entry into legal/formal markets. Their analysis supports the 'public choice' theory of regulation, which sees entry regulation as socially inefficient as it benefits incumbent firms and politicians rather than

consumers and creates opportunities for corruption.⁹ In short, regulation benefits the regulators. Djankov et al find that countries with more representative and free political systems have less burdensome regulations, even after controlling for per capita income. Much like De Soto, they argue that reforming legal and political institutions is the key to improving opportunities for entrepreneurs.

The availability of nearly ten years of data on regulatory environments from the Doing Business Indicators and Enterprise Surveys has enabled researchers to more precisely measure the effects of business regulations on a variety of macroeconomic and private sector outcomes in developing countries. Recent empirical literature includes both broad, cross-country analyses (Djankov, McLiesh, and Ramalho 2006) as well as more detailed case studies of specific policy changes undertaken in developing countries (De Mel, McKenzie, and Woodruff 2012; Chari 2011; Mullainathan and Schnabl 2010).

Some key findings of this literature are that high start-up and entry costs are associated with lower rates of entrepreneurship and job creation (Klapper, Lewin, and Delgado 2009), a decrease in total factor productivity and output per worker (Barseghyan 2008), and slower growth among incumbent firms (Klapper, Laeven, and Rajan 2006). Lowering registration costs and streamlining the registration process leads to greater formal sector employment opportunities, an increase in formal registration, growth in the SME sector, lower prices due to higher competition, and higher real output (Ayyagari, Beck, and Demirguc-Kunt 2007; Ciccone and Papaioannou 2007). More specifically, some scholars have identified differential effects of regulation on opportunity-driven entrepreneurs versus necessity-driven entrepreneurs (Ardagna and Lusardi 2008; Yuen-Ping Ho and Poh-Kam Wong 2007) as well

⁹ This is in contrast to the public interest theory, which sees regulation as socially efficient and necessary for correcting market failures, setting minimum quality standards, and protecting the public.

as on young firms without established reputations versus older firms that can more easily access financing and circumvent legal restrictions (Chavis, Klapper, and Love 2010).

Based on this literature, it is clear that institutional quality, particularly the regulatory environment, significantly influences patterns of entrepreneurship in developing countries. As with individual characteristics, the institutional environment appears to have a similar effect on entrepreneurship in developed countries as it does in developing countries.¹⁰ For instance, high start-up costs discourage entrepreneurship and produce lower rates of job creation in OECD countries (Fonseca, Lopez-Garcia, and Pissarides 2001). Correspondingly, Gohmann (2012) finds that the institutional environment in the EU and US is a significant determinant of the choice to become self-employed because it can raise or lower the costs of switching from wage employment to self-employment.

2.3 Conclusions and Caveats

The proliferation of new, publically available data has made possible numerous analyses of entrepreneurship in developing countries, or at the very least has led to the inclusion of more of developing countries in cross-country studies. In particular, new research has shown that the structure of entrepreneurship and its impact on economic performance differs significantly depending on a country's income. Consequently, high rates of entrepreneurship in developing countries are not necessarily associated with private sector growth and development because a larger proportion of this activity is necessity-driven rather than opportunity-driven. While on a macro level the relationship between entrepreneurship and economic growth may depend on a country's stage of development, insights from the literature on individual characteristics and the business environment do not appear to be

¹⁰ The cross-country analyses mentioned utilize data from a variety of income groups. It is possible that new trends may become apparent when high and upper-middle income countries are excluded from the sample.

income-specific. Therefore, while broad macroeconomic policies towards entrepreneurship may not be as transferable between developed and developing countries, public policies geared towards enhancing individual capabilities and improving the institutional environments in which they work may be more applicable.

There are, however, some important caveats to keep in mind when choosing which datasets and outcome variables to use. For instance, most indicators of new firm registration or start-up activity will tend to under-estimate entrepreneurship because they are limited to the formal sector. Within the formal sector, databases like Doing Business and WBGES collect data only on limited liability corporations (LLCs), ignoring other relevant forms of business organization. The GEM dataset, on the other hand, may over-estimate entrepreneurship rates because it includes both newly registered firms as well as nascent start-ups that have yet to formally register and may never actually register (Desai 2009, 5). It is likely that the true level of entrepreneurship in an economy lies in between these two estimates.

The choice of entrepreneurship variable is also likely to affect the results. Total early-stage entrepreneurial activity (TEA) and Entry Density are two of the most commonly used measurements of entrepreneurship in the literature discussed above. While TEA measures the proportion of working age people engaged in start-ups and entry density measures the number of newly registered limited liability firms, it reasonable to expect that the two should be fairly interchangeable or at least positively correlated. However, they are actually significantly negatively correlated (see Table 3).¹¹ One explanation could be that entrepreneurs choose not to formally register new businesses until a few years after they are established, so there is likely to be a lag between an increase in TEA and a corresponding

¹¹ See Appendix A for complete correlation matrix.

increase in entry density in a given country. Therefore, we can expect entry density in a given year to be positively correlated with TEA from a few years earlier. Even after taking the possibility of a lag in registration rates into consideration, there continues to be a negative—at best flat—relationship between entry density and TEA. Another possible explanation is that entry density is calculated using data from official registries, but TEA is constructed using individual survey data, which may be less consistent because they rely on individuals to self-report their type of entrepreneurship.¹²

While Entry Density is negatively correlated with TEA, it is positively and generally significantly correlated with TEA OPP, the proportion of opportunity-driven entrepreneurs.¹³ This suggests that opportunity entrepreneurs are more likely to register their new firms and entry density is a good proxy for this type of productive entrepreneurship. Researchers should be aware that their choice of entrepreneurship variable may influence the direction of their results, and, to maintain consistency, those using the GEM database may adopt TEA OPP as a primary measure of entrepreneurship.¹⁴

¹² It is possible that some necessity-driven entrepreneurs may believe they are pursuing a business opportunity and count themselves as opportunity-entrepreneurs.

¹³ TEA and TEA OPP are negatively correlated, which is counterintuitive given that TEA OPP is actually a component of TEA. If anything, there should be no strong relationship between TEA and its components, particularly if the components are moving in opposite directions. This issue remains unresolved.

¹⁴ Acs (2006) argues that the ratio of opportunity to necessity entrepreneurship should be the primary outcome of interest in studies of entrepreneurship

Table 3. Correlations between Entrepreneurship Outcome Variables

	Entry Density07	Entry Density08	Entry Density09	TEA06	TEA07	TEA08	TEA09
Entry Density07	1.0000						
Entry Density08	0.9829***	1.0000					
Entry Density09	0.9360***	0.9699***	1.000				
TEA06	-0.2242	-0.2795*	-0.2622	1.0000			
TEA07	-0.1324	-0.1559	-0.1134	0.8498***	1.0000		
TEA08	-0.2953*	-0.3405*	-0.3051*	0.8813***	0.9647***	1.0000	
TEA09	-0.3315**	-0.3449**	-0.3001*	0.7842***	0.9036***	0.9061***	1.0000
TEAOPP06	0.4822***	0.4865***	0.4814***	-0.2982	-0.1687	-0.1553	-0.2648
TEAOPP07	0.3516**	0.3445**	0.3846**	-0.2771	-0.2152	-0.1706	-0.2359
TEAOPP08	0.1827	0.1408	0.2297	-0.3372*	-0.2577	-0.3451**	-0.3788**
TEAOPP09	0.2036	0.1814	0.2007	-0.3413*	-0.3981**	-0.2838*	-0.2733**
TEAOPP10	0.2692*	0.2361	0.3606**	-0.1441	-0.1979	-0.1639	-0.3180**
TEAOPP11	0.1728	0.1687	0.2607*	-0.2309	-0.1947	-0.2409	-0.3280**

* Significant at 0.10 level

** Significant at 0.05 level

*** Significant at 0.01 level

SECTION III: INVESTIGATING POLICY DESIGN

In recent years, the increasing availability of data on entrepreneurship has allowed researchers to establish clearer empirical connections between macroeconomic conditions, individual characteristics, the regulatory environment, and patterns of entrepreneurial activity. What has been less well studied is the matter of policy design. This section discusses factors that may be critical for the *design* of policies to improve opportunities for entrepreneurs.

Policy design is about creating the right incentive structure to encourage productive economic activity. It has been relatively neglected in studies of entrepreneurship and private sector development, both in developed and developing countries. There are several types of entrepreneurship policies a government may adopt based on the activities they wish to encourage. For instance, some policies might encourage new firm creation and high-growth entrepreneurship through targeted grants and seed funding. Others may aim to boost participation of certain demographics in entrepreneurial activity through management education programs or promote the formalization of existing firms by improving the formal sector business environment. Recognizing that policy design covers a broad range of areas, this section will focus specifically on the importance of policy design in relation to business environment reforms.

While it is useful for a policymaker to know that business environment reforms matter for economic prosperity, it is even more helpful to have answers to the following questions:

How should a set of good policies be implemented? *Which* reforms matter more than others?

How many reforms are necessary to have an impact? In what *sequence* should the reforms be

undertaken? And at what *speed* should the reforms be undertaken? These questions remain unresolved in the current literature.

The available data cover a wide range of factors affecting the business environment including the relative ease of starting businesses, dealing with construction permits, getting electricity, registering property, obtaining credit, protecting investors, paying taxes, hiring and firing workers, importing and exporting goods, enforcing contracts, and closing down businesses. From a conceptual perspective, all of these factors could be equally important. But in practice some may be more important than others. While many different studies have looked at the importance of one or the other of these factors in improving private sector development or macroeconomic outcomes (see section 2.2.3), the present analysis tries to determine if the way in which reform policies are implemented has a significant effect on the outcome. It provides a broad framework for understanding the impact of policy design in private sector reform, with particular attention to issues of magnitude, sequence, and speed. It then sets up a preliminary empirical investigation of the impact of speed of reform on entrepreneurship.

3.1 Magnitude

How much reform is necessary? The magnitude of reforms is an important aspect of policy design because it determines the effectiveness of a given reform. Without a better understanding of magnitude, a government may waste valuable political capital on enacting reforms that may not yield the desired results. For example, a reform may lower the cost of accessing credit, but unless it lowers this cost by enough to induce the growth of existing entrepreneurial activity or the entry of new firms, its effect will be negligible. In this respect, magnitude is also related to the credibility of the reform process as well as the complementary nature of the reforms. It is possible that the business community may not

respond to reforms if they feel that the government is not really committed to the process and is only making a token or temporary effort (perhaps to satisfy some international financing agency) that could easily be reversed. In such a case, commitment can be shown by the government's carrying out a minimum number of reforms.

To date, there have been very few studies that measure the impact of the magnitude of policy reform on entrepreneurial outcomes in developing countries. Klapper and Love (2010) is one notable exception. Using the Doing Business indicators, they measure the effect of the magnitude of reform on new firm registration in 92 countries. They find that small reforms do not have a significant impact on private sector development while larger reforms, for example those that reduce the time and cost of starting a business by 40% or more, are more likely to achieve higher rates of new firm registration. They also find evidence for complementarities in business environment reforms, arguing that 'in combination even smaller reforms produce a significant outcome' (14). Their paper marks the first attempt at quantifying the impact of policy design in private sector development across countries.

Two recent country case studies are also worth emphasizing for their exploration of issues related to the magnitude of reform policies. De Mel, McKenzie, and Woodruff (2012) build upon the conclusions reached by Klapper and Love. They measure the responsiveness of informal business owners in Sri Lanka to incentives to formalize. They find that distributing information about the benefits of formality and lowering the costs of registration to zero induce very few additional firms to register. However, providing cash benefits to informal firms induces more than half to formally register. While Klapper and Love identify a 40% reduction in costs as the minimum for encouraging new entrepreneurial activity, De Mel et al.

find that inducing the optimal level of formal entry requires financial incentives beyond a decrease in costs. Thus, a higher magnitude of reform is necessary.

On the other hand, Mullainathan and Schnabl's (2010) study on licencing reform in Peru suggests that a higher magnitude of reform is not necessarily needed and that organizational reform can be just as effective in encouraging the formal licensing of firms. Improvements in technical and administrative efficiency, such as streamlining bureaucratic procedures, publishing registration requirements, introducing risk-based classifications for businesses, and centralizing payment facilities led to a four-fold increase in newly licenced firms without having to change established laws. This conclusion is important because it demonstrates that improvements to the business environment need not require radical institutional change or politically costly legal reforms as De Soto and Djankov et al. recommend. In addition, their results suggest that successful licensing reform does not require actively lowering costs by a minimum threshold, eliminating them altogether, or rewarding people with cash, but that costs will automatically decrease and registration will significantly increase as a result of simple organizational restructuring. These findings are in line with new literature that measures the impact of 'one-stop-shops' and electronic registration systems (Klapper, Amit, and Guillen 2010).

Thus, the relationship between the magnitude of reform and its impact remains ambiguous. There is room for further research, both cross-country analysis and specialized case studies, to investigate how the magnitude of a reform or set of reforms affects entrepreneurship and private sector development in developing countries.

3.2 Sequence

In what sequence should reforms be undertaken? The theoretical basis for understanding this aspect of design comes from the literature on macroeconomic reform. The experience of Latin American countries with trade and financial sector reforms during the 1980s suggested that the sequence in which reforms were undertaken mattered for the outcomes. This literature came to the consensus that domestic product market reforms, such as price liberalization, should be undertaken before trade reforms and domestic financial reforms, such as interest rate liberalization, should be undertaken before opening a country's capital account and financial sector to international competition (Edwards 1990; Saleh et al. 2005). The intuition was that financial markets adjusted relatively quickly compared to other sectors. Thus, if various reforms were enacted simultaneously, the financial adjustments would happen faster, resulting in adverse economic consequences. For example, lifting capital controls too soon would result in capital flight if domestic financial markets remained tightly regulated. Similarly, liberalizing trade by lowering tariffs before enacting tax reforms would severely reduce government revenues assuming, as was the case in many countries in Latin America, that tariffs constituted a significant source of government revenue. Comparable arguments have been made regarding the sequencing of reforms within and across other sectors of the economy such as labour markets and the agricultural sector.

A similar literature has not yet developed with respect to business environment reforms. It is not known which of the various areas of reforms measured by Doing Business should be undertaken first and which later, or even whether the sequence of reform matters. While it is unlikely that sequencing in the private sector is as important as it was with macroeconomic structural adjustment, there still may be an optimal sequence in which business environment reforms can be enacted. One logical hypothesis is that reforms that lower barriers to entry,

such as the cost in time and money of registering a business, should be undertaken first in order to encourage new firms to enter the formal sector. If barriers to entry remain high and other relevant reforms are implemented, existing firms are likely to benefit while there may be no discernible effect on entrepreneurship variables that measure new entrepreneurial activity.

3.3 Speed

Finally, how fast should reforms be undertaken? The most recent Doing Business report asserts that ‘a faster pace of regulatory reform is good news for entrepreneurs in developing countries’ (2012, 1). This assertion has not been empirically tested, however, at least not in the context of private sector reform.

Speed of reform was a matter of great debate and discussion during the transition experience of the formerly communist countries of Eastern Europe in the 1990s. The rationale for considering speed in the design of macroeconomic reforms related in part to political economy factors and in part to the existence of complementarities. Proponents of ‘shock therapy’ believed that rapid, bundled reform was preferable to a gradual unfolding of reforms in order to prevent anti-reform forces from gathering strength and obstructing much needed policy change. Another rationale behind the emphasis on speed related to issues of credibility. In the context of the Eastern European transition, it was felt that rapid reforms would convince economic actors that the government was seriously committed to the reform process and they should act accordingly. Investors, businessmen, and other economic actors could be assured that the government would not backslide on its decision if reforms were undertaken all at once.

In general, ‘shock therapists’ argue that a rapid transition to market institutions is the best way for a country to take advantage of growth opportunities. As Jeffrey Sachs—chief architect of the strategy—envisioned it, a rapid ‘change of economic system would make possible a gradual recovery of growth and a gradual convergence of living standards over the following decades’ (1994, 271).

‘Gradualists’ on the other hand assert the primacy of institutions and argue that macroeconomic reforms should proceed slowly to allow institutions to adapt, to enable the formation of a political support base, and to ensure that the reforms have the desired effects in practice as they do in theory. In practice, a gradual approach might begin with localized experiments to identify successful policies for scale-up, much like the process of China’s economic reform from 1979 onwards. Douglass North, a key advocate for gradual institutional change, explains that ‘altering the performance of an economy for the better takes time—a lot longer than the time horizon of the politician who must approve such changes’ (2005, 157). Gradualists argue that rapid adjustments are costly and risky, particularly if the requisite institutional capacity does not exist. Thus, the scope of economic reform should be limited to existing institutional capacity. They fear that rapid reform is bound to be implemented poorly in developing and transition economies and will inevitably undermine domestic support for continued reform.

The presence of complementarities is another major argument in support of implementing rapid, bundled reforms. Complementarity is simply the idea that outcomes (growth, productivity, output, etc.) depend on high or consistent performance across multiple, distinct dimensions. In other words, the benefit of a single reform is amplified as more and more reforms are implemented simultaneously, so long as reform in one dimension does not

preclude or substitute for reform in another (Friedman and Johnson, 1996). For example, the success of a garment manufacturing plant depends on the availability of inputs (thread, machinery), intermediate goods such as electricity and infrastructure, a skilled and healthy work force, secure property rights to enable investment, and access to markets to sell the final product (Jones, 2008). Disruptions or restrictions in any single dimension of the production process will result in lower productivity and revenue. Similarly, Chang, Kaltani, and Loayza (2009) find that trade openness is associated with economic growth only when complementary reforms in the domestic economy enable a country to take advantage of international competition.

The same intuition is relevant for analysing business environments and private sector reform, where high barriers to entry and cumbersome regulations can stifle the development of a robust private sector. The World Bank's Doing Business Indicators highlight a number of aspects of the business environment which function as a set of complementary inputs for private sector development. Based on this framework, it is predicted that the faster all elements of an enabling business environment are in place the higher the likelihood of private sector growth and development.¹⁵ For example, even if barriers to entry are lowered, entrepreneurs may choose not to start new businesses if the cost (in time and money) of operating and growing that business in the formal sector remains high. If two countries enact the same number of total reforms, the country that enacts them faster should have higher observed private sector growth because the incentives to encourage entrepreneurship are in place for longer. This should be particularly true in developing economies because they are more likely than developed countries to need reforms across multiple dimensions.

¹⁵ NB: an enabling business environment does not necessarily mean fewer regulations, but better regulations.

In light of these theoretical arguments, it is hypothesized that that a faster pace of business environment reform should correspond to higher levels of opportunity-driven entrepreneurship and new firm entry.

3.3.1 Measuring Speed

Empirical attempts to measure the speed of reform are available from the experience of Eastern European transition economies during the 1990s. The relevant empirical studies¹⁶ have used liberalization indices, most commonly the De Melo, Denizer, and Gelb (1996) Cumulative Index of Liberalization (CLI), to identify the speed of policy reform based on changes in a country's overall liberalization score. These scores were updated annually to reflect the extent to which a country had liberalized its internal markets, external markets, and private sector entry. Heybey and Murrell measure speed as 'one-fourth of the difference between the value of the liberalization index in the fourth year of post-communist reform and the value of the liberalization index in the last year of the old regime, capturing the extent of policy change' (130). Similarly, using liberalization data from the European Bank for Reconstruction and Development (EBRD) rather than CLI, Stiglitz and Godoy (2006) define their variable for speed as 'one tenth the difference between the 2000 average of the indexes of small-scale and large-scale privatization and the 1991 average of the same indexes' (13).

These studies highlight and attempt to mitigate a series of methodological concerns common to empirical analyses of policy reform. These include the potential for reverse causality in the likely event that private sector development drives faster policy reform and the potential for bias due to the omission of initial conditions as a control variable. However, these studies come to different conclusions regarding the importance of speed in policy reform. Berg et al.

¹⁶ See Heybey and Murrell (1999); Berg, Borenzstein, Sahay, and Zettelmeyer (1999); Stiglitz and Godoy (2006).

(1999) find that the speed of reform matters for economic growth while Heybey and Murrell (1999) find that speed does not matter and, in fact, is influenced by growth. After including controls for growth, legal origins, and initial conditions, Stiglitz and Godoy (2006) find that the speed of privatization is actually negatively associated with growth.

This current analysis will use a similar measure of speed as the ones outlined above, obtaining from the Doing Business database an equivalent 'liberalization index.' As such, this paper estimates 'speed of reform' as one-*n*th of the total number of Doing Business reforms undertaken where 'n' is the number of years from 2005 to the one year before the most recent data are available. For example, the most recent entry density data is available for 2009, so the speed of reform will be measured as the average number of reforms undertaken in an economy between 2005 and 2008. This reduces the potential for reverse causality to bias the results by measuring the relationship between speed of reform and entrepreneurial activity in the following year. There is no reason to believe that entry density in 2009 should affect the speed of reform between 2005 and 2008.

Since this analysis is concerned with the determinants of productive entrepreneurship in developing countries, it will use Entry Density as its primary dependent variable, which also serves as a good proxy for TEA OPP, as demonstrated in Table 3. There are also 85% more observations for Entry Density (N=96) than TEA OPP (N=52), which increases the accuracy of the regression analysis.

Equation (1) estimates the hypotheses that a faster pace of business environment reform is associated with higher levels of productive entrepreneurship as captured by entry density. It controls for initial conditions using the level of GDP per capita in 2005 at purchasing power

parity, which mitigates at least one source of omitted variable bias. The interaction term accounts for the possibility of a non-linear relationship between speed of reform and income, as was done in van Stel et al (2005). Finally, there is a control for GDP growth in 2009 to account for any changes in entrepreneurial activity attributable to the sharp global economic recession during 2009. Table 4 reports summary statistics for all variables used in the regression.

$$(1) \text{Entry Density}_{2009} = \alpha + \beta_1(\text{Speed}_{05-08}) + \beta_2(\text{PCY}_{2005}) + \beta_3(\text{Speed}_{05-08} * \text{PCY}_{2005}) + \beta_4(\Delta\text{GDP}_{2009}) + \varepsilon$$

Table 4. Summary Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max	Source
Entry Density 2009	97	2.798	3.724	0	20.3	WBGES
Speed (05-08)	182	1.043	0.989	0	4.5	Constructed from DB Indicators
PCY 2005	178	11,710.15	13,964.38	276.99	69,512.33	WDI
PCY*Speed	178	12359.24	18399.82	0	89024.14	Constructed
GDP Growth (%) 2009	181	0.120	5.527	-17.955	20.4	WDI

3.3.2 Preliminary Results and Discussion

Table 5 reports some preliminary results from multivariate OLS regressions using robust standard errors. These results suggest that reform speed has a different effect on entrepreneurship depending on per capita income. The sign on the coefficient for speed is positive and significant at the 5% level when the interaction term is included, which suggests that there is a non-linear relationship between the speed of reform and initial conditions, proxied by per capita income. This means that the impact of speed of reform on entry density is different at different levels of income. The value of the coefficient on speed is given by

$\beta_1 + (\beta_3 * PCY_{2005})$. The negative sign on the interaction term suggests that the effect of speed is greater at lower levels of income. At the sample mean per capita income, \$1,711.15, the coefficient on speed is negative. However, the coefficient becomes positive as per capita income falls below about \$7,300. In this sample, 42 out of 96 countries have per capita incomes below that threshold.¹⁷ The coefficient on speed remains positive after controlling for macroeconomic conditions in 2009.

The main implication of these results is that policy design matters more for countries that are relatively poorer. A faster pace of reform is likely to increase entrepreneurial activity in developing countries. This makes sense given the theoretical arguments about political economy and complementarity. Poorer countries are generally more likely to have weaker political systems with higher levels of rent-seeking and corruption. In this context, a faster pace of reform can prevent the consolidation of organized opposition from incumbent businesses or corrupt bureaucrats, who may lose their competitive edge or access to rents from the proposed regulatory reform. Poorer countries also tend to have more restrictive business environments¹⁸ in need of reform across multiple areas. Thus, a series of quick reforms across a broad range of regulations may be more effective than in richer countries where the scope for reforms is likely to be more limited.

These results do not discount the importance of institutions, but show that the role of policy design is influenced by institutional quality. They are also consistent with Klapper and Love (2010), who find that countries with relatively weaker business environments require relatively larger reforms.

¹⁷ See Appendix A for list of countries.

¹⁸ GDP per capita is significantly negatively correlated (-0.686***) with Doing Business rank, where a lower rank corresponds to a better business environment. Poorer countries tend to have higher ranks and worse business environments.

Table 5. Entry Density (2009)

	(1)	(2)	(3)	(4)
Speed	-0.375 (1.02)	-0.342 (1.05)	0.631** (2.23)	0.593** (2.05)
PCY	-	0.0002*** (4.97)	0.0003*** (3.93)	0.0002*** (3.71)
PCY*Speed	-	-	-0.0000868** (2.43)	-0.000087** (2.43)
ΔGDP 2009	-	-	-	-0.037 (0.80)
Constant	3.336*** (4.04)	1.101** (2.21)	-0.081 (0.17)	-0.024 (0.05)
Observations	97	96	96	96
R-Squared	0.0102	0.3183	0.3662	0.3679

Absolute value of t-statistics in parentheses

* Significant at 0.10 level

** Significant at 0.05 level

*** Significant at 0.01 level

Of course, these are initial results and must be subjected to robustness tests before more definitive conclusions can be drawn about the relationship between speed of reform and entrepreneurship. Using entry density in 2008 as the dependent variable yields very similar results. The coefficient on speed is positive when the interaction term is included, but it is not significant.

Another possible robustness test is to use TEAOPP to see if the coefficient on speed remains positive and significant. When the above regression is repeated using TEAOPP in 2010 as the dependent variable, the impact of speed of reform on entrepreneurship becomes negative while the coefficient on the interaction term becomes positive.¹⁹ Both are insignificant,

¹⁹ See Table 6 in Appendix B for regression results.

though. This result is counterintuitive given that entry density and TEAOPP are positively correlated and both are good indicators of opportunity-driven entrepreneurship in the formal sector. One possible explanation for the lack of robustness across changes in the choice of dependent variable is that the sample size for TEAOPP is much smaller and includes a much smaller proportion of low income and lower-middle income countries. One third of the countries sampled in the entry density regression are classified as low or lower-middle income. Conversely, only about 16% of the countries sampled in the TEAOPP regression are classified as low or lower-middle income. Another option is to run the regression using TEAOPP06, as it is a more precise proxy for Entry Density in 2009 given the lag between starting a new business and registering it. However, this would reduce the sample size even further, making the results much less reliable.

The qualitative and quantitative analysis provided above represents a preliminary investigation into the role of policy design—magnitude, sequence, and speed—for entrepreneurship in developing countries. It is clear that policy design matters and that its specific effects are determined by a country's initial conditions. Further research will be necessary to uphold these findings and to delve deeper into the interactions between public policies towards entrepreneurship and the varied institutional contexts of developing countries. The World Bank and GEM datasets have enabled researchers to better understand the dynamics of entrepreneurship in developing countries. This field of study and particularly the role of policy design will become clearer as more data covering more countries over a longer period of time become available. Additional case studies should also generate useful insights, particularly for regional and within-country factors that cannot be captured in a cross-country analysis.

SECTION IV: REVIEW AND CONCLUSIONS

This paper offers a review of recent literature on entrepreneurship in the developing world, with a focus on empirical analyses that make use of new data sources from the World Bank and the Global Entrepreneurship Monitor. It identifies and analyzes three strains of literature that have emerged in recent years. The first explores the relationship between entrepreneurship and economic growth in developing countries. A key finding is that the relationship is nonlinear with respect to income for reasons that may be linked to the fact that a large fraction of entrepreneurs in developing countries are driven to self-employment by the lash of necessity rather than the spur of opportunity

The second strain explores the importance of individual and social characteristics in entrepreneurial choice and performance. Gender, education, social networks, and individual attitudes have all been found to have important effects on a person's choice to become an entrepreneur as well as on his or her chances of success. These characteristics often differ significantly between opportunity and necessity entrepreneurs, so it is crucial to understand which are associated with productive entrepreneurship and which with remedial in order to design effective public policies.

The third line of inquiry explores the impact of institutions, particularly the business environment, on opportunities for entrepreneurs to enter the formal market. Using the Doing Business indicators, this literature overwhelmingly finds that the regulatory environment has a significant impact on levels of entrepreneurship and, consequently, on job creation, innovation, and private sector development.

One of the main contributions of this paper is to identify policy design as an important, though relatively neglected area of research in entrepreneurship and development studies. In particular, it highlights the importance of magnitude, sequence, and speed. This analysis applies an existing body of theoretical literature on policy design, drawn from the macroeconomic adjustment experiences in Latin America and Eastern Europe, to the study of private sector reform and its impact on opportunity-driven entrepreneurship. While there is some empirical literature that discusses whether the magnitude of doing business reforms has an effect on entrepreneurial outcomes, there is no literature that examines the impact of speed or sequence.

This paper makes a first attempt at quantifying the effect of speed of reform on entrepreneurship. It hypothesizes that a faster pace of reform is associated with higher rates of opportunity-driven entrepreneurship measured by an indicator of Entry Density. Preliminary results from a multivariate OLS regression show that the speed of reform has a positive and significant effect on entry density in relatively poorer countries. This suggests that developing countries that wish to encourage productive, formal sector entrepreneurship should consider passing rapid, bundled business environment reforms rather than pursue a gradual or piecemeal reform agenda. However, these are preliminary results and need to be verified through further robustness checks with different sample ranges and variables. The broader empirical literature on policy design is very sparse and further research will be needed to enhance our current understanding of the topic.

Section V. Appendices

APPENDIX A. COUNTRIES INCLUDED IN REGRESSION ANALYSIS USING ENTRY DENSITY

Country	Income Level
Albania*	Lower middle income
Algeria*	Upper middle income
Argentina	Upper middle income
Armenia*	Lower middle income
Austria	High income: OECD
Azerbaijan*	Upper middle income
Belarus	Upper middle income
Belgium	High income: OECD
Belize*	Lower middle income
Bhutan*	Lower middle income
Bolivia*	Lower middle income
Bosnia and Herzegovina*	Upper middle income
Brazil	Upper middle income
Bulgaria	Upper middle income
Burkina Faso*	Low income
Cambodia*	Low income
Canada	High income: OECD
Chile	Upper middle income
Colombia	Upper middle income
Costa Rica	Upper middle income
Croatia	High income: non OECD
Cyprus	High income: non OECD
Czech Republic	High income: OECD
Denmark	High income: OECD
Dominica	Upper middle income
Dominican Republic*	Upper middle income
Egypt, Arab Rep.*	Lower middle income
El Salvador*	Lower middle income
Ethiopia*	Low income
Finland	High income: OECD
France	High income: OECD
Gabon	Upper middle income
Georgia*	Lower middle income
Guatemala*	Lower middle income
Hong Kong SAR, China	High income: non OECD
Hungary	High income: OECD
Iceland	High income: OECD

India*	Lower middle income
Indonesia*	Lower middle income
Ireland	High income: OECD
Israel	High income: OECD
Italy	High income: OECD
Jamaica*	Upper middle income
Japan	High income: OECD
Jordan*	Upper middle income
Kazakhstan	Upper middle income
Kyrgyz Republic*	Low income
Latvia	Upper middle income
Lithuania	Upper middle income
Macedonia, FYR	Upper middle income
Madagascar*	Low income
Malawi*	Low income
Malaysia	Upper middle income
Maldives*	Upper middle income
Mauritius	Upper middle income
Mexico	Upper middle income
Moldova*	Lower middle income
Montenegro	Upper middle income
Morocco*	Lower middle income
Netherlands	High income: OECD
New Zealand	High income: OECD
Niger*	Low income
Nigeria*	Lower middle income
Norway	High income: OECD
Oman	High income: non OECD
Pakistan*	Lower middle income
Panama	Upper middle income
Peru*	Upper middle income
Philippines*	Lower middle income
Poland	High income: OECD
Portugal	High income: OECD
Romania	Upper middle income
Russian Federation	Upper middle income
Rwanda*	Low income
Senegal*	Lower middle income
Serbia	Upper middle income
Singapore	High income: non OECD
Slovak Republic	High income: OECD
Slovenia	High income: OECD
South Africa	Upper middle income
Spain	High income: OECD
Sri Lanka*	Lower middle income
Suriname*	Upper middle income

Sweden	High income: OECD
Switzerland	High income: OECD
Tajikistan*	Low income
Thailand*	Upper middle income
Tunisia*	Upper middle income
Turkey	Upper middle income
Uganda*	Low income
Ukraine*	Lower middle income
United Kingdom	High income: OECD
Uruguay	Upper middle income
Uzbekistan*	Lower middle income
Vanuatu*	Lower middle income
Zambia*	Lower middle income

* Denotes per capita income in 2005 < \$7,300

APPENDIX B. ROBUSTNESS CHECK

Table 6. Total Early Stage Entrepreneurial Activity- Opportunity (2010)

	(1)	(2)	(3)	(4)
Speed	-1.461 (0.76)	-0.517 (0.34)	-2.646 (1.12)	-2.755 (1.13)
PCY	-	0.00062*** (5.65)	0.00044* (0.81)	0.00044* (1.84)
PCY*Speed	-	-	0.00015 (2.31)	0.00016 (1.04)
GDP 2009 Dummy	-	-	-	0.120 (0.39)
Constant	47.84*** (14.26)	35.90*** (12.41)	38.56*** (9.39)	38.77*** (9.07)
Observations	58	58	58	57
R-Squared	0.0117	0.4178	0.4322	0.4255

Absolute value of t-statistics in parentheses

* Significant at 0.10 level

** Significant at 0.05 level

*** Significant at 0.01 level

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Doing Business: <http://www.doingbusiness.org/data>

Global Entrepreneurship Monitor: <http://www.gemconsortium.org/Data>

MSME-CI:

http://www1.ifc.org/wps/wcm/connect/Industry_EXT_Content/IFC_External_Corporate_Site/Industries/Financial+Markets/msme+finance/sme+banking/msme-countryindicators

World Bank Group Entrepreneurial Snapshots:

<http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTPROGRAMS/EXTFINRES/0,,contentMDK:21454009~pagePK:64168182~piPK:64168060~theSitePK:478060,00.html>