

**THE IMPACT OF FOREIGN DIRECT INVESTMENT (FDI)
ON WOMEN'S ENTREPRENEURSHIP**

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ABSTRACT

Women entrepreneurs around the world have increasingly contributed to innovation, employment, and wealth creation (Brush & Cooper, 2012; Brush, de Bruin, & Welter, 2009). Studies suggest that foreign direct investment can be an important determinant of entrepreneurship in general. However, the link between foreign ventures and women entrepreneurs remains under-researched. Therefore, we suggest that the presence of foreign ventures affects women's entrepreneurship. We develop and test our model on cross-sectional data encompassing 36 countries in 2006. The results show that foreign direct investment and women's entrepreneurship have an inverted u-shaped relationship. Implications for further research and public policy are discussed.

Keywords: women entrepreneurs, foreign direct investment, developing economies, under-developed economies

INTRODUCTION

Research suggests that entrepreneurship is the driver of economic development and growth (Acs, 2006; Audretsch & Acs, 1994; Schumpeter, 1934). Businesses and institutions can provide a nurturing environment for venture start-ups and their growth (Audretsch & Lehman, 2005; Sternberg & Rocha, 2007). Accordingly, studies show that the foreign ventures may be influential on entrepreneurship and economic growth in host countries (Ayyagari & Kosová, 2006; Borensztein, De Gregorio, & Lee, 1998).

Despite the general agreement on the effects of foreign ventures on entrepreneurship in general, the impact of foreign direct investment on women's entrepreneurship remains under explored, particularly since women's entrepreneurship itself largely lacks research attention (Brush & Cooper, 2012). Women entrepreneurs' businesses are one of the fastest growing entrepreneurial populations in the world (Brush & Cooper, 2012). Women make a substantial positive impact on economic growth through innovation, employment, and wealth generation across countries via their entrepreneurial successes (Ahl, 2006; Brush, Carter, Greene, Gatewood, & Hart, 2006). Research suggests that women's entrepreneurship appears to be opportunity-based in developed economies and necessity-based in less developed economies (Brush & Cooper, 2012). As a result, women entrepreneurs generally make a significant impact on economies in regard to job creation and innovations. In some countries (e.g. U.S.), women are starting and acquiring businesses at a faster rate than any other segment (Morris, Miyasaki, Watters, & Coombes, 2006).

Owing to the women's remarkable contributions to world economies, differences from male entrepreneurs, and unique challenges they face (Buttner & Rosen, 1989), examining the determinants of women's entrepreneurship is crucial both theoretically and practically. Research mostly identifies the individual, socio-cultural, economic, and political factors affecting women's entrepreneurship around the world (e.g. Ahmad, 2011; Brush & Cooper, 2012; Roomi & Parrott, 2008, Welsh & Dragusin, 2010). Foreign direct investment may play an important role in women's entrepreneurship in host countries as well. However, to date, the extent and nature of this relationship is unclear both in theory and practice, and we do not know enough about whether FDI has facilitating or restricting effects on women's entrepreneurship. We suggest that foreign direct investment may influence women's entrepreneurship. Furthermore, we expect a more complex relationship than a linear one, which is an inverted u-shaped relationship. Accordingly, we develop and test our model using panel data of 36 countries in 2006. As we expected, the results show that foreign direct investment has an inverted u-shaped relationship with women's entrepreneurship.

This paper contributes to the entrepreneurship literature in a variety of ways. First, it explores a research topic, which has both theoretical and practical significance to world economies. Second, this article demonstrates the impact of the presence of foreign ventures on women's entrepreneurship. The presence of foreign ventures can influence women's entrepreneurship in a complex manner, both positively (up to an optimum level) and negatively (after an optimum level). Third, the findings of this article have significant implications for policy makers. As this

paper illustrates, the presence of foreign ventures influences women's entrepreneurial activities. Therefore, countries wanting to encourage the formation and growth of women's entrepreneurship should pay close attention to the determinants of women's entrepreneurship such as the foreign direct investment phenomenon. The current support programs generally do not distinguish between male and female nascent entrepreneurs. However, when support programs consider the gender-specific challenges as well as the opportunities, the nascent entrepreneurs can be better prepared for successful venture start-up and management.

We begin with providing an overview of foreign direct investment and women's entrepreneurship. Then, we develop our hypothesis. Next, we present the methodology and the empirical findings. In the last section, we discuss the results and implications for future research and public policy.

Foreign Direct Investment and Women's Entrepreneurship

FDI net inflows are the value of inward direct investment made by non-resident investors in the reporting economy, including reinvested earnings and intra-company loans, net of repatriation of capital and repayment of loans. Foreign ventures tend to have a positive impact on economic development through enhancing local firm productivity (Hu & Jefferson, 2001; Javorcik, 2004), leading to new market development, facilitating the mobility of human capital (Cheung & Lin, 2004; Fosfuri, Motta, & Rønde, 2001), enabling knowledge spillover, (Borensztein, De Gregorio, & Lee, 1998; Branstetter, 2000; Fang, Memili, & Chrisman, 2012), and reducing the unemployment rate (Braconier

& Ekholm, 2000; Lipsey 1995). However, the link between foreign direct investment and women's entrepreneurship is not clear in theory and practice yet, although women entrepreneurs play a critical role in world economies (Brush & Cooper, 2012) and is likely to be influenced by foreign direct investment.

Foreign direct investment in an economy may provide learning opportunities regarding foreign markets, such as a quality criterion, market structure, and consumer preferences to the host country's nascent entrepreneurs (Chung, Mitchell, & Yeung, 1996; Blomstrom, Kokko, & Zejan, 1995; Branstetter, 2000). Moreover, purchasing goods and services from incumbent foreign firms or joint ventures within national boundaries may provide opportunities to learn advanced technologies, which accelerate the technological innovations embodied in the development of goods to meet local demands (Coe & Helpman, 1995; Keller, 1998, 2002, 2004).

While explicit knowledge is likely to flow from international trade or transactions with foreign-owned and/or joint ventures in an economy, the acquisition of implicit knowledge is comparatively difficult to pass beyond national boundaries (Audretsch & Feldman, 1996; Branstetter, 2001; Si & Bruton, 1999, 2003, 2005). Implicit knowledge, such as managerial experience and technological "know-how" are not always recordable (Polanyi, 1967; Nelson & Winter, 1982). Joint ventures, owned by both foreign and local entities, may provide a platform that facilitates the spillover of implicit knowledge (Bartlett & Ghoshal, 1989; Liu, Wright, Filatotchev, Dai, & Lu, 2010). Indeed, social networks may accelerate the transmission of implicit knowledge (Bartlett & Ghoshal, 1989; Kogut & Zander, 1993; Nohria & Ghoshal,

1997). Within the framework of trustworthy closely linked networks, the transaction cost of knowledge transmission associated with opportunistic behaviors may also be reduced (Williamson, 1985; Ethier, 1986; Teece, 1986).

Studies identify women entrepreneurs with unique networking skills owing to their well-connected strong personal and family ties (e.g. Dragusin, 2007; Salmenniemi, Karhunen, & Kosonen, 2011). This can enhance women entrepreneurs' quick learning from activities of the foreign direct investment in their countries and build upon that in their own entrepreneurial activities.

Additionally, foreign direct investment can provide employment opportunities primarily to the male job searchers particularly in developing and under-developed countries with patriarchal tendencies. Indeed, studies show that foreign ventures can reap the benefits of cost reduction in a host economy through access to local labors and resources (Arndt, 1997; Burda & Dluhosch, 2002; Hummels, 2007). Employing locals in under-developed regions can substantially reduce the operational costs of production (Arndt, 1997; Burda & Dluhosch, 2002), while recruiting locals in advertising, broadcasting, promotion and customer service may also reduce the cost associated with new market developments (Agrawal, 1995; Steger, 2002). In return, the host countries can benefit from a decline in the unemployment rate. In developing and under-developed countries, male job searchers may have an advantage over women in joint ventures' hiring. This can leave entrepreneurial opportunities to be identified and captured by the women nascent entrepreneurs who often do not have equal opportunities in job markets. Moreover, owing to religious and/or

cultural limitations, women's employment at foreign ventures may not be the norm. This can motivate women to start up their own businesses.

Nevertheless, after an optimum number of foreign ventures in a host country, the presence of a higher number of foreign ventures can increase the competition and small businesses owned by women entrepreneurs may not have the means and capacity to be able to compete, forcing them to exit or fail particularly when broader customer and supplier networks, which are critical for growth, are male-dominated (Weiler & Bernasek, 2001). Additionally, after a certain number of foreign ventures, the increasing volume of foreign direct investment may require even more labor than the available male population. This can lead to the allowance and acceptance of more women in the workforce. When labor market opportunities increase and are more attractive than the entrepreneurial market, women may prefer employment over self-employment.

Given entrepreneurial versus job opportunities, the entrepreneur is expected to compare the opportunity cost of being self-employed with expected entrepreneurial benefits (Johnson, 1986; Shane & Venkataraman, 2000; Venkataraman, 1997). An individual prefers exploiting entrepreneurial opportunities only if he/she perceives that the entrepreneurial benefit he/she will receive exceeds the opportunity cost (Amit, Muller, & Cockburn, 1995; Shane, 2003). When a potential entrepreneur has no existing job, the opportunity cost of entrepreneurship is low or zero. This can increase the likelihood of engaging in entrepreneurship (Storey, 1991). Thus, at the macro level, a higher level of unemployment can cause a higher level of entrepreneurship, or so-called

“refugee effect” (i.e., unemployment push) suggested by past studies (Hamilton, 1989; Reynolds, Miller & Maki, 1995; Reynolds, Storey, & Westhead, 1994). However, when there is an attractive job opportunity provided by a foreign venture, it is likely that the individuals would prefer the employment at the foreign venture, rather than being self-employed. If/when such opportunity appears because of increased number of foreign ventures, women entrepreneurs are also likely to join the foreign ventures’ work force rather than being self-employed. Therefore, we expect an inverted u-shaped relationship between foreign direct investment and women’s entrepreneurship.

H1: Foreign direct investment has an inverted u-shaped relationship with women’s entrepreneurship in developing and under-developed countries, such that foreign direct investment will have positive effects on women’s entrepreneurship up to an optimum level and after an optimum level, foreign direct investment will have negative effects on women’s entrepreneurship.

METHODS

Data

In this study, data are collected from the World Bank Indicators (WBI) (2008), which is one of the largest data sources for international studies. For the analysis of our hypothesis, we employed cross-sectional data for 36 countries for the year 2006 after dropping observations with missing values. The countries include Angola, Argentina, Bolivia, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Chile, Colombia, Congo, Dem. Republic, Ecuador, El Salvador, Ethiopia, The Gambia,

Guatemala, Guinea, Guinea-Bissau, Honduras, India, Jordan, Lebanon, Malawi, Mauritania, Mexico, Namibia, Nicaragua, Niger, Panama, Paraguay, Peru, Rwanda, Swaziland, Tanzania, Uganda, and Uruguay. This sample is representative of the population of emerging economies since it includes developing and under-developed countries. There is no particular intention to use these countries or the specified year, as it is driven by the international data availability. Please visit the WBI 2008 data set for more information about the data and variables at <http://data.worldbank.org/topic/labor-and-social-protection>.

Variables

Dependent Variable

Female Ownership: We used the firms with female participation in ownership (% of firms) as the dependent variable in our empirical model. This variable measures the percentage of female participation in firm ownership. On average, about 30.18 percent of firms have female ownership participation, but the range varies from 9.11 percent to 44.76 percent.

Control Variables

Rural Population: This variable is used in the model as a control variable. The percentage of the total population in a country that is living in a rural area is defined as rural population. On average, 50.61 percent of the total population is living in a rural area, but there are countries where the size of the rural population is very small (7.90 percent of total population), and there countries where the size of the rural population is large (89.68 percent of total population).

Rigidity of employment Another set of control variables we included consists of the rigidity of the employment index, trade as a

percentage of GDP, and gross domestic product per capita (constant 2,000 USD). World Bank developed an index to measure rigidity of employment. This index measures the regulation of employment in terms of the hiring and firing of workers and the rigidity of working hours, which ranges from 0 to 100, with 0 being the least rigid regulations and 100 being the most rigid regulations. In our data set, it varies from 7 to 78, with the mean of 43.33, which indicates there are some countries where it is very hard to become employed compared to others.

Gross Domestic (GDP) product per capita

The next control variable is gross domestic product per capita (constant 2,000 USD), which indicates a country's economic well-being. Each country tends to differ substantially in terms of their economic status. This variable is measured as gross domestic product divided by the midyear population. This variable provides information about economic performance over time. However, the well-being of the population also depends on other factors. For example, these include the amount of leisure time, environmental quality, crime rate, and health. Nevertheless, these variables are not readily available to the public. The annual mean gross domestic product per capita is 1,937.38 dollars per person and it ranges from 90.77 dollars to 8,692.54 dollars per person. Hence, there is a high level of variation among the employed countries in terms of their well-being (GDP per capita).

We have included two variables, time and cost to create ventures, to explain the nature of country's business environment. The time variable measures the time that is required for an entrepreneur to start up a business. We find, on average, it takes about 54 days to form a new business, but

the range varies from 16 days to 233 days regardless of the gender of entrepreneurs. Similarly, the cost of business start-up procedures is about 125.61 percent of Gross National Income (GNI) per capita on average, ranging from 9.8 to 498.2 percent of GNI per capita.

Female participation in the labor force

The female labor force participation is an indicator of a country's progressiveness. It is measured as the percentage of women in the labor force. In recent times, women have increasingly participated in the labor force, which has been driving employment trends and minimizing the gender gap in the workplace. The female participation rate in our sample is 60 percent, and varies from 29.50 percent to 93 percent.

Aid per capita This control variable is used to predict the dependent variable. In 2006, the countries in this sample received about 49.91 US current dollars per person and this ranged from 1.24 dollars to 266.62 dollars per person.

Exports of goods and services Another independent variable we examined is exports. The World Bank defines this variable as the net value of exports of goods and services of a country to the rest of the world as a percentage of GDP. The mean percentage of exported goods and services in the year 2006 for our sample is 34.50 percent and varies from 10.77 percent to 81.20 percent.

Independent Variables

Foreign direct investment (FDI) The last independent variable is net inflow of foreign direct investment. This variable indicates the interest of foreign investors in a particular country. The World Bank collected this variable as a percentage of GDP for the year 2006. On average, a

country from the employed sample received FDI of about 4.56 percent of GDP, and it ranged from -0.13 to 22.83 percent of GDP. The negative simply means that outflows of investments exceed inflows. In our sample, countries like Angola and Mauritania had

outflows of investments that exceeded inflows and therefore have a negative sign. Foreign direct investment squared (FDISQ) is also calculated to test the inverted u-shaped relationship.

Table 1: Summary Statistics and correlation

	Mean	Std. Dev	1	2	3	4	5	6	7	8	9	10
Firms with female participation in ownership	30.18	9.86										
Percent of rural population (% of total population)	50.62	24.74	1.00									
Cost of starting a business (\$)	125.61	127.74	-0.28	1.00								
Time required to open a business (days)	53.75	43.57	-0.42	0.40	1.00							
GDP per capita (\$)	1937.38	2243.54	-0.11	0.10	0.40	1.00						
Employment index	43.33	19.51	0.21	-0.79	-0.50	-0.17	1.00					
Percent of female pop. in the labor force (%)	60	17.56	-0.18	0.20	0.52	0.40	-0.30	1.00				
Exports of goods and services (% of GDP)	34.50	18.61	0.05	0.51	0.40	0.01	-0.36	0.39	1.00			
Aid per capita (\$)	49.91	53.15	-0.06	-0.25	0.05	0.33	0.17	0.03	-0.34	1.00		
Foreign direct investment (% of GDP)	4.57	5.41	0.18	-0.03	-0.06	-0.02	-0.18	-0.11	-0.33	-0.18	1.00	
			-0.10	-0.40	-0.12	0.04	0.19	-0.19	-0.39	0.26	0.37	1.00

METHODOLOGY

To analyze our hypothesis, we gathered only one year of data for this paper. Hence, the obvious econometric model of Ordinary Least Squares is employed to determine the relationship between dependent and independent variables. The percent of firms with female ownership participation in a country is employed as the dependent variable and the explanatory variables include percentage of rural population, time required to open a business, cost of opening

a business, gross domestic product per capita, employment rigidity index, percentage of female population in the labor force, percent of exported goods and services, aid per capita, and foreign direct investment.

RESULTS

Table 2 presents the regression results. We employed the firms with female participation in ownership as the dependent variable in this analysis.

Table 2: Results: Effects of FDI on Female Participation in Ownership: OLS Estimates, Heteroskeasticity-corrected

Variable	Control Model	Pooled Model
Dependent variable: Firms with female participation in ownership		
Constant	16.08 (25.81)	37.33 (26.39)
Percent of rural population	-0.15 (0.11)	-0.26* (0.13)
Time required to open a business	0.03 (0.03)	-0.01 (0.03)
Cost of starting a business	-0.03** (0.01)	-0.03* (0.01)
Log-GDP per capita	0.08 (6.35)	-5.17 (6.77)
Employment index	-0.14** (0.06)	-0.15** (0.07)
Percent of female population in the labor force	0.38*** (0.10)	0.33*** (0.11)
Aid per capita	0.09*** (0.02)	0.08*** (0.02)
Exports of goods and services	0.12 (0.09)	0.18* (0.09)
Foreign direct investment		1.56** (0.64)
Square Foreign direct investment		-0.12*** (0.03)
Adjusted R-square	0.64	0.98

Asterisks (*, **, ***) denote significance at the 10, 5 and 1 percent level, respectively.

In the first model, we ran the analyses with control variables. Percent of rural population and cost of starting a business are the only significant variables in this model. In the second pooled model, we ran the analyses with control and independent variables. Both percent of rural population and the cost of starting a business are significant in the pooled model and in the expected direction. The percent of rural population is significant at the 10 percent level, which indicates that while keeping all other variables in the model constant, percent of female owners decreased as the

total number of rural population in a country increased. Similarly, percent of female owners decreases as the cost of starting a business increases and this variable is significant at the 10 percent level as well. So countries with higher rural populations and higher costs of starting a business minimize the number of women-owned business startups.

The female business ownership participation rates also depend upon the employment conditions in a country. This relationship is negative and significant at

the 5 percent level, which means that female business ownership participation rates significantly increase as employment conditions improve. Hence, while keeping other variables constant, better employment conditions increase percentage of female ownership in businesses.

The next significant relationship involves the female labor force participation rate. This variable enters positively into the equation, which means that increasing female participation into the labor force increases the interest of female entrepreneurs to participate in a business or at least it increases their chances to include themselves in businesses.

The exports variable is also significantly (at the 5 percent level) related to the dependent variable. A positive relationship seems to exist between export and the percentage of female ownership, which is in the predicted direction. This means that an increase in exports will also increase the percentage of female business owners, while holding all other variables in the model constant.

The rest of the explanatory variables, including aid per capita and FDI, are significant. Both of these variables enter into the model with a positive sign, which indicates that higher per capita aid and FDI will increase the number of female business owners, while keeping all other variables in the model constant. Interestingly, we added a squared FDI variable in our empirical model to investigate the hypothesized inverted u-shaped relationship and that variable is also significant with the expected sign. This finding supports our hypothesis suggesting an inverted U-shaped relationship. That is, to a certain extent, the net inflow of FDI increases the number of female business owners, but after a point,

FDI inflow might negatively affect the female business owners in a country.

Variance inflation factors (VIF) were calculated and did not indicate any multicollinearity problem in the dataset since the VIFs did not exceed ten. The regression figures in this table are estimated using the OLS estimation technique and we used the Wald test to check for heteroskedasticity and we corrected accordingly.

DISCUSSION AND IMPLICATIONS

There has been a tendency to investigate the direct effects of foreign direct investment on entrepreneurship in general while the relationship between foreign ventures and women's entrepreneurship is worth investigating owing to women's critical role in entrepreneurship across countries. We suggest that foreign ventures influence women's entrepreneurship in developing and underdeveloped countries, and this relationship is a u-shaped one. We test our model on cross sectional data of 36 countries for the year 2006. The results support our hypothesis. Thus, foreign direct investment is found to impact the women's entrepreneurship in developing and under developed countries.

We hope our study will spark further research concerning women entrepreneurs. Indeed, more future research is needed concerning women entrepreneurs around the world. For example, how and why women owned businesses succeed or fail is also worth investigating. Therefore, cross-country longitudinal studies examining the key success/failure factors of women entrepreneurs will be helpful to enlighten theory, practice, and policy making. Additionally, research needs to be done concerning the most effective means to create public-private partnerships that empower women entrepreneurs and propel

their businesses. This should also be investigated with funding specifically in mind. Optimal finance options that encourage women entrepreneurs to not only launch their business, but also grow their businesses is needed. Often times in emerging countries loans are minimal and may alleviate basic start-up costs, but getting these businesses to the next level requires investment that seems to be lacking from private/public partnerships. While this may vary from country-to-country in terms of acceptance, outreach, partners, and logic, further investigation may uncover the formulas for success for specific countries, regions, ethnicities, and business types.

Studies generally investigate the individual, socio-cultural, economic, and political factors affecting women's entrepreneurship around the world (e.g. Ahmad, 2011; Brush & Cooper, 2012; Roomi & Parrott, 2008; Welsh & Dragusin, 2010). However, to our knowledge, the impact of foreign direct investment on women's entrepreneurship in host countries has not been investigated. Our empirical results provide support that the women's entrepreneurship in developing and under-developed countries may be driven by the presence of foreign ventures up to an optimum level. However, after an optimum number of foreign ventures, the number of women owned businesses decreases. This finding can assist scholars, practitioners, and policy makers better understand how the existence of foreign ventures may foster favorable conditions for local women entrepreneurs to identify and capture entrepreneurial opportunities up to an optimum level and then after an optimum number of foreign ventures, the women's entrepreneurship is affected negatively by foreign ventures. Accordingly, the effect of foreign ventures on women's entrepreneurship is more

complex (i.e. curvilinear), rather than a simple linear one.

Programs and funding that promote entrepreneurship and economic growth in both the developed and developing countries are increasing (Acs & Szerb, 2007). However, these tend to be based on the assumption that new ventures of comparable size have similar developmental needs and potentials. Accordingly, public policy programs usually segment potential firms according to size (employees and sales turnover) and/or industry as the "SMEs" without consideration for the demographical differences in ownership and/or management. This study emphasizes that women entrepreneurs are distinct from male entrepreneurs in economically significant ways. Our theory and evidence on the impact of the FDI on women entrepreneurs is a first step toward assisting policy makers in developing a support system for economic growth that takes into account the idiosyncratic characteristics and challenges of a ubiquitous and relevant group of entrepreneurs. The better the distinct characteristics of women entrepreneurs and their venturing are understood and articulated, the better policy makers will be able to provide support programs for the growth of women entrepreneurs and their new ventures. In case of a failure to recognize the importance of women entrepreneurs, their ventures, and idiosyncratic needs, economic growth could be adversely affected. Perhaps the most important message of this study to policy makers is the need to develop initiatives to support women entrepreneurs to succeed in the long run beyond the governmental support that is extensively devoted to support venture start-ups.

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