THE DETERMINANTS OF FIRM'S GROWTH: AN EMPIRICAL EXAMINATION

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ABSTRACT

This research examines the determinants of firms' growth. Our findings indicate that firms willing to grow substantially and government programs designed to boost firms' growth should put emphasis on investing in newer technology, diversifying from regional markets towards national and international markets, and delivering adequate returns, which provide the financial means to grow. These factors proved to be the most statistically significant explaining the growth of the firms analyzed. The results also indicate that the growth of the firm was not significantly related with its size, which is consistent with Gibrat's law.

Keywords: Firm growth, Small businesses, Firm development
JEL Classification: M10, M21

RESUMEN

Esta investigación examina los determinantes del crecimiento de una firma. Nuestros hallazgos indican que las firmas que desean crecer sustancialmente y los programas de gobierno que tienen como objetivo fomentar el crecimiento de las firmas, debieran concentrarse en la inversión de nueva tecnología, en la diversificación desde los mercados regionales hacia mercados nacionales e internacionales, y en la entrega de retornos adecuados, lo cual crea los medios financieros necesarios para crecer. Estos factores resultan ser estadísticamente significativos para explicar el crecimiento de las firmas analizadas. Estos resultados también indican que el crecimiento de las firmas no está estadísticamente relacionado con su tamaño, lo cual es consistente con la Ley de Gibraltar.

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The welfare of a society depends upon the economic growth of their industries and their people. Through the creation and expansion of firms the economy generates new employment and opportunities, making possible a more prosperous life for the people. Recognizing the importance of firms' growth, politicians, economists and international development agencies have devoted substantial resources to the creation and implementation of programs to assist firms' growth and thus foster economic prosperity. In order to ensure that these programs provide adequate results and, therefore, public and private resources are not wasted, it is important to design highly effective and efficient programs to improve firms' growth. Consequently, it is imperative to understand the process and the variables that grant or constrain firms' growth.

Great effort has been devoted to macroeconomic factors such as interest rates, economic stability and exchange rates; however, microeconomic factors have not received much attention. Even further, economic theory does not provide much help. Not many theoretical frameworks of firm formation and growth have been formulated and very few have been tested extensively (Davidsson *et al.*, 2002). The most recognized and empirically tested theory of firm growth is probably Gibrat's law that theorizes that the size of the firm at any given point in time is the product of a series of random growth rates in the history of the firm. In other words, the growth of a firm in any given period of time is independent of the size of the firm at the beginning of the period. A broader analysis of other factors affecting firms' growth empirically or theoretically has been less common. Even considering that several factors such as size and age of the firm, financial resources and technology level have been evaluated in previous studies, none of them has considered measures of financial resources and technology together. It is important to present a model that combines both factors since they have shown to play a role in the growth of the firm in previous studies that considered them independently. Additionally, most of the previous work found in the literature refers to determinants of firm growth in well developed countries such as the United States, Sweden, Germany, or the United Kingdom. Not much research has focused on the microeconomic and management factors affecting firm growth in emerging economies. This shortcoming is even more serious when it is considered that it is probably in emerging economies where economic growth is more needed to boost the

wellbeing of their population and reduce the differences with developed economies.

The objective of this paper is to analyze firms' growth in an emerging economy. Data comes from Tucumán, one of the provinces (states) in the north of Argentina. This analysis will expectedly bring some light into the area of firm growth in developing areas and help to fill the gaps described above providing empirical evidence of factors affecting growths and more specifically firm growth in emerging economies. Results from this research should also contribute by assisting firm managers to focus efforts on the most important factors determining firm growth as well as economists and politicians in the design and implementation of efficient policies to promote growth of firms in emerging economies.

The next section presents previous research and frameworks to analyze firms' growth and expansion as well as empirical results from several industries. Then, the second section presents a model developed by this research that tests several variables that are hypothesized as key factors that influence firms' successful performance in terms of expansion and growth. Several measures of technology and financial resources are presented in different models to test which one produces better results. The third section presents the econometric results of testing the model and, finally, the last section concludes.

I. THEORETICAL BACKGROUND

Growth is the result of exploring opportunities. Firms are a collection of a certain number of resources that provide the means to successfully take advantage of those opportunities and grow (Barney, 1986, 1991; Penrose, 1959). There is no limit to the growth of the firms; it is the rate of growth what is limited in the short run but there is no limit to the size of the firm (Penrose, 1959). The idea introduced by Penrose in 1959 that there is no limit for the size of the firm and unlimited growth is possible raised the question of the relationship between firm size and growth. A negative relationship between growth and size, that is, a lower rate of growth for larger firms than for small firms, would put in doubt the hypothesis of unlimited growth. If this were the case, the larger the firm would become, the smaller would be the rate of growth until it got to a point at which the large firm could not increase its size any more.

Several studies have undertaken the task of assessing the relationship between firm growth and firm size. Early studies in the manufacturing industry found a relationship between growth and size. This fact stimulated the idea that the relationship between growth and size is a stochastic phenomenon. This concept is known as Gibrat's law (Gibrat, 1931). According to Gibrat's law, the size of the firm at any given point in time is the product of a series of random growth rates in the history of the firm. The key assumption then is that the growth of a firm, in any given period of time, is independent of the firm's size at the beginning of the period.

Kumar (1985) and Chen, *et al.* (1985) in a study of agribusiness sector firms found no relationship between size and growth. More recently, Acs and Audretsch (1990) also found, in a study of the US manufacturing sector for the period 1976-1980 that Gibrat's law was valid. So did Wagner (1992) and Fulton, *et al.* (1995) in an empirical study of firm growth in the agribusiness sector. All these studies' results suggested that Gibrat's law holds, that is, the growth rate of a firm is independent of its size.

Contrary to the previously mentioned studies, Evans (1987a, 1987b) found that firm growth decreases with firm size in 89 out of 100 industries of the manufacturing sector analyzed. Also Hall (1987) found a negative relationship between size and growth for large firms in the US manufacturing sector for the period 1976 to 1983. More recently, Mata (1994) and Becchetti and Trovato (2002) have found the same negative relationship between growth and size, implying that smaller firms grow faster than larger firms. Dunne *et al.* (1989) also rejected Gibrat's law in a study of manufacturing industries in the US, although they did find a positive correlation with size.

Following most resent findings we first hypothesize that:

A.   *The size of the firm will negatively affect the growth of the firm*

In this research we intend to consider size as a determinant of the growth rate as well as additional variables such as technology level, financial resources, diversification or access to international markets and, therefore, control for the effect of size on growth and for the effect of other variables that could, theoretically, play an important role on firm growth, as will be discussed below.

Marris and Wood (1971) presented an introduction to theories of growth where they discussed different approaches and introduced a theoretical

framework to explain growth and diversification of the firm. Marris followed Penrose's proposition that in the growth process of a firm the final size is unlimited; it is the growth rate what is restrained in the short run by what he called dynamic constraints or restraints. For Penrose, these dynamic limits to growth were temporary scarcity of managerial resources, while Marris and Wood gave a higher weight to, first, financial resources constraints and, second, market demand constraints.

Financial means for expansion could be found through retained earnings, borrowing, and new issues of stock shares. Retained earnings are one of the most important sources to finance new projects in emerging economies where capital markets are not well developed. However, firms in the start-up period, when initial investments have not matured yet or whose investment projects are substantially larger than their current earnings, will not have enough financial means from retained earnings and will face a constraint in their growth project. Firms in this situation may seek external sources of financing; however, the extent of borrowing could be limited by internal factors like high debt-equity ratios that would expose both borrower and lender to increased risk. In other cases, financing of growth projects may be limited by shallow financial markets. Rajan and Zingales (1998) found that industrial sectors with a great need for external finance grow substantially less in countries without well developed financial markets.

Despite these important effects of financial constraints on firm growth, few studies have included measures of financial resources on empirical research of firm growth. Becchetti and Trovato (2002) tested the effect of two financial variables on growth. The first one was the leverage ratio of the firm and the second one was a qualitative dummy variable that defined whether the firm had a loan request rejected by a bank or not. While the effect of the leverage ratio was found not significant, the qualitative dummy variable proved to be an important restraint on growth.

Instead of availability of external sources of financing Chen *et al.* (1985) used profitability of the firm as a proxy of financial resources of the firm to boost growth. Profits play a dominant role in the capacity to access financial resources since it is simultaneously a source of internal financing and a hook to attract external sources of financing. Commercial banks, venture capitalists, investment banks, pension funds and other investors base their decisions on present and expected future values of profits or ratios of other financial variables on profits and usually consider firms with

high returns as a secure investment. In that way, a profitable firm should have more financial resources available to boost growth and sustain that growth over time.

Based on theory and previous findings, we hypothesize that:

B. *Constraints of financial resources will limit the growth of the firm*

Classical economics indicate that firm growth will occur as a consequence of changes in technology. Improved technology allows the firm to produce with a more efficient bundle of resources that reduces cost, and/or allows the creation of improved products or even completely new products. Such firm will be more likely to be in a position to surpass competition, reach new markets and expand. Variyan and Kraybill (1994), in a study of firms in Southern United States, found that the majority of managers of firms analyzed considered the use of technology as a critical element of their competitive advantages. Those firms, which placed more emphasis in the use of new technology, had higher growth rates than firms that did not view technology as a critical factor. Additionally, in a cross sectional analysis of industries, Birley and Westhead (1990) encountered evidence supporting the hypothesis that firms with newer technology in the major manufacturing lines were associated with higher levels of growth and performance. Therefore, we hypothesize that:

C. *The presence of technological capabilities will enhance the growth of the firm*

No firm can grow faster than the demand directed to its products. If the firm's main product demand is binding expansion, then the firm will have to search for new customers expanding into new products and/or into new geographic markets. Any firm that has attained a competitive advantage to produce a certain good or service can use that competitive advantage to expand into new markets (Porter, 1980).

Diversification into new products is not just an important vehicle of competition, but also the major engine to firm growth (Ansoff, 1965; Marris and Wood, 1971). Chen, *et al.* (1985) found that firm growth was constrained due to lack of product diversification and this was one of the

reasons why some firms performed poorly in terms of growth compared to firms that were more diversified.

Davidsson (1989) and Storey (1994) have argued that firm location may be important determining growth since the local market binds firms. However, location has not emerged as a significant variable in empirical works that have tested firm location (Popkin and Company, 1991; Almus and Nerlinger, 1999; Davidsson *et al.*, 2002). It is possible that in many cases the local market binds firm growth, but a firm does not necessarily restrain its sales to its local market. As long as firms can access modern channels of communication and logistics, they can expand into other geographic markets. Therefore, it is the diversification into alternative geographic markets, such as nation-wide and international markets, what will have an impact on growth instead of the firm's location. Location would be important only in those cases in which the firm only served the local market. Becchetti and Trovato (2002) brought some evidence of this when they found a positive correlation between firm growth and access to export markets.

Therefore,

D.a. Firms will grow faster, the more diversified by products they are, and

D.b Firms will grow faster, the more diversified by geographic market they are.

II. RESEARCH METHODS

A. Data

This study uses data on the small and medium-sized firms of Tucumán, Argentina. Tucumán State, with a population of 1.4 million, is the most populated and largest economy of the northwestern region of Argentina which also includes the states of Jujuy, Salta and Catamarca. This region of Argentina is extremely diverse in geography and climate. The eastern part is a fertile subtropical plain with about 1000 mm. water precipitation annually, while the western part is dominated by the mountain chains of the Andes. As the altitude increases, the climate of the different valleys becomes more temperate and dryer making it suitable for Mediterranean crops like

grapes and olives. Mining is also an important activity in this area.

The capital of Tucuman State, San Miguel del Tucumán, is also the largest populated city and the most important financial, commercial and transportation hub service center for the whole northwestern Argentina. The rural sector of the Tucumán State provided 12 per cent of the state's GDP while manufacturing and services accounted for 31 per cent and 57 per cent, respectively. The climate of the region is sub-tropical making Tucumán is the largest sugarcane producer in the country.

For most of the twentieth century, the economy was heavily dependent on sugarcane. However, by the 1970s sugarcane overproduction, sugar production overcapacity and the introduction of substitutes like corn fructose resulted in a severe economic crisis. During the 1980s the federal government implemented several economic development actions to increase investments in other sectors to reduce dependency on sugarcane and also the extreme volatility caused by the fluctuations in the price of sugar. Most of the policies adopted included tax exemptions and low interest government loans. By the beginning of the 1990s, economic activity was fairly diversified.

Some of the most important new activities developed were based on natural resources advantages instead of government subsidies. Citrus products, mainly lemon, and soybeans became other major rural economic activities. Tucumán became by the 1990s the most industrialized state in the northern region. Most of the industries were agribusiness related industries that transformed the diverse agricultural goods produced in the region, for example, sugar and citrus oils and concentrated juice, or industries that produced agricultural inputs like agricultural tools and machinery. Other well developed industries in the region are trucks, auto parts, textiles and paper. The latter developed under different schemes of government promotion.

By the beginning of the 1990s, the government had already closed most of its economic development projects; therefore, it was of particular interest to understand how the different industries continued to evolve and what were the drivers of growth during the 1990s now that they were on their own.

All the firms that represented 80 percent of the region's private sector value added were selected for the study because of their significant impact on the economic growth of the region. Part of the data was collected from personal and telephone interview surveys with managers that played a key role in the growth strategies of the firms, such us CEOs, CFOs, VPs of

Marketing and Sales and VPs of New Business Development. The survey was conducted in June of 1997, and was mailed to 87 firms, and several telephone interviews were conducted to firms that did not answer by mail. The survey asked about information on the last three years on growth, investment, financial capabilities, technology, and diversification by product and geographic market. Surveys that were incomplete were discarded. Usable responses were collected from 34 firms. The final sample included firms from the following industries: sugar processing, textiles, grain mills, food and beverages, dairy products, paper, meat processing, citrus processing, truck assembling and machinery manufacturing. This information was complemented with information from the National Economic Census of 1993-1994.

B. Dependent Variable

   Growth of the firm could be measured in terms of employment, assets or sales. The problem with employment is that this measure is biased against the capital-intensive firm. On the opposite end, assets discriminate against the labor-intensive firm and firms that have a significant level of outsourcing. Sales are the third measure of growth that has been used in research analysis. Sales have the advantage of being a good measure of the total volume of business of the firm. The measure of growth *(GROWTH)* used for this research study is the rate of growth of firm sales in the three-year period 1994-1996.

C. Independent Variables

   First, the effect of initial size was tested on firm growth. The hypothesis tested here −and in several previous researches− is if size, as a measure of the amount of resources of the firm, has any influence on the growth performance of firms. To be consistent with the growth measure chosen, initial size (*SIZE*) is measured as the amount of sales at the beginning of the period in 1994. If Gibrat's law holds, then the coefficient for size should be non-significant. Conversely, if Gibrat's law does not hold, as indicated by most recent findings, we will expect a negative and significant coefficient for the size variable.

Several other variables are added to test the hypothesis raised in the previous section. Financial resources are important in allowing investment in new equipment, development of new products and promotions in new geographic markets that will translate into higher rates of growth. As discussed in the previous section, profit could be a good proxy indicator for the financial resources of the firm. A more profitable firm can invest from retained earnings and has more potential to capture external sources of capital. More importantly, profits and retained earning are especially more important as a source of financing in emerging economies without well developed financial markets (Rajan and Zingales, 1998).

Profit in terms of return on sales was obtained from the National Economic Census of 1993 and 1994. Then the average return on sales for the two years previous to the growth period analyzed, 1992-93, (*ROS*) was included as an explanatory variable of growth rates in the period 1994-96. A positive and significant relation is expected for this variable.

Another measure of financial resources we used was a qualitative one. Managers were asked to respond whether the firm had good, intermediate or poor access to bank loans and sources of equity financing. Two dummy variables (*FINGOOD* and *FININ*) were constructed to see if firms with good and intermediate access to financials resources have a differential growth performance with respect to firms that have poor access to financial resources. A positive and significant relationship is expected for these two dummy variables (*FINGOOD* and *FININ*).

The use of newer technology allows firms to produce goods at a lower cost than firms that use older technology. The problem facing the test of this hypothesis is how to measure the technology level of the firm. Two measures were used in this study. First, an objective measure of the incorporation of new technology: the number of years since the last incorporation of equipment of new technology that was equal to or higher than 15 per cent of the firm's sales. The minimum amount of investment in terms of sales was imposed to ensure that the investment in technology was significant. The lower the number of years since the last investment in technology (*NEWTEC*), then the newer the technology the firm is using to produce and, therefore, the larger the expected impact on growth. A negative and significant coefficient is expected to indicate that the newer the technology, the larger the growth rate of the firm.

Other measures of technology employed were two dummy variables on

the technical level of the firm defined by the managers. Managers were asked to rank the technology level of the firm in a scale of three ranks: first, the best technology available in the industry; second, not the best but still good and comparable to the industry average; and third, poor technology and below the industry average. Two dummy variables were constructed (*TECLEV1* and *TECLEV2*) to test if there was any significant difference in the rate of growth compared with the firms with a poor level. *TECLEV1* and *TECLEV2* were expected to have a positive and significant coefficient.

Diversification into several products gives firms more opportunities to sell in diverse markets, attract a larger number of customers and reduce variability of sales. A larger demand directed to the firm and more stability would impact on larger rates of growth. To measure diversification by product, an index equal to proportion on sales of the most important product divided by the total number of products (*DIVPROD*) was constructed. A large index means that the firm is concentrated in one product. A smaller index means that the firm is diversified and sales depend on a larger number of products. A negative coefficient is expected to mean that the more diversified the firm in products, the larger the expected rate of growth.

Diversification of the firm not only means a larger number of products but also involves sales in a larger number of geographic markets as discussed in the previous section. A set of dummy variables was introduced to indicate the geographic bounds of the firms. A dummy variable *NAT* identifies firms that reach more than one region in the country and are considered national firms. A second dummy variable (*EXP*) identifies firm that also reach international markets through exports. The base indicates whether a firm is selling its products only in the regional market. A firm that is diversified in a larger number of geographic markets should attain larger levels of growth. Therefore, *EXP* and *NAT* coefficients are expected to be positive and significant.

Variable descriptions, average values and expected sign are described in Table I. Pearson correlation coefficients are describes in Table II.

TABLE I

MODEL VARIABLES DESCRIPTION

	Definition	Mean	Standard Deviation	Expected Coefficient Sign
Dependent Variable				
GROWTH	Growth rate 1994-1996	16.90 %	13.78 %	
Independent Variables				
SIZE	Beginning of period size	US$14.53	US$12.66	-
ROS	Beginning of period return on sales	0.045%	0.071%	+
FINGOOD	Good financial resources	0.29	Dummy	+
FININ	Intermediate financial resources	0.47	Dummy	+
NEWTEC	Years since last significant investment in new technology	6.94 years	5.84 years	-
TECLEV1	Technological level state of the art	0.32	Dummy	+
TECLEV2	Technological level good	0.47	Dummy	+
DIVPROD	Diversification by products	42.16 %	30.19 %	+
EXP	Sales in regional, national and international market	0.294	Dummy	+
NAT	Sales in regional and national market	0.382	Dummy	+

TABLE II
PEARSON CORRELATION COEFFICIENTS

Variable	Variable 1	Variable 2	Variable 3	Variable 4	Variable 5	Variable 6	Variable 7	Variable 8	Variable 9	Variable 10	Variable 11
1 GROWTH	1.000										
2 SIZE	0.054	1.000									
3 ROS	0.644	0.195	1.000								
4 FINGOOD	0.524	0.105	0.416	1.000							
5 FININ	0.055	0.231	0.211	- 0.479	1.000						
6 NEWTECH	- 0.561	- 0.364	- 0.392	- 0.343	- 0.299	1.000					
7 TECLEV1	0.406	- 0.013	0.307	0.342	0.080	- 0.534	1.000				
8 TECLEV2	- 0.346	0.061	- 0.285	- 0.308	- 0.022	0.358	- 0.936	1.000			
9 DIVPROD	- 0.396	0.015	- 0.252	- 0.259	- 0.144	0.575	- 0.530	0.419	1.000		
10 EXP	0.461	- 0.050	0.121	0.292	- 0.091	- 0.433	0.207	- 0.170	-0.447	1.000	
11 NAT	-0.171	0.398	-0.059	-0.109	0.107	0.019	- 0.052	0.103	0.243	- 0.242	1.000

D. Model

A model to test the hypothesis derived in the previous section from theory and previous research was developed where the dependent variable is the rate of growth of the firms in the period 1994-1996. Several explanatory variables were derived from the previous theoretical discussion and measures from the periods 1992-93 were included in the model to test how well they explained the rate of growth of analyzed firms.

We adopted a multivariate approach to estimate the coefficients of the explanatory variables. Four models were tested using different variables for financial resources and technology level and avoid muticolinearity among variables that measure the same firm characteristic. Heteroskedasticity robust estimates were obtained.

III. RESULTS AND DISCUSSION

Regression results from the four models tested are shown in Table III. The adjusted R^2 obtained for the different models are around 0.40 to 0.50 and the *F* values proved to be significant at the 1 percent level of significance. These results provide an adequate insight into the factors that influence growth in emerging economies.

The effect of size was not significant in any model. Therefore, we reject hypothesis 1. It is then possible to conclude that Gibrat's law holds, growth measured in terms of sales, in any given period of time, is independent of the initial size of the firm. According to the results of this research there are other factors more important than size of the firm to determine the opportunities for growth that firms face and the chances of successfully fulfilling those opportunities.

Return on sales in the two years previous to the period analyzed was positively and significantly related with growth performance. Therefore, we found support for hypothesis 2. According to the two models tested here, an increase of 1 percent in the return on sales will improve the rate of growth by 1 percent. Firms with a high return have larger financial funds available from retained earnings and also from external financing to fuel new projects, promote new markets, and invest in new technology and, therefore, may attain higher rates of growth.

TABLE III
THE OLS REGRESSION
Dependent Variable: Performance - $N = 34$

Variable	Parameter estimates and t-statistics			
	Model 1	**Model 2**	**Model 3**	**Model 4**
INTERCEPT	16.775	12.986	-0.118	-1.364
	(2.926)*	*(1.902)*	*(-0.021)*	*(-0.118)*
SIZE	-.0152	-0.156	0.027	0.060
	(-1.351)	*(-0.898)*	*(-0.220)*	*(-1.236)*
ROS	1.007		1.066	
	(6.002)*		*(5.252)**	
FINGOOD		15.706		17.161
		(3.340)*		*(5.747)**
FININ		7.860		9.970
		(1.708)**		*(6.827)**
NEWTEC	-0.747	-0.668		
	(-2.401)**	*(-1.675)****		
TECLEV1			11.375	5.527
			(2.910)*	*(1.755)****
TECLEV2			7.065	2.038
			(2.129)**	*(1.150)*
DIVPROD	0.020	0.024	0.010	0.0115
	(0.379)	*(0.371)*	*(0.198)*	*(0.972)*
EXP	8.004	6.514	10.398	8.731
	(1.915)**	*(1.546)****	*(2.537)***	*(1.921)****
NAT	-0.685	-1.176	-1.506	-1.605
	(-0.203)	*(-0.321)*	*(-0.406)*	*(1.250)*
Adjusted R^2	0.53	0.40	0.49	0.38
F- value	7.251	4.169	5.461	3.647

*   Significant at two-tail *t*-test, 1 percent level of significance.
**   Significant at two-tail *t*-test, 5 percent level of significance.
***   Significant at two-tail *t*-test, 10 percent level of significance.

When substituting return on sales as a proxy for financial resources in the model by the two dummies used to indicate the capacity to access external financing, the coefficients obtained for the dummies are positive and significant, confirming that financial resources are important factors determining firm growth and, therefore, providing additional support for hypothesis 2.

New technology measured as the number of years since the last investment in new technology that was equal or higher than 15 percent of sales proved to be an important factor explaining the rate of growth of firms since the coefficient corresponding to this variable was negative and significant. This result supports hypothesis 3. Then, the newer the technology employed, the higher the rate of growth obtained by the firm. New technology allows the firm to produce more efficiently, come to the market with better products and get more opportunities to grow.

Technology measured as a qualitative variable indicated by managers also proved to be a significant explanation for growth. Those firms with a technology level of one, that is, the best available in the industry, had a higher intercept than those firms with a technology level of two, and even better than firms with a technology level of three, which is the base intercept. Therefore, we support hypothesis 3.

Contrary to what was expected, diversification by product did not prove to be an important explanatory variable for firm growth. The coefficient for diversification by product was non-significant in all models. Diversified firms as well as specialized firms found good opportunities to grow. These results indicate that product diversification is not by itself a superior strategy for growth compared to specialization. The unique characteristics of the firm and the market would determine for each firm whether diversification or specialization is the best strategy to ensure growth for that firm. Therefore, there is no support for hypothesis 4a.

Finally, diversification by geographic market was important. Those firms having access to regional, national and international markets were the more successful in terms of growth. Firms with a national and regional market did not have a higher performance in terms of growth than regional firms. Therefore, there is support for hypothesis 4b.

IV. CONCLUSIONS

Although firm growth determinants have been subject of considerable research in developed economies, there is almost no evidence for emerging economies. This paper tries to throw light on this issue. Among all the variables derived from theory and previous research that were proposed in alternative empirical models in this research, namely financial resources, investment in newer technology and diversification by geographic markets proved to be the most important factors explaining firm growth.

Although we believe the present study provides reliable evidence about the determinants of growth of small and medium-sized enterprises in emerging economies, it has some limitations. First, the sample size is small. We acknowledge the difficulty of gathering information in countries like Argentina. The small size of the sample clearly limits the robustness of the results and requires caution at the moment of interpreting our conclusions. In spite of this problem, we are confident that at least the sample represents fairly well the population of small and medium-sized enterprises from Tucumán.

Another possible limitation has to do with causality, since the relationship between growth and sales or growth and returns can go in both directions. Because of the small size of the sample, we have worked with one- to three-year lags between dependent and independent variables, trying to partially cope with this problem. Finally, the fact that the sample is located in a particular province imposes limitations to the generality of the results.

Beyond the empirical limitations of the study, we should also acknowledge that country growth not only depends on firms' growth but also on the creation of new firms. That is, even though our study is intended to be a contribution for policy makers, we acknowledge that this is not the only aspect to be considered when trying to enhance development.

Having acknowledged these limitations, we are confident that this study provides unique results regarding the determinants of firms' growth in emerging economies. Future studies should focus on enhancing the sample size and including firms at the national level. We think that this type of studies have potential to contribute to both managers and policy makers.

REFERENCES

Acs, Z., D.B. and Audretsch (1990). Small Firms and Entrepreneurship: A Comparison between West and East Countries, Discussion Paper, MIT Press.

Almus, M. and E.A. Nerlinger (1999). Growth of New Technology-Based Firms: Which Factors Matter? *Small Business Economics* 13(2): 141-154.

Ansoff, H.I. (1965). Corporate Strategy, McGraw-Hill Book Company.

Barney, J.B. (1986). Strategic Factor Markets: Expectations, Luck and Business Strategy, *Management Science* 42: 1231-1241.

Barney, J.B. (1991). Firm Resources and Sustained Competitive Advantage, *Journal of Management* 17: 99-120.

Becchetti, L. and G. Trovato (2002). The Determinants of Growth for Small and Medium Sized Firms. The Role of the Availability of External Finance, *Small Business Economics* 19(4): 291-306.

Birley, S. and P. Westhead (1990). Growth and Performance Contrast between Types of small Firms. *Strategic Management Journal* 11: 535-557.

Chen, K., E.M. Babb and L.F. Schrader (1985). Growth of Large Cooperative and Proprietary Firms in the US Food Sector, *Agribusiness* 1:   201.

Davidsson, P. (1989). Continued Entrepreneurship and Small Firm Growth, Ph.D. Dissertation, Stockholm School of Economics.

Davidsson, P., B. Kirchhoff, J.A. Hatemi, and H. Gustavsson (2002). Empirical Analysis of Business Growth Factors Using Swedish Data, *Journal of Small Business Management*, 40(4): 332-349.

Dunne, T., M.J. Roberts, and L. Samuelson (1989). The Growth and Failure of US manufacturing Plants, *Quarterly Journal of Economics* 104(4).

Evans, D.S. (1987a). Test of Alternative Theories of Firm Growth, *Journal of Political Economy* 95(4): 657-674.

Evans, D.S. (1987b). The Relationship Between Firm Growth, Size and Age: Estimate for 100 Manufacturing Industries. *The Journal of Industrial Economics* 35: 567-581.

Fulton, M., J. Fulton; S. Clark, and C. Parliament (1995). Cooperative Growth: Is It Constrained? *Agribusiness* 11(3), 245-261.

Gibrat, (1931). Les Inégalités Econmiques, Librairie Du Recueil Sirey, Paris.

Hall, B. (1987). The Relationship between Firm Size and Firm Growth in the US Manufacturing Sector, *Journal of Industrial Economics* 35: 583-606.

Kumar, M.S. (1985)."Growth Acquisition Activity and Firm Size: Evidence from the United Kingdom, *Journal of Industrial Economics* 33(3): 327-338.

Marris, R., and A. Wood (1971). The Corporate Economy, Harvard University Press, Cambridge, Massachusetts.

Mata, J. (1994). "Firm Growth During Infancy," *Small Business Economy* 6(1): 27-40.

Penrose, E. (1959). The Theory of the Growth of the Firm. Oxford.

Popkin, J. and Company (1991). Business Survival Rate by Age Cohort of Business. Report Prepared for the US Small Business Administration, Office of Economic Research.

Porter, M. (1980). *Competitive Strategy: Techniques for Analyzing Industries and Competitors*, Free Press, New York.

Rajan, R. and L. Zingales (1998), Financial Dependence and Growth, *American Economic Review* 88: 559-586.

Storey, D. (1994). *Understanding the Small Business Sector*, Rutledge, New York.

Variyan, J. and D.S. Kraybill (1994), Managerial Inputs and the Growth of Rural Small Firms, *American Journal of Agricultural Economics* 76: 568-575.

Wagner, J. (1992). Firm Size, Firm Growth, and Persistence of Change: Testing Gibrat's Law with Establishment Data Firm Lower Saxony, 1978-1989, *Small Business Economics* 4(2): 125-131.

1 Strategic Planning and Small Firm Growth: An Empirical Examination Branka Skrt Boštjan Antončič Strategic thinking is important for small firms in the time of global competition, technological change and increased dynamics in markets. Even if many entrepreneurs do not formulate business plans, the strategic planning and systematic decision-making can be considered a key determinant of survival and success of small firms. The paper examines the relationship between strategic planning and small firm growth in terms of empirical analyses that include various strategic planning elements, which h Determinants of firm performance and growth during economic recession: The case of Central and Eastern European Countries. Vives Discussion Paper 43. Available at SSRN http://ssrn.com/abstract=2552420. Â The determinants of firm's growth: An empirical examination. Revista Abante, 10(1), 3–20.Google Scholar. Dragnic, D. (2014). Keywords: Firm growth, Small businesses, Firm development . American Journal of Agricultural Economics 76: 568-575. Wagner, J. (1992).Â Revista ABANTE, Vol. 10, Nº 1, pp. 3-20 (abril 2007). THE DETERMINANTS OF FIRM'S GROWTH: AN EMPIRICAL EXAMINATION FRANCISCO DIAZ HERMELO* ROBERTO VASSOLO** ABSTRACT This research examines the determinants of firms' growth. Our findings indicate that firms willing to grow substantially and government programs designed to boost firms' growth should put emphasis on investing in newer technology, diversifying from regional markets towards national and international markets, and delivering adequate returns, which provide the financial means to grow.