The Female CEO in Developing Countries' Firms

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Abstract

Based on the Enterprise Surveys Data from the World Bank, this paper provides a preliminary study about the effect of the female top manager on the performance of firms located in developing countries. It also uncovers the effect of female top manager on female employment and other employees' characteristics. Using two stage least squares to deal with the endogeneity problem, this study find positive effects of female CEOs on two firms' performance variables, but this result is contingent to geography, type of companies and industry where women could be operating. The results also show that having a female CEO has a positive effect on women job opportunities, and that woman will not be less risk taking than men in managing a company.

Keywords: firm performance, female CEOs, gender diversity

JEL Classification: J16, L25

Introduction

Despite the growing participation of women in the workplace, the imbalance in the boardroom is still remarkable. The latest Grant Thornton International Business Report shows that by 2012, women hold barely more than one in every five senior management roles and, according to the Economist, the proportion of women in the top jobs around the world is very low: just 3% of Fortune 500 CEOs are women. Concurrently, there exists a growing body of research suggesting that a more balanced boardroom would be advantageous to business growth prospects (Catalyst 2004 y CITAR OTROS). However, whether board diversity influences firm performance in a positive way is theoretically

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undetermined a priori. On the one hand, the female style of management suits well the changing organizations where hierarchical structures are being displaced by flatter structures, more open and more democratic in participation and leadership (Debeljuh, 2013). On the other hand, board diversity entails opinion diversity and a lengthening of the decision making process, a handicap in a world where markets demand a quick response to their changes. Khan and Vieito (2013) assert that the broader question about the gender impact of the CEO on the performance of the firm has remained an unexplored empirical question. Moreover, most of the empirical studies have been based on US data, and most of them include only the largest firms. These studies show that having a mix of women and men in top management positions leads to better firm performance and higher return to shareholders in the longer time period.

There is practically no research about female's firm management in developing countries. The purpose of this paper is to examine some quantitative information about management and gender in developing countries' firms, providing a preliminary study about the effect of the female top manager on the performance of firms. It also intends to uncover the effect of the female top manager on the female employment and other characteristics of the employees' composition. For that purpose this paper uses the Enterprise Surveys (ES from here on) Data from the World Bank. Since the survey only provides information about the gender of the top manager and not of the rest of them neither the composition of the board, the goal of the study is restricted to the analysis of the effect of female top management on firms, like Bell (2005) and Khan and Vieito (2013) does. Using two stage-least square to deal with the endogeneity problem, this study shows that there are small negative effects of female CEOs on two firms' performance variables, but this result is contingent to geography, type of companies and industry where women could be operating. However, the results show that having a female CEO has a positive effect on women job opportunities, an important factor to take into account for women empowerment issues in developing countries. Finally, the econometric analysis shows that women will be less risk taking than men in managing a company, a result in line with previous literature on this issue.

The paper is organized as follows: Section 2 discusses the literature review. Section 3 describes the data used and the research methodology. Section 4 explains the results, and Section 5 presents the conclusions.

2. Theoretical and empirical background

There are several different arguments for gender diversity in business management (see Carter et al., 2003; Smith, Smith and Verner (2006) and Khan and Vieto, 2013 for a broad review of the arguments). Understandably, the composition of the board, in gender, age and employee participation is closely related to the decision-making processes of companies (Bøhren and Strøm, 2007). Regarding of gender, the key lies in the potential of male-female complementarities. No man or woman has all the capabilities that they may have together (Debeljuh, 2013). A board of directors made up of men and women will evaluate a wider range of alternatives during the decision-making process as compared with a board made up just of men or women. A heterogeneous board is able to have a better acquaintance of the market place facing the firm, and furthermore, diversity is the marrow of creativity and innovation. Diversity management may also improve benefits by influencing customers' behavior by a gender friendly image of the firm. An alternative argument, based on the fact that labor qualifications are equally distributed among men and women, is that a diverse selection of the candidates to the board could improve the potential quality of it (Smith, Smith and Verner, 2006). Moreover, within a corporate governance framework, the composition of corporate boards is crucial to aligning the interest of management and shareholders, to providing information for monitoring and counseling, and to ensuring effective decision-making (Becht, Bolton and Röell 2002; Hermalin and Weisbach 2003; Molero, 2011).

Another strand of the literature point out the ethical consequences of diversity such Krishnan and Parsons (2008) who show that earnings quality is positively and significantly related to high gender diversity in senior management. There are also a literature that analyzes firm's productivity related to gender diversity and firm's risk taking attitude. (Richard et al., 2004) measure productivity along levels of diversity for different risk taking companies and Khan and Vieito (2013) show that firms headed by female CEOs are less risky than those managed by male CEOs. From a dynamic perspective, Dwyer, Richard

and Chadwick (2003) point out that gender diversity should enhance the performance of firms seeking growth.

Of course there are also arguments against the participation of women in firms' senior management, based primarily on the potential negative effects that diversity, not women per se, may cause on the performance of companies. The central idea is that in a heterogeneous board there will be more opinions, questions and views, which can lead to extended discussions and delayed decisions. Thus, the decision making process may not be as effective as it would with a more homogeneous board, which, in turn, will affect business performance, especially when operated in a highly competitive market, where the ability to react quickly to changes in demand or in the business environment is critical. Therefore, although decisions can have a better quality incorporating women in corporate management, at the end these benefits may not exceed the negative effects of increased slow decision-making, when the market demands quick responses (Hambrick et al. 1996).

The lack of adequate data to make consistent estimates of the effect of gender diversity on corporate performance has produced a scant number of empirical studies regarding these issues. Moreover, for the same reasons, most of the few empirical studies are based on the data of large companies in USA. Shrader et al. (1997) analyze the 200 largest US firms and they are unable to find any significantly positive relationship between the percentage of female board members and firm performance (measured by ROA and ROE). They even find significantly negative relationships in some cases. Kochan et al. (2003) also find no positive relation between gender diversity in management and firm performance for US companies. Contrary to these findings, Catalyst (2004) and Adler (2001) find positive correlations between 'female-friendly' US Fortune 500 firms and the performance of these firms. Controlling for a number of other factors, which may affect firm value, and for the direction of causality, by estimating an IV-model, Carter et al. (2003) also find a significantly positive effect of the percentage of women and minorities on boards of directors and firm value. Similarly, a recent study by Bell (2005), based on a large sample of US firms, find that women in top management (female top CEO or board members) have a positive effect on the payment of the executives of the firms, and enhances the proportion of women at lower management levels. Based on a panel of US firms over the period of 1992 to 2004, Khan and Vieito (2013) evaluate whether firms

managed by female CEOs exhibit the same performance as firms managed by male CEOs. They also examined if the gender of the CEO affects the firm risk level, and if the compensation packages that boards give to female CEOs have less risky components than those given to male CEOs. The results show that on average, the female CEO enhances firm's performance and reduces the firm risk level than when the CEO is a male.

Due to the lack of data, few empirical investigations analyze the effects of gender diversity in the performance of companies outside the US. To address the scarcity of data Henrekson and Du Rietz (2000) performed their own survey to a random sample of Swedish firms. Their analysis finds that when controlling for firm size and sectors, the underperformance hypothesis could not be confirmed, but their results have to be considered with caution due to possible endogeneity problems. Smith, Smith and Verner (2006) use a rather unique data set collected from the 2,500 largest Danish firms during the period 1993-2001. The data set is an unbalanced panel that includes extensive information regarding firms and the characteristics of the board members and thus allows us to use panel estimators and control for causality. The authors find that the proportion of women in top management jobs tends to have positive effects on the firm's performance, even after controlling for numerous characteristics of the firm and the direction of causality. The results show that the positive effects of women in top management depend on the qualifications of female top managers. Using cross-section data from a smaller set of Dutch and Danish firms observed in 2007, Marinova, Plantenga and Remery (2010) do not find any effect of board gender diversity on firms' performance. In order to avoid the endogeneity bias the authors apply two-stage least-squares using Tobin's Q as a measure of performance. Recently, Daunfeldt and Rudholm (2012) use a random-effects random-coefficients model to account for unobserved firm heterogeneity in a sample of 20,487 limited companies in Sweden during 1997-2005. They find that more gender diversity in the boardroom have a negative impact on returns on total assets after two years. In order to estimate performance gaps between male and female-owned businesses, while controlling for location by industry and country, Sabarwal and Terrell (2008) use 2005 firm level data for 26 post-socialist economies in Eastern and Central Europe. Their findings show that female entrepreneurs have a significantly smaller scale of operations (as measured by sales revenues) and are less efficient in terms of total factor productivity, although the difference

is small. However, women entrepreneurs generate the same amount of profit per unit of revenue as men.

As this small set of empirical studies show, the evidence on the effect of women at the top level of firms, with respect to the firms' performance, is mixed. Further, most of these studies are performed with available datasets from developed countries. This paper addresses some of the same empirical questions than these studies, but it uses a dataset from developing countries.

3. Nature of the data and methodology

Data comes from the World Bank's ES collected between 2006 and 2012. These surveys were conducted, individually, in various emerging countries using a common questionnaire and a common methodology. This dataset was designed to be representative of the non-agricultural private sector of these economies, with specific weights provided to correct for over sampling. The data comprise 130,000 firms in 137 developing and newly industrialized countries and covers not just manufacturing, but retail and other services. Each country is surveyed every 3 to 4 years[3]. This dataset includes a very diverse group of firms, including small, medium and large firms, young and old firms, exporting and non-exporting firms. However, only formal (registered) companies with 5 or more employees are targeted for interview. For each country, the sample is stratified by sector, location and firm-size. Sampling weights are provided to ensure that the sample is representative at the national level. Although the sample has information of at least two surveys per firm, the question regarding the gender of the CEO of the company was incorporated in the second survey, so that the data are cross-sectional in structure, not a panel.

To analyze the gender effect of the top manager on the performance of the firms, we select several dependent variables in order to provide a more well rounded and

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[3] From this data, the World Bank creates over 100 indicators that benchmark the quality of the business environment across the globe, connecting a country's business environment characteristics with firm productivity and performance. These indicators form the database called Indicators Database. They also provide the Standardized Dataset -45,335 establishments in 90 countries- which comprises country data that has been matched to a standard set of questions. This format allows cross-country comparisons and analysis but sacrifices those country-specific survey questions which cannot be matched. See http://www.enterprisesurveys.org/nada.

comprehensive analysis of the role of gender in firm performance. There is no agreement in the literature about which one is the efficient one. According to Marinova (2010) there are two main types of performance indicators that have been widely used in corporate governance research: market-based ones (e.g. Tobin's Q and portfolio returns), and financial statement ratios (e.g. Return on Equity [ROE], Return on Assets [ROA], or Return on Investment [ROI]). Notwithstanding, the ES data used here lacks the necessary information to build those standard measures of performance. Nonetheless, several alternative measures on firm performance are available. We use all these alternative measures in our analyses in order to test the robustness of our results. Using the Standardized Dataset[4] (SD from here on) we first select the (log of) sales of firms (*Total Sales*) and the (log of) the per worker sales of firms (*Per worker Sales*); in both cases the logarithmic transformation improves the estimations by reducing the pronounced asymmetry of the distribution of sales variable. We also explored the effect of the gender of the CEO in the employment of women and the education level of workers. In addition, we use some variables defined as indicators of performance in the Indicators Database (ID from here on). Among them, *(Growth in Sales)* is the annual change in sales reported in the current fiscal year from a previous period. For most countries this interval is two years; however, for some countries the interval is three years. Hence, an annualized measure is used. In the base all sales data are converted to US dollars of 2009. From the same source, we use the annualized growth of permanent full-time workers expressed as a percentage *(Annual Employment Growth)* and the annualized growth in labor productivity where labor productivity is real sales (using GDP deflators) divided by full-time permanent workers *(Annual Labor Productivity Growth)*.

The main independent variable is the gender of the top manager *(FemaleCeo)*, a dummy variable used to capture the gender effect, available in the latest surveys using the Global methodology. In addition, we use many usual controls like the size and the age of the firm, the region and the industrial sector where the firm is operating, the relationship to a conglomerate of firms, the possession of an international certification and many others.

We also add as a control variable the CEO's experience, measured by years of experience in the industrial sector. This variable is part of the human capital of the CEO

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[4] This database includes the disaggregated data in which the Indicators are based.

and as Amin and Kushnir (2012) show using the Enterprise Data, female managers have on average fewer years of experience working in the industry than male managers. In particular, experience is much larger among the relatively younger firms but smaller and insignificant among the relatively older firms. We also add interaction terms to capture the differences between male and female CEOs with respect to several firm characteristics and its effects on the firm's performance.

Table 1 presents summary statistics for the CEO and firm characteristics. Sixteen percent of them have a female CEO. The size composition of the sample is quite balanced and regarding the sector composition, manufacturing comprise 53.6% of the sample, services 40.6% and the rest corresponds to construction and transportation. On average, firms have almost nineteen years old and 15% are part of a large firm; 24% of them have an international certification.

<div align="center">INSERT TABLE 1 ABOUT HERE</div>

Differences between female and male CEOs should be evaluated with care, given the many confounding factors that could affect the observed differences in performance. First, in order to have a snapshot of such differences in the raw data and to identify possible systematic structural differences between male and female-headed firms with regards to several variables that represent production performance and general characteristics of the firms in our database. Table 2 shows that, on average, female CEOs have two less years of experience working in the industry compared with male managers. In addition, firms with female CEOs are smaller, younger and have less annual sales than for the male counterparts. However, we observe better rate of sales and labor productivity growth, though the latter differences are not statistically significant. Based on these raw figures we could not conclude whether male controlled companies over performed those with female in charge. Nonetheless, given the need to add controls and other variables that could influence these results, we proceed to use econometric techniques to test differences in performance.

<div align="center">INSERT TABLE 2 ABOUT HERE</div>

According to Smith, Smith and Verner (2006), in general, the statistical model of firm performance can be written as,

$$P_{i_t} = \alpha + \beta CEOGender_{it} + \gamma C_{it} + \delta F_{it} + w_{it} \qquad (1)$$

where P_{it} is a performance measure, which refers to the five different definitions mentioned above. $CEOGender_{it}$ is our key variable (*FemaleCeo*); while C_{it} and F_{it} are vectors of control variables corresponding to the CEOs and firm characteristics respectively; finally, w_c is an stochastic term. One of the main limitations of our database from the Enterprise Survey is that it does not allow us to apply a panel regression analysis to assess the impact of our key dependent variable: CEO gender. Thus, our equation has no time dimension and is rewritten as:

$$P_i = \alpha + \beta CEOGender_i + \gamma C_i + \delta F_i + w_i \qquad (2)$$

The effect of a female CEO in a given company cannot be directly established, since it may be the case that female CEOs could have a positive impact on the performance of a large firm or one that belongs to a large conglomerate, where other board members, more used to diversity, could have a better acceptance of feminine leadership. In the same sense, this could be possible in those industrial sectors where the presence of women is more common. In order to identify what characteristics of companies can be strongly correlated with gender differences at the top, we add interaction terms for the gender of the CEO and other independent variables to our regression model. As a result, the interaction of these characteristics with the female CEO variable is represented as,

$$P_i = \alpha + \beta CEOGender_i + \gamma C_i + \delta F_i + \lambda CEOGender_i * C_i + \tau CEOGender_i * F_i + w_i \quad (3)$$

In addition to these interactions, we need to address the problem of the direction of causality between firm performance and the proportion of women in management or the prevalence of women as a CEO. In this sense, causality can go both ways, since some companies could have a given performance because they have a woman CEO or, the specific performance make them more likely to hire a woman as a CEO. As a result, finding correlation in our regression equation does not imply causality, and we need to be able to separate this endogeneity problem in order to establish the correct impact of our

independent variable for woman CEO on the different performance measures. For the reasons given above, it is possible that firms have better performance because of having a female CEO, but equally possible is that firms doing well take the risk of having a female CEO (Smith, Smith and Vernerdiverse, 2006). In order to deal with problems of potential endogeneity and to be able to interpret results correctly, two-stage least-square (2SLS) estimation was applied. In selecting a valid instrument, we use two variables, one from our data base and the other from outside. From our database we use the information provided from the survey's question whether amongst the owners of the firm there are any females, to build a dummy variable called *(FemaleOwner)*. The underlying idea is that gender diversity in the ownership of the company has a positive impact on gender diversity in top management, so that the correlation between the variables *(FemaleOwner)* and (*FemaleCeo)* is expected to be high. Moreover, there appears no relationship between the gender composition of ownership of the company and the performance of it, so we consider that variable a good candidate for a valid instrument. In addition we use the Gender Inequality Index defined by the United Nations Development Programme (UNDP)[5]. This index is a composite measure which captures the loss of achievement, within a country, due to gender inequality, and uses three dimensions to do so: reproductive health, empowerment, and labor market participation. The dimensions are captured in one synthetic index, as to account for joint significance. According to the UNDP, none of the measures in the dimensions pertain to the country's development and therefore a less-

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[5] According to the United Nations, the Gender Inequality Index is defined as follows: "The Gender Inequality Index (GII) reflects women's disadvantage in three dimensions—reproductive health, empowerment and the labour market—for as many countries as data of reasonable quality allow. The index shows the loss in human development due to inequality between female and male achievements in these dimensions. It ranges from 0, which indicates that women and men fare equally, to 1, which indicates that women fare as poorly as possible in all measured dimensions. The health dimension is measured by two indicators: maternal mortality ratio and the adolescent fertility rate. The empowerment dimension is also measured by two indicators: the share of parliamentary seats held by each sex and by secondary and higher education attainment levels. The labour dimension is measured by women's participation in the work force. The Gender Inequality Index is designed to reveal the extent to which national achievements in these aspects of human development are eroded by gender inequality, and to provide empirical foundations for policy analysis and advocacy efforts." Humane Development Report, United Nations Development Programme, at http://hdr.undp.org/en/statistics/gii/

developed country can perform well if gender inequality is low. For a few countries where the index is not defined, we assigned the average index for the region of such country. Since the Gender Inequality Index is generated outside of our database and there are no business-related measures included in this index, we can be confident that this index is not necessarily related to our performance measures for our set of companies.

4. Estimations results

Based on the regression equation presented before and the procedures established in the previous section a summary of the OLS estimates using the SD for three of the firm performance measures is presented in Table 3. Consider, first, the results corresponding to the model with the variable *Sales* as the independent variable (Column 1). Controlling for CEO, firm and region characteristics and adding gender interactions with each of the independent variables show that a woman CEO negatively affects the amount of sales of the company. Against common sense, the negative effect of the female CEO gets worse the more experience in the field the CEOs, either female or male, have. Additionally, there are some regional effects since in those companies located in the East Asia Pacific region or in the Eastern Europe and Central Asia, women perform, in average, better than men. The opposite effect is found in companies located in Iraq, Afghanistan, Nepal or Sri Lanka. Regarding industrial sectors, women in services, construction or transport perform better than their men counterpart. In this regression of *Sales* as a dependent variable all the coefficients are statistically significant at 1%, with the exception of the coefficient for Construction or Transport. The results obtained by changing the independent variable to *Per worker Sales*, are very similar in the size of the coefficients and their statistical significance (Column 2). Finally, in order to explore the effect of the gender of the CEO on the employment of women, Column 3 shows the third econometric model, which shows, without doubt, that women in the highest office of the companies are more prone to employ women than men do, but the difference, although statistically significant at 1%, is small. Conversely, if the firm is located in Yemen or in the East Asia Pacific region and is small, having a man CEO would increase the employment of women. Regarding the effect of the CEO women on the human capital of the workers, it was not possible to obtain results due to the lack of observations. Summarizing, these results tend to support the view that women CEO are less productive than males CEOs, as reflected in the sign of the female CEO

coefficients. Nonetheless, to be able to have a definitive answer, the problem of endogeneity should be resolved.

In order to address the endogeneity problem, the Two Stage Least Squares (TSLS) technique is applied to the econometric model. Thus, the estimated TSLS coefficients for the performance measures regarding the sales and the per worker sales of the firm (the regressions that could suffer more from endogeneity) are reported in Table 4. As expected, many coefficients and their corresponding standard errors change in value and, there are also coefficients that change from negative to positive. These results show that the negative CEO gender coefficient is stronger than in the estimates using OLS, but the experimented female CEO, perform better in terms of sales. Additionally, medium and large size firms run by women perform better and provided that the company belongs to an industrial sector other than manufacturing, and the firm is not operating in a country located in the Sub-Saharan Africa region, women running those firms produce sales amounts quite similar to men CEOs. In the second column, the results for the regression of the per worker sales show larger coefficients but, broadly speaking, the results do not change regarding the sales regression in column 1. In both regressions, all the coefficients are statistically significant at 1%. These results show that, differently than in the simple OLS regression results, the performance of women CEOs need to be qualified since the results will change depending on the type of industry where the company is located, as well as the region that it belongs to.

Since 2006 the ES collect firm data for a uniform universe, using a uniform methodology of implementation, and a core questionnaire. Based on this Global methodology, they provided a set of Indicators that are comparable across countries and survey years. Indicators created from surveys that did not follow the Global methodology are not comparable to other surveys, so even though this database comprises 103,898 observations, only 70,397 are comparable since in many countries the ES is not Global[6].

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[6] For example: Brasil and Costa Rica in Latin America or, Russia and other countries in European and Central Asia region among others.

Table 5 and 6 present the TSLS results based on this Indicators data. A word of caution regarding this data is that Global surveys are stratified by business sector, location, and firm size so, when analyzing ES indicators in these groupings, the results are representative of the associated populations. However, since the Global sampling methodology does not stratify by gender of the top manager, exporter status, or ownership (ex post groupings), the intended level of precision is not guaranteed for indicator values by these groupings (Enterprise Survey, 2012). In each case we performed endogeneity and strength of IV instruments test, and we found that there is an endogenity problem and the instruments are strong ones. Accordingly, this confirms that the methodology selected is adequated[7].

Controlling for several firm characteristics like firm age, whether export or not, foreign or domestic, its size, geographic region and industry, and their interactions with the variable of interest female CEO, it is observed in column 1 and 3 in Table 5 that the latter is significant - at 1% and 5%- for both sales growth and growth of labor productivity. However, this variable is not significant for the case of employment growth. These results show that the female CEO enhance the rate of growth of Sales and Labor Productivity. When we take into account the interactions with different control variables we see that this positive effect is reduced because of the negative and significant coefficients that we observe. However, all in all, we have a positive net effect for the impact of a female CEO on both performance measurements.

INSERT TABLE 5 ABOUT HERE

Although the results shown in Table 5 are useful to understand the effect of an executive president, absolute changes may not show the full impact of female leadership on the performance of companies. Therefore, and complementing the estimates in Table 5, Table 6 presents the results of the relative variations of indicators linked to sales performance and productivity. To do this we calculate the deviation of each average value indicator for the country in which the company operates. This new estimates yield positive and statistically significant at 1% for the variable female CEO, but the size of the positive coefficient is much lower than the case in Table 5. Once again, the coefficients for the

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[7] Tests results are available upon request.

interaction variables are negative although of a smaller size than the ones found in Table 5. These results from Table 6 show the robustness of the estimations.

INSERT TABLE 6 ABOUT HERE

5. Concluding Remarks

The performance of women in business, especially at top levels, is a very important issue, as more women are able to "break the glass ceiling" of the higher echelons of corporations. A strong debate has been ongoing in developed countries despite the lack of many studies that try to address issues of women's performance in business. Nonetheless, this debate is almost inexistent in developing countries, where most of the efforts regarding women empowerment are focused on the labor market and in small family businesses. This study attempts to fill a gap in this empirical body of literature by testing the effect of women CEOs in a large dataset of companies located in a very diverse set of developing countries. This is a unique opportunity to see how, having a female CEO, could have an impact on several performance variables of companies, as well as in the opportunities of other women in the labor market.

This empirical study uses a two stage least squares techniques, with the intent to eliminate endogeneity problems, to test for the impact of women CEOs on Total Sales, Sales Per Worker, Female Employment and growth of Sales per Worker, Employment and Productivity. The results show that the effect of women CEOs on Sales and Sales per Worker of companies is slightly negative, and significant, but that the size of this effect will depend on the location of the company, the size and the industry in which it is located. This result indicates that the performance of women has to be qualified by these many factor, which could be an indicator of the difficulties that women still face in some world regions or specific industries. Further, the impact of women CEOs on women's employment is positive and significant. This is an important result that highlights that other women in powerful positions can become key actors to empower and change participation of women in the labor market. Finally, in the case of the impact of CEO women in the growth rate of Sales per Worker, Employment and Productivity, the coefficient is, in general, positive and significant, although it needs to be qualified by similar interaction factors mentioned in the previous results, which reduce the difference with male counterparts. This positive effect of

women CEO is in contrast with a large body of empirical literature, mainly in developed countries, which shows that women tends to take less risk than men and, as a result, the performance of companies under women CEOs will grow and prosper but with much less volatility than companies led by men CEOs. This result highlights the need for further research in the effect of Women CEOs in developing and emerging markets.

Summarizing, this study highlights some important effects of women CEOs in companies' performance, women's employment and general volatility of businesses. It is our hope that these results will pave the way for further interest in the role of women in leadership positions in the private sector in developing countries. By getting to know better these relationships and effects we can help to devise a better understanding of different policies and programs to help women to gain more space in providing leadership and expertise.

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Table 1. Data Descriptive Statistics					
Variable	Observations	Means	Standard Deviation	Min	Max
Female CEO	38814	0.16	0.37	0	1
CEO experience in the sector	44407	17.81	11.14	0	75
Firm Size	38814	1.83	0.78	1	3
small(<20)	18917	1.00	0.00	1	1
medium(20-99)	16077	2.00	0.00	2	2
large(100 and over)	10341	3.00	0.00	3	3
Firm Age	44426	18.64	16.21	0	195
International Certification	37712	0.24	0.43	0	1
Part of a large firm	5734	1.00	0.00	1	1
Sector					
Manufacturing	24318				
Services	18432				
Construction and transportation	2568				
Firm Sales (in logarithm)	38804	17.117	3.203	4.605	34.105
Sales per worker (in logarithm)	38692	13.669	2.841	-2.565	29.002

Table 2. Male versus Female CEOs						T test-mean difference
	Male CEOs			Female CEOs		
	Nº observations	Means		Nº observations	Means	
CEO experience in the sector	37070	18.181		7337	15.919	15.93***
Firm Size	37848	1.849		7487	1.613	24.02***
Firm Age	37200	18.931		7226	17.164	8.48***
International certification	36672	0.251		7275	0.181	12.74***
Part of a large firm	37317	1.842		7483	1.877	-7.73***
Sector	37836	1.517		7482	1.531	-1.82*
Firm Sales (in logarithm)	32622	17.203		6182	16.663	12.17***
Sales per worker (in logarithm)	32527	13.682		6165	13.597	2.14**
Nº of female full time employees	16750	2.062		4135	2.060	0.07
Real annual sales growth	19550	2.638		3263	3.402	-1.35*
Annual labor productivity growth	18191	-1.861		3148	-0.734	-1.89**
Relative real annual sales growth	19550	0.024		3263	-0.217	0.468
Relative annual labor productivity growth	18191	0.029		3148	-0.257	0.520

Table3.

	Standardized Data Base		
	Total Sales (in log)	Sales per worker (in log)	Female employees
Female CEO	-0.35** (0.148)	-0.32 ** (0.14)	0.32 *** (0.05)
CEO controls	yes	yes	yes
Firm controls	yes	yes	yes
Region controls	yes	yes	yes
Sector controls	yes	yes	yes
Female CEO interactions	yes	yes	yes
CEO industry experience	-0.01*** (0.00)	-0.01** * (0.00)	0.00 * (0.00)
Medium size	ns	ns	0.08 *** (0.03)
Large size	ns	ns	ns
Region EAP	1.03*** (0.16)	1.12 *** (0.16)	-0.38*** (0.05)
Region ECA	0.43 *** (0.14)	0.48 *** (0.14)	ns
Region LAC	ns	ns	-0.22 ** (0.05)
Region MNA	ns	ns	-1.50** (0.44)
Region SAR	-1.02 *** (0.22)	-1.02 *** (0.21)	ns
Services	0.22 *** (0.08)	0.23*** (0.08)	ns
Construction or Transport	0.44** (0.21)	0.34* (0.20)	ns
Observations	37094	36992	19865
R^2	0.25	0.08	0.60
*** p<0.01			
**p<0.05			
*p<0.10			

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Table 4		
	Standardized Data Base	
	Total Sales (in log)	Sales per worker (in log)
Female CEO	-40.61*** (5.42)	-43.35 *** (5.56)
CEO controls	yes	yes
Firm controls	yes	yes
Region controls	yes	yes
Sector controls	yes	yes
Female CEO interactions	yes	yes
CEO Industry Experience	0.16 *** (0.02)	0.17 *** (0.02)
Medium size	3.05 *** (0.41)	3.19 *** (0.42)
Large size	2.76 *** (0.41)	2.90 *** (0.41)
Region EAP	35.74*** (4.69)	38.23*** (4.80)
Region ECA	34.26 *** (4.56)	36.66 *** (4.68)
Region LAC	34.18 *** (4.60)	36.60 *** (4.72)
Region MNA	34.24 *** (5.12)	36.47 *** (5.25)
Region SAR	33.90 *** (4.73)	36.30 *** (4.84)
Services	3.83 *** (0.50)	4.09 *** (0.51)
Construction or Transport	3.52 *** (0.50)	3.45 *** (0.53)
Observations	32931	32864
*** p<0.01		
**p<0.05		
*p<0.10		

Table5			
Indicator Data Base			
	Real annual sales growth	Annual employment growth	Annual labor productivity growth
Female CEO	96.32*** (25.96)	ns	70.65** (27.46)
Firm controls	yes	yes	yes
Region controls	yes	yes	yes
Sector controls	yes	yes	yes
Female CEO interactions	yes	yes	yes
Firm age	-20.54*** (5.42)	ns	-15.31*** (5.72)
Exporter	-5.00**	ns	ns
Foreing ownership	-9.97*** (3.31)	ns	-8.07** (3.45)
Medium size	ns	ns	ns
Large size	8.88*** (2.21)	ns	8.77*** (2.39)
Region EAP	-42.56*** (11.25)	ns	-32.80*** (11.93)
Region ECA	-	ns	-
Region LAC	-34.06*** (9.11)	ns	-25.73** (9.70)
Region MNA	-41.46*** (14.44)	ns	-23.248 (15.715)
Region SAR	-35.75***	ns	ns
Services	-8.13** (3.26)	ns	ns
Construction or Transport	-15.92** (7.07)	ns	-15.30** (7.55)
Observations	17493	23208	16286
R^2	.	.	.
*** $p<0.01$			
**$p<0.05$			
*$p<0.10$			

Table 6		
Indicator Data Base		
	Relative real annual sales growth	Relative Annual labor productivity growth
Female CEO	47.27*** (6.81)	55.40*** (7.13)
Firm controls	yes	yes
Region controls	yes	yes
Sector controls	yes	yes
Female CEO interactions	yes	yes
Firm age	-10.01*** (1.36)	-11.53*** (1.42)
Exporter	-1.28** (0.68)	-2.15** (0.71)
Foreing ownership	-5.23*** (0.93)	-5.73*** (0.98)
Medium size	-2.01*** (2.47)	-2.36*** (0.49)
Large size	1.67** (0.64)	1.59** (0.67)
Region EAP	-20.11*** (3.13)	-23.40*** (3.28)
Region ECA	-	-
Region LAC	-15.30*** (2.55)	-18.53*** (2.67)
Region MNA	-19.38*** (4.11)	-22.90*** (4.31)
Region SAR	-17.92*** (3.13)	-20.49*** (3.28)
Services	5.56*** (0.94)	-6.68*** (0.99)
Construction or Transport	-8.43*** (2.00)	-9.87*** (2.09)
Observations	22.963	22.963
R^2	.	.
*** p<0.01		
**p<0.05		
*p<0.10		