

Introduction

Over the last several years, increasing attention has been paid, in both the academic and policy community, to the importance of micro, small and medium enterprises (MSMEs). Arguments have been made for their relationship with growth, employment, innovation, competition, and poverty reduction, though strong evidence of causal relationships remains elusive. Indeed, Beck et al. failed to establish a causal link with long-run growth in their paper on the subject.¹ In an effort to expand the quality of available data, and hopefully encourage further investigation, the Small and Medium Enterprise Department of the International Finance Corporation is collecting and maintaining data on MSMEs from available secondary sources. (This dataset is a work in progress and complementary to previous data compilation efforts of Meghana Ayyagari, Thorsten Beck, and Asli Demircuc-Kunt: *Small and Medium Enterprises across the Globe*.) Our objective is to create a single dataset where all known information on MSME density (MSMEs per 1000 persons) and MSME employment (% of total) can be accessed.² With this note we are not attempting to concretely establish relationships between MSMEs and other economic variables, but to provoke thought and further research on the role of MSMEs in the economy. In the remainder of the note, we provide an introduction to this dataset, including caveats to its use, basic descriptive statistics by region and income group, and a brief analysis of three key relationships relevant to the study of MSMEs: informality, access to finance, and the business environment.

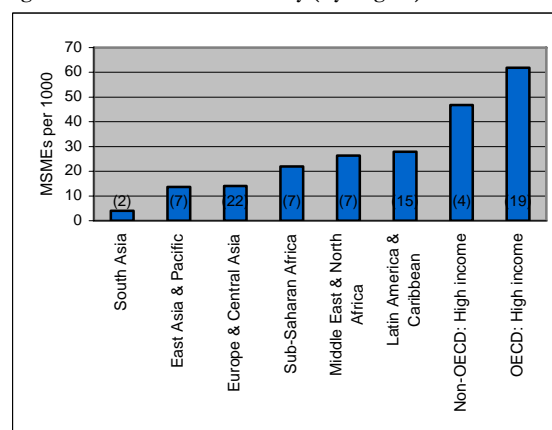
There are some important caveats to this data and analysis. First, the dataset is far from perfect, as definitions of MSMEs differ across economies. However, it is one of the most comprehensive sources of information currently available. Second, the Doing Business data used was from the 2006 report for all observations, so it does not match up with each observation's year of collection. Third, we recognize the correlations used do not demonstrate causality, and are subject to omitted variables bias; however, they help to emphasize the importance of continuing to understand the role of MSMEs in an economy. Fourth, as not all registered MSMEs are economically

active, we must cope with a systematic measurement error in the dataset. Low income countries tend to have the least accurate data on registration, especially on the number of exited firms. As a result, low income countries have more bloated registries (i.e. more registered but inactive firms), relative to higher income countries. Ironically, were we able to effectively correct for this error, it would strengthen relationships between MSME density and the three key areas that we present later in the discussion.³ Given these qualifications, we will now proceed to the description of the dataset.

Descriptive Statistics

Before delving into the relationships mentioned in the introduction, it is important to consider some basic descriptive statistics to give us a sense of the data. The entire dataset is made up of 103 countries; however, once we drop outliers and limit the maximum definition of MSMEs to no more than 250 employees, the count drops to 89.⁴ Also, we limit the country records to the most current year with data, after which the years range from 1994 to 2005; over 85 percent of these records are from 2000 forward. Now, we disaggregate MSME density by region and income to gain a greater appreciation of the variation within the dataset.

Figure 1: Median MSME Density (By Region)



Frequency in Parenthesis

³ Except for the relationship with Starting a Business, all other relationships hold even when controlling for GNI per capita. However, as the exact relationship between income and the measurement error is unknown, we can not correct this error.

⁴ Please note that 2 outliers, Czech Republic and Indonesia, were not included in the analysis as these were the only 2 economies with MSME density greater than 150. Economies dropped when limiting based on MSME definition are UAE, Belarus, Canada,

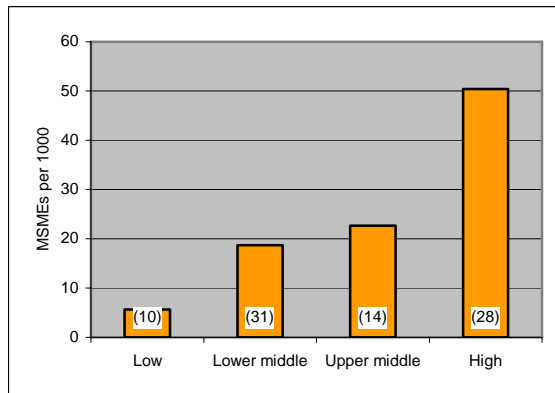
¹ Thorsten Beck, Asli Demircuc-Kunt and Ross Levine, "SMEs, Growth, and Poverty: Cross-Country Evidence," *Journal of Economic Growth*, 10 (2005): 202.

² The relationships discussed later also hold when looking at MSME density per working age population. Thus, we are not concerned by a bias for countries with a high dependency ratio.

It is clear from Figure 1 that there is considerable variation in the MSME density by region. The median ranges from approximately 4 in South Asia to 62 in the OECD. Even among those countries that are not high income, the range is notable (4 to 28). Thus, the relationship with income is not surprising.

Figure 2 demonstrates a clear correlation between MSME density and income level. From our regional groupings, it is clear that the OECD and non-OECD high income countries have a greater density of MSMEs than the other regions; however, when looking at this relationship by income group, it is even more evident. If we have reason to believe that the density of MSMEs either influences a country's economy, or can be used as an indicator of positive or negative changes to that economy, it is imperative that we seek to improve our understanding of its role. As such, we will now examine the three previously mentioned relationships.

Figure 2: Median MSME Density (By Income Group)



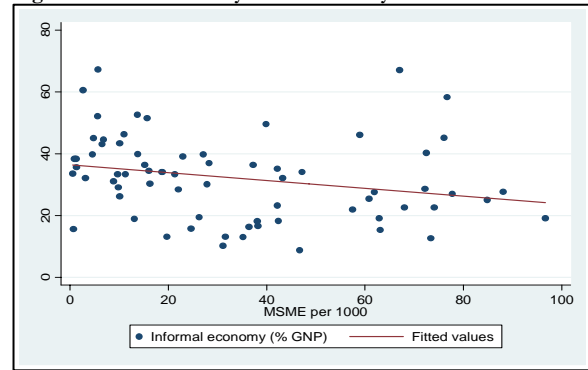
Three Key Relationships

Informality

The informal sector is generally characterized as micro-enterprises that are not registered with the government and do not pay taxes.⁵ Much attention is being paid to understand those factors that influence the degree of informality in a society. Some policymakers believe that reducing informality is important as doing so would expand the tax base, create a more inclusive regulatory environment, and allow for informal firms to enjoy the legal protections and other benefits of formal institutions. As informal firms are assumed to be unregistered, they should not be represented in our MSME density figures; therefore, as informality is reduced, one would expect MSME density to increase. Figure 3 shows that an inverse relationship exists,

hence supporting this hypothesis. If the barriers to formalization are high, such as low access to finance and a discouraging business environment, small informal firms will remain informal rather than join the formal economy. Let us now consider these barriers to formalization.

Figure 3: MSME Density and Informality

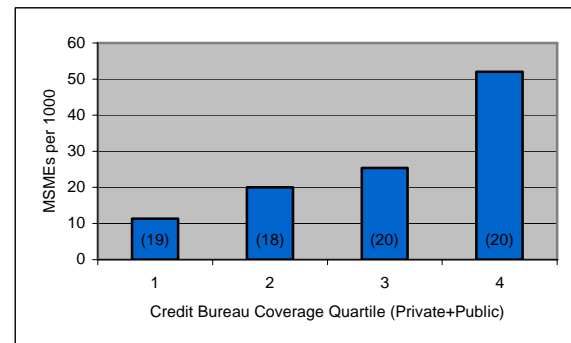


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Access to Finance

Access to Finance can act as a barrier to an informal firm formalizing, or a nascent entrepreneur starting a business anew. If an entrepreneur can not leverage credit for capital to start their business, or to pay creditors during the first year before a stable cash flow can be established, then a greater risk exists for early failure, or perhaps they will not be willing to start the business in the first place. When examining the relationship between MSME density and the Getting Credit indicators of the *Doing Business* report, we find a strong correlation with the coverage of credit bureaus—see Figure 4.

Figure 4: Median MSME Density and Credit Bureau Coverage



Frequency in Parenthesis

This relationship could demonstrate the importance of credit bureaus in analyzing credit risk for MSMEs. As many entrepreneurs considering opening a small business may not have much collateral, the role that a credit bureau can play in establishing their credit history and credit risk is invaluable for creditors in aiding to render a lending decision. As such, low credit bureau coverage could diminish the ability of

Chile, France, Indonesia, Japan, Kenya, New Zealand, Panama, Peru, the US, and Uzbekistan.

⁵ An entire literature exists around the problems of defining the informal sector. We do not attempt to address these issues here. We will simply use the indicator of informality reported in *Doing Business*, which comes from work by Friedrich Schneider.

entrepreneurs considering starting a new firm, or informal firms considering formalization, to access credit. Therefore, lower access would negatively impact density.

To provide a few examples, in Latin America, two lower middle income countries, El Salvador and Dominican Republic, are represented in the top quartile of credit bureau coverage and have two of the five highest MSME density levels in the region. Conversely, Denmark and Finland are two high income countries in the second and third quartile, respectively; both have MSME density levels below both income group and regional averages. Often, business environment and access to finance variables are correlated with income level; these examples demonstrate that this is not always the case.

Business Environment

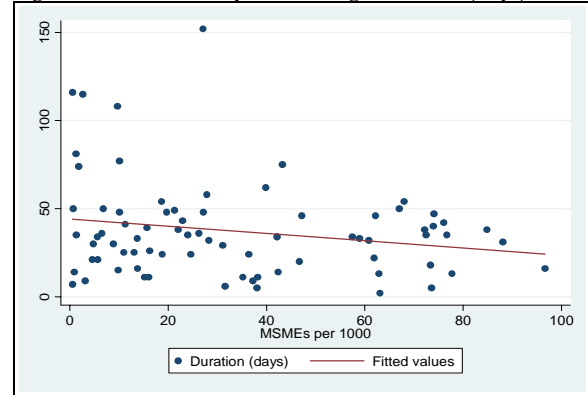
The final relationship that we will consider is with the business environment. As the business environment can be influential in determining whether informal firms formalize, as well as if potential entrepreneurs decide to pursue new ventures, we would expect relationships to exist between MSME density and business environment variables. To buttress this hypothesis, we correlate MSME density with the *Doing Business* rankings. This test of association shows a strong negative correlation (i.e. MSME density tends to be higher for economies with better rankings); however, the importance of individual sub-indices varies. To further explore this association, we have selected three areas where the correlations are manifest.

Starting a Business

Both the number of procedures to start a business and the total number of days have a negative and significant relationship with MSME density. One should not be surprised that the red tape associated with starting a business would have a strong relationship with MSME density, as the process to start a business is the very first hurdle that new entrepreneurs face. As MSMEs by definition have less staff over which to spread the burden of such processes, the impact on MSMEs of this red tape is greater. Thus, the lower density of MSMEs reflected in Figure 5 as the number of days required to start a business increases could be a reflection of the influence of this greater burden.

When examining specific countries in Africa, Ghana has the second longest time to start a business in Sub-Saharan Africa (within our sample) and the lowest MSME density in the region. Malawi and Tanzania tie for the shortest time to start a business in the region and have the greatest MSME densities in the region, even greater than the average for high income countries.

Figure 5: MSME Density and Starting a Business (Days)

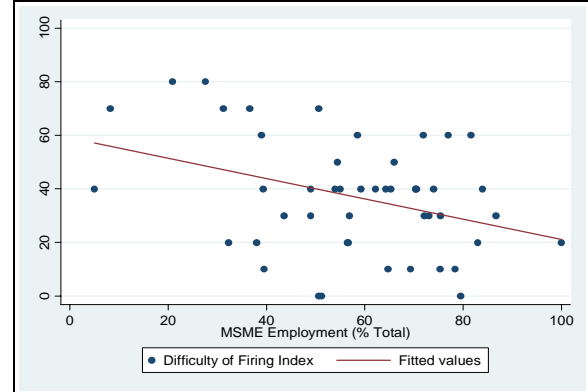


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Hiring and Firing

Many MSMEs struggle with developing a steady flow of business, especially within their first year. As such, constraints to hiring and firing employees can limit entrepreneurs' abilities to adjust to their workflow. Without the ability to easily fire employees, entrepreneurs may opt against expanding their labor force rapidly, even if market conditions generate a demand for more labor. These regulations are much more burdensome for the MSME sector, as they will not have the capital reserves to keep an employee on staff through a down-cycle. Our data appears to support this premise.

The Difficulty of Firing Index from *Doing Business* has a significant and negative relationship with MSME employment as a percent of total employment—see Figure 6. When we examine specific countries, we see that Ukraine has the second highest Difficulty of Firing



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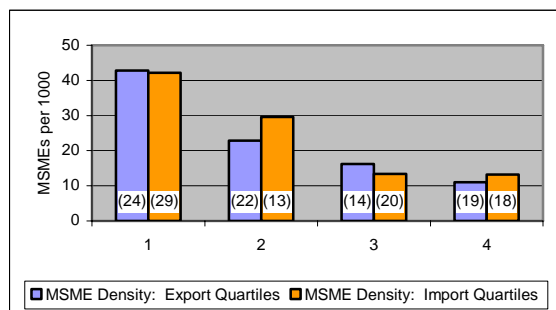
Index in our dataset and the third lowest MSME employment percentage in the region. By comparison, Bulgaria has the lowest index in Europe and Central Asia and the second highest MSME employment percentage. As this index is the only component of the Hiring and Firing sub-index that is significant, it suggests that regulatory constraints to firing are most

significant for MSME labor force expansion, as opposed to hiring regulations or hiring / firing costs.

Trading across Borders

The final business environment area we consider is Trading across Borders. At first glance, Trading across Borders may be the most surprising result of this analysis as foreign trade is not often thought of as a pursuit of most MSMEs. However, not only does it have the strongest statistical relationship of all the *Doing Business* sub-indices, but it also has the largest coefficient of correlation, meaning that if the relationship were causal, changes to the trading across borders index would yield the largest impact on MSME density. Also, Trading across Borders is the only sub-index where all components (six for this sub-index) have a significant relationship with MSME density; as would be expected, they are all negative. (i.e. Higher numbers of documents, signatures and time required to export/import are associated with lower MSME densities.) Two of the strongest relationships were with required signatures for import and export. Figure 7 shows the MSME density charted by the quartiles of these two variables. Clearly, those economies with the lowest number of required signatures have the highest density of MSMEs. Both Nicaragua and Hungary serve as examples of developing countries that are in the first quartile for both export and import signatures and have high MSME density. Within their respective regions, they have the highest and second highest densities. In contrast, Azerbaijan and Bangladesh are in the fourth quartile for both export and import signatures and have the lowest densities for their regions.

Figure 7: Median MSME Density and Signatures required to Export / Import



Frequency in Parenthesis

Several interpretations of this relationship are possible. One might take this result to suggest that the barriers to trade, like excessive required signatures, are discouraging MSMEs that would engage in trade. This result seems unlikely, as most MSMEs buy and sell domestically. What seems more likely is that the barriers to trading across borders are impacting larger firms that are integrated into the global economy. MSMEs buy from and sell to these larger firms. Thus,

the higher barriers to trade are likely constraining these larger firms. As a result, the linkages to the MSMEs are not arising or are fewer in number. If this interpretation is correct, high barriers to trade could be having a severe impact on MSME density.

Concluding Thoughts

Though the dataset is not ideal, it is the largest available collection of data on MSMEs. As such, it represents an important resource for researchers and policymakers with interest in understanding the role of MSMEs in an economy. By pursuing a more complete understanding of how MSMEs influence, and are influenced by, policy interventions and economic fluctuations, decision makers will be better positioned to design efforts that can improve the economy for all stakeholders.

This note was prepared by the Small and Medium Enterprise Department of the IFC. It is based on *Micro, Small, and Medium Enterprises: A Collection of Published Data* (August 2006) and the *Doing Business* Report (World Bank, 2006). For more information, contact Michael Ingram via email at mingram1@worldbank.org or via telephone at 202-458-9620. The entire database is available at <http://rru.worldbank.org/PapersLinks/Open.aspx?id=6358>. A newly available complementary dataset on the trend of entry / exit of firms is also available— The World Bank Group Entrepreneurship Database. This dataset is available on the SME extranet <http://www.ifc.org/ifcext/sme.nsf/Content/Resources>.