

Comparative Growth Factors of Small, Medium, and Large Formal Enterprises in Côte d'Ivoire

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Abstract: *This paper analyses the comparative explanatory factors of SMEs and large enterprises in the Ivory Coast. Using data from 361 companies in the World Bank Survey 2016, the study is based on a pre-selected panel of companies. The descriptive analysis shows an inverse relationship between the rate of growth of the enterprise and its size. In addition, the study reveals that, the financing problem, the political instability, the competition of the informal sector and the rate of taxation are the main obstacles to the growth of the enterprise. Regardless of the size considered, the financing problem and political instability prove to be the main barriers to business growth. Based on an econometric analysis using a fixed-effects panel, transversally, the decline in employment and the costs incurred to ensure security hinder the growth of companies while the size of the enterprise and the fact that the manager is a woman are levers of this growth. In a dynamic approach, the size and costs of safety are brakes while the connection to electricity boosts the growth of companies. As a result, there is a need for major investments in security and the maintenance of stability.*

Keywords: Factors, Growth, SMEs, Panel, Enterprises, Côte d'Ivoire

Introduction

Business is central to growth strategies and the fight against poverty, through job and wealth creation. While large companies are the main source of employment in the formal private sector, the contribution of SMEs to total employment has increased in recent years. According to the ILO (International Labour Organization), in 2017, the number of employees in formal sector SMEs almost doubled in the 132 countries for which data are available, and the share of SMEs in total employment increased from 31% to 35%. This contribution is 52% in developing economies, compared to 34% in emerging economies and 41% in developed economies.

SMEs remain the “backbone” of the global economy, accounting for the vast majority of registered businesses. Approximately 90% of the world’s businesses are SMEs (or about 400 million entities), and they are projected to generate between 60% and 70% of total global employment by 2025 (World Economic Forum SME Resource Hub, 2025). As for their contribution to GDP, it is estimated to range from 50% to 70% of global GDP depending on the region, with advanced OECD economies posting an average value added of 50–60% (OECD Platform on Financing SMEs for Sustainability, 2025).

In Africa, the role of SMEs is even more crucial for absorbing the young workforce. In fact, SMEs generate approximately 80% of jobs on the continent, and their average contribution to African GDP ranges between 30% and 40%, with a strong trend toward formalization expected by 2026 thanks to the African Continental Free Trade Area (AfCFTA), according to the African Development Bank (2025) in Outlook 2025–2026.

For Côte d'Ivoire, the figures reflect the objectives of the National Development Plan (PND 2021–2025) and projections for 2026. With 98% of private-sector businesses being SMEs, the country records an SME contribution to GDP ranging from 20% to 25% and holds more than 35% of the market share. In terms of job creation, the share of new jobs created in 2024/2025 is estimated at 48% by SMEs (AfDB, 2025).

The gap observed between the situation of SMEs in Côte d'Ivoire and that of SMEs in advanced countries illustrates the need for further research to meet the demands of an emerging economy. This country aims to achieve economic emergence through the structural transformation of its economy by increasing the role of the private sector, specifically through a network of competitive SMEs that drive innovation, value-added creation, and job creation for young people and women.

Driven by this ambition, the Ivorian government has successively adopted two (02) National Development Plans (the NDPs for 2012–2015, 2016–2020, and 2026–2030), the goal of which is to accelerate the structural transformation of the Ivorian economy. Recognizing the crucial role that SMEs must play in the success of the NDP, the government adopted a national SME development strategy in 2015 known as the “Phoenix Program.” In addition, the creation of the One-Stop Shop for Business Formalities (GUFE), the tax exemptions contained in the new 2012 Investment Code, and the establishment of the Commercial Court in July 2012 are all initiatives designed to promote SME growth and the creation of formal jobs (Traoré, 2016).

Despite all these initiatives, labor market institutions, organizational models, access to trade and supply chains, market size, and financing opportunities pose persistent structural challenges that hinder the growth of SMEs. It is this slow business growth that may partly explain the prevalence of informal employment. Informality remains the dominant feature of the Ivorian labor market, although formalization policies, such as the entrepreneur status, are

attempting to reduce its share. The share of informal employment (2025/2026) is estimated at 93.6% of the total labor force (Ministry of Economy and Finance / DGE, 2025). It reaches 96.3% among women compared to 91.8% among men.

Furthermore, Côte d'Ivoire is seeing massive business creation (quantity), but business mortality remains high (quality/resilience). Regarding the business creation rate in 2025, Côte d'Ivoire set a record with 26,948 new businesses created (a 6% increase compared to 2024). This trend demonstrates a commitment to formalization, even though the stock of informal businesses remains massive (CEPICI Annual Report, 2026). However, the five-year mortality rate for newly created businesses is approximately 37%–40% according to consolidated data from the PND (2021–2025). Although this survival rate is roughly equal to the WAEMU average (40%), it remains high given the country's short- and medium-term ambitions for economic emergence.

This is why the present study seeks to identify the obstacles to the growth of SMEs and micro-enterprises/SMEs. More specifically, the aim is to identify the barriers to SME growth under the assumptions that (i) financing and taxation issues are the main constraints in the business environment hindering their growth, and (ii) the age and size of the firm are the characteristics that affect its growth. This study distinguishes itself by establishing a panel of firms to compare these factors based on firm type.

Following the introduction, the remainder of the article is organized as follows. Section 2 presents a literature review. Section 3 explains the data and provides a descriptive analysis of firm growth. Section 3 details the analysis of firm growth. Section 4 presents an analysis of the robustness of the main results.

Review of the Literature on Firm Growth

Overview of Firm Growth Theories

The law of proportional effects is the first theory of firm growth. It was formulated in 1931 based on an analysis of the distribution of French industrial firms by size. It considers that firm growth depends essentially on random shocks, without being determined by size or any other specific factor. Despite being challenged by various econometric analyses, it continues to be the subject of numerous analyses.

These econometric investigations highlight a large number of determinants of this growth linked to the specific characteristics of firms, their strategic decisions, or their production environment. Moreover, from a more empirical perspective, this theory also appears to be contradicted by the practice of risk rating and the processing of business survey data. Generally, the most important explanatory factors are the company's past trajectory, particularly the existence of prior payment defaults (Montalieu, 2002), the company's size, legal form, and sector of activity (Blazquez et al., 2006).

Furthermore, the Upper Echelons Theory, developed by Hambrick and Mason in 1984 (Boutbirt, et al. 2024), is one of the theories that has highlighted the impact of management team characteristics on company growth. This theory stipulates that managers act based on their own interpretations of the situations facing the company. These interpretations are a function of the management team's experiences, values, personalities, and tasks performed.

Recent studies conducted on French companies somewhat reconcile the two perspectives (Bacheré, 2017). In fact, job creation does indeed decrease with firm size, in the sense of

equal units, but at the same time, this creation relies essentially on a segment of dynamic small businesses that have come under the control of medium-sized groups.

Economic analyses based on firm size have really taken off since the 1970s, as Julien (2008) observes, noting the exponential growth in the number of publications devoted to this field. This growth was sparked by a renewed interest in small businesses following the reversal of the historical trend of their decline.

Some economists, however, have developed divergent views, driven by the desire to understand the reasons for the persistence of a considerable number of growing small businesses despite their competitive disadvantages.

The theoretical explanations offered are multifaceted. The first explanation is linked to the characteristics of certain small markets, relying on local services and "tailor-made" offerings that are inappropriate for the production methods of large companies (Degeorge et al. 2015). The second relates to the identification of optimal average sizes in certain sectors, due to the U-shape of the long-run average cost curve of companies (Viner, 1932, Kaldor, 1934). The third, inherent to the Schumpeterian thesis, relates to the greater willingness of small companies to innovate. Added to these factors is the use of network-based organizational forms that make it possible to offset lower internal returns to scale with external economies of scale (Savoye, 2022). However, despite their greater efficiency, Schumpeter suggests that activities requiring significant R&D efforts are primarily the domain of large companies, as small businesses face numerous obstacles that deter them from engaging in or continuing research and innovation. These constraints include difficulties recruiting or retaining staff, a lack of resources to exploit new products once they are designed, and compromised firm survival in the event of failure (Cooper, 1966).

Regarding financing, the theory of hierarchical financing developed by Myers and Majluf (1984) posits that managers adopt a financial policy aimed at minimizing the costs associated with information asymmetry and that they prefer internal financing to external financing. Consequently, external financing is perceived as a hindrance to the growth of SMEs and reduces job creation efforts, so larger firms tend to opt for this type of financing. This would explain the gap between them and small businesses in terms of job creation. However, the theory of information asymmetry considers that managers of established SMEs, who are highly involved in their business, have more knowledge about the company's health and growth prospects and can take advantage of this information asymmetry to the detriment of external partners to boost their business.

However, within the logic of economic rationality, the decision to grow a business can, in certain measures, be a cost-benefit analysis. Indeed, according to the "legalist" school of thought, particularly popularized by De Soto (1989), the costs of formalization constitute an obstacle to both the formalization and the growth of microenterprises because entrepreneurs try to avoid the costs and responsibilities of formal registration. Moreover, Tybout (2000) describes how small businesses are encouraged to remain small and informal to avoid taxes. On the other hand, medium-sized firms have an incentive to grow in order to become large enough. In any case, it is important in the following section to review the determinants of firm growth, without claiming to provide an exhaustive analysis.

Empirical Investigations of SME Growth

SME growth analyses view human capital, innovation, partnerships, information, and market expansion through the organization as important factors that can boost SME growth.

Advocates of human capital recognize that the company is inseparable from its leader. Like LeCornu, McMahon, and Forsaith (1996), a company's growth cannot be achieved without its leader. For them, the company is commonly considered an extension of their personality. Therefore, it is essential to consider the influence of the leader's human capital and their personal objectives on their company's growth strategy. Thus, the company's strategic choices, its growth, and its various levels of profitability are a reflection of its top management (Mountassif et al., 2019).

Along these lines, Hambrick and Mason (1984) note that younger owner-managers are more likely to pursue a growth strategy than older ones, as age is generally associated with more conservative behavior. An older manager is generally less inclined to adopt innovative behavior or embrace a new idea, being more attached to a certain organizational status quo. Moreover, young firms have a greater propensity to grow significantly than older firms, or at least to adopt different growth trajectories (Mustar, 2001). St-Pierre and Mathieu (2005) show that managers with a technical background are more often at the helm of manufacturing firms that display the highest rates of growth and innovation, a finding confirmed by Lasch et al. (2005) in a sample of new high-tech firms.

Furthermore, Cooper et al. (1994) show that the gender of the entrepreneur has a negative impact on the growth of small businesses. In this regard, a study conducted by Dahlqvist et al. (1999) on newly established firms in Sweden observed a negative link between female entrepreneurs and growth. Similarly, Boukar (2009) shows that in Cameroon, male managers have a positive impact on business growth.

Furthermore, some approaches have identified innovation as a driver of growth. According to these approaches, the growth of SMEs is closely linked to their ability to innovate. This is supported by Mustar (2001), showing that the growth of small and medium-sized enterprises, like innovation, is a collective phenomenon that cannot be achieved without an appropriate environment. Several studies show that innovation stimulates growth through the possession of a product or a distinctive advantage (St-Pierre and Mathieu, 2005; Julien, 2001). Along the same lines, Roper (1999) found that sales growth for small firms that have introduced a new or modified product to the market is much faster than that of non-innovative firms. Other studies observe that R&D intensity is positively associated with growth (St-Pierre and Mathieu, 2003; Koné et al., 2024).

Others have focused on demonstrating the role of partnerships in the business growth process. For Julien (2000), developing partnerships with educational institutions and research centers stimulates growth. This growth will be all the stronger if this partnership is formalized in the form of alliances, joint ventures, or research consortia. External advisors can also help firms solve various problems (OECD, 2002), compensate for certain managerial deficiencies, or address informational deficiencies. Several studies have found that SMEs using external public advisors grow faster than companies that do not use these organizations (Julien, 2001; Godom, 2024). According to the OECD (2002), the most important partnership is that formed by high-growth companies with their customers, and to a lesser extent that with suppliers. Mustar (2001) observes that, among high-growth French companies, 80% claim to have developed partnerships with their customers.

Regarding financial resources, the vast majority of research supports the positive impact of financial resources on firm survival, growth, and sustainability (Dahlqvist et al., 2001; Lasch et al., 2005). Firms need to integrate certain information into their flexible strategies to be able to adjust quickly and conclude winning market transactions. In this sense, establishing a

network of relationships with other firms is also likely to stimulate growth (Donckels and Lambrechts, 1995). These studies show that firms with a strong market orientation and regular communication with their customers are more likely to grow (Julien, 2000).

Regarding market openness, some authors argue that to be successful in exporting, firms must have a well-developed organizational structure to meet the demands of importers and customers (Ngobo and Ramaroson, 2005). Statistically, several studies show that exporting SMEs are more innovation-oriented, placing greater importance on the continuous development of new products and the improvement of existing production methods. This is made possible, among other things, by significant investments in R&D (St-Pierre, 2005) and sustained competitive and technological intelligence activities.

The impact of company location on growth has been studied, particularly through factors related to local demand and agglomeration effects generated by concentrations of activity, in the wake of the new geographical economy (Levratto and Garsaa, 2016).

Regarding the life cycle, Greiner's (1972) growth model is one of the most cited. He presents a five-phase model (to which he added a sixth phase) in which the variable "x" represents time and the variable "y" represents the size of the organization. According to Greiner, organizations grow over time, and each phase is defined by a crisis. Successfully emerging from this crisis allows the organization to move on to the next phase of growth, and this growth is synonymous with job creation. It is the gains from resolving the crisis that will enable the organization to grow. The model includes six (6) phases of growth: growth through creativity, growth through direction, growth through delegation, growth through coordination, growth through collaboration, and finally, growth through alliances.

Regarding the sector of activity, Andersson and Noseleit (2011) indicate that the sector in which startups operate is important, and that the positive effect of startups on job change is evident within the same sector in which they operate. The effect on employment is either positive or negative when cross-sector comparisons are taken into account. Furthermore, it appears that high-tech and service start-ups have a negative impact on employment in other sectors (Thévenard-Puthod, 2015; Andersson and Noseleit, 2011, Lasch et al, 2005).

Methodology

Data Source

The data used in this study come from surveys of Ivorian businesses collected as part of the RPED 2016 program. This survey, conducted in Côte d'Ivoire between July 2016 and February 2017 as part of the Enterprise Surveys (ES) project, is a World Bank initiative. Its objective is to obtain feedback from businesses on the state of the private sector and to contribute to the creation of a panel of business data to monitor changes in the business environment over time. This allows, for example, for impact assessments of reforms.

Through interviews with businesses in the manufacturing and services sectors, the survey assesses constraints to private sector growth and creates statistically significant indicators of the business environment that are comparable across countries. Only registered businesses are surveyed in the Enterprise Survey. Data from 361 firms were analyzed, including 268 in Abidjan and 98 in other cities; 120 firms were from the manufacturing sector, 114 from the trade sector, and 127 from the service sector.

Three levels of stratification were used in this country: industry, establishment size, and

region. The stratification by industry was designed as follows: the universe was stratified into manufacturing industries (ISIC Rev. 3.1 codes 15 to 37), retail industries (ISIC code 52), and other service industries (ISIC codes 45, 50-51, 55, 60-64, and 72).

For Côte d'Ivoire's ES, size stratification was defined as follows: small (5 to 19 employees), medium (20 to 99 employees), and large (100 or more employees). Finally, regional stratification was performed across two regions: Abidjan and the rest of the country, including Bas-Sassandra, Sassandra-Marahoué, Gôh-Djiboua, Lagunes, and Yamoussoukro.

The sampling list consisted of lists of firms from two sources: for the panel firms, the list of 526 firms from the 2009 ES of Côte d'Ivoire was used, and for new firms (i.e., firms not covered in 2009), lists obtained from the Central des Bilans database, INS 2012, were used.

Given the impact that ineligible units included in the sample universe can have on the results, adjustments were necessary when calculating the appropriate weights for individual observations. The percentage of confirmed ineligible units out of the total number of sampled establishments contacted for the survey was 0.4% (3 out of 849 establishments).

Data were collected through face-to-face interviews. Standard Enterprise Survey topics include enterprise characteristics, women's participation, access to finance, annual sales, input and labor costs, workforce composition, corruption, licenses, infrastructure, trade, crime, competition, capacity utilization, land and permits, taxation, informality, business-government relations, innovation and technology, and performance measures. Over 90% of the questions objectively assess the characteristics of a country's business environment. The remaining questions assess survey respondents' opinions on obstacles to business growth and performance. The most recent full fiscal year is January to December 2015. For questions regarding monetary amounts, the unit is the West African CFA franc.

Empirical Model

The empirical model follows Evans (1987), in which the annualised growth rate of a firm depends on its size and age:

$$[\ln S_i(t') - \ln S_i(t)]/\mu = \ln G(A_i(t), S_i(t)) + u_i(t) \quad (1)$$

where S denotes firm size measured by the number of employees, G the growth function, A firm age, t and t' ($t' > t$) the initial and final dates, $\mu = t' - t$ the length of the growth window in years, and u_i an error term, normally distributed with zero mean and independent of A_i and S_i . In its first-order log-linear form, the growth function is written:

$$\ln G(A_i, S_i) = \gamma_0 + \gamma_1 \ln S_i + \gamma_2 A_i \quad (2)$$

The dependent variable (CROISEMP) is the annualized log growth rate of permanent employment, $g_i = [\ln S_i(t') - \ln S_i(t)]/\mu$. For the cross-section of all firms, growth is measured between 2013 and 2015 ($\mu = 2$), as in the descriptive analysis; for the panel firms, it is measured between 2009 and 2015 ($\mu = 6$).

The estimated specification does not include quadratic terms in size or age. Possible nonlinearity in size is instead captured by size-class dummies, Medium (20 to 99 employees) and Large (100 employees or more), with Small firms (5 to 19 employees) as the reference category, combined with the log of employment. These terms, together with firm characteristics, business-environment variables and infrastructure variables, are added to Equation (2), which gives the model estimated on all firms

$$g_i = \alpha + \beta_1 \ln \text{Emp}_i + \beta_2 \text{Medium}_i + \beta_3 \text{Large}_i + \beta_4 \text{Age}_i + \beta_5 \overline{\text{Fin}}_{s(i),r(i)} + \beta_6 \overline{\text{Corr}}_{s(i),r(i)} + \beta_7 \text{Sec}_i + \beta_8 \text{Elec}_i + \beta_9 \text{Gender}_i + \delta_{s(i)} + \lambda_{r(i)} + \varepsilon_i \quad (3)$$

where i indexes firms; $s(i)$ and $r(i)$ denote the two-digit industry and the region of firm i ; $\ln \text{Emp}_i$ is the log of permanent employment; Age_i is firm age in years; $\overline{\text{Fin}}_{s(i),r(i)}$ and $\overline{\text{Corr}}_{s(i),r(i)}$ are the industry–region averages of the firm-level responses on access to financing (Accred) and corruption (Corrup) as obstacles, which mitigates the endogeneity of firm-level perceptions; Sec_i (PAI) and Elec_i (RACORD) are binary indicators for paying for security and for connection to the electricity grid; Gender_i is the gender variable described in Table 1; $\delta_{s(i)}$ and $\lambda_{r(i)}$ are industry and region fixed effects; and ε_i is the error term. Political instability (Instapo) is analysed in the descriptive section and is not among the regressors reported in Table 4.

Equation (3) is estimated by ordinary least squares with industry and region dummies. Standard errors are robust and clustered by region and two-digit industry, the level at which the business-environment variables vary. The coefficients on Medium and Large measure the difference in annual log growth relative to Small firms, all else equal.

As a robustness check, the model is re-estimated on the panel of firms that were also surveyed in 2009. The explanatory variables are taken at their 2009 values, so that they precede the growth window, and the dependent variable is the annualised growth rate between 2009 and 2015:

$$g_i^P = \alpha^P + X'_{i,2009} \beta^P + \delta_{s(i)} + \lambda_{r(i)} + \varepsilon_i^P \quad (4)$$

where $X'_{i,2009}$ stacks the nine explanatory variables of Equation (3) measured in 2009 and the superscript P denotes the parameters of the panel model. The same industry and region fixed effects are included, and standard errors are clustered at the two-digit industry level.

The theoretical model is based on the idea that firm size and age influence the growth rate. Small firms generally grow faster than large ones, and young firms tend to grow faster than older ones, consistent with Jovanovic (1982) and Evans (1987). The key hypotheses are formulated in terms of the parameters of Equation (3):

H1 (size). Firms grow faster when they are small: $\beta_1 < 0$, and, relative to Small firms, $\beta_2 \leq 0$ and $\beta_3 \leq 0$.

H2 (age). Firms grow faster when they are young: $\beta_4 < 0$.

H3 (constraints). Firms facing financial and regulatory constraints experience slower growth, particularly small and medium-sized firms: $\beta_5 < 0$ and $\beta_6 < 0$.

The model also controls for security costs and access to electricity, expected to reduce and to raise growth respectively ($\beta_7 < 0$ and $\beta_8 > 0$). No sign is imposed on β_9 , since the literature reports conflicting effects of the manager's gender (Cooper et al., 1994; Dahlgvist et al., 1999; Boukar, 2009).

Presentation of Variables

Table 1: List and Description of Variables

Variables	Definitions	Variable Type
Variable de results		
CROISEMP	Log of Employment Growth Rate (Number of Employees) Continuous	Continuous
Firm Characteristics		
Age	age of entreprise	Continuous
Employment 2015	Emploi permanent en 2015	Continuous
Gender	Number of women in the entreprise	Continuous
Size	Size of entreprise	Polytomous
Business Environment		
Instapo	Political instability as a major obstacle to business	
Accred	Access to credit	
Corrup	Corruption	
Infrastructure and services		
RACORD	Binary Grid Connection	Binary Grid Connection
PAI	Paid for Binary Security	Paid for Binary Security

Source: Authors, World Bank data from Banque « enterprises survey 2016 »

Results

Characteristics of Growing Firms

The distribution of firms by size, taking into account their lifespan, shows that considering all firms, the table below shows that small firms dominate the "Less than 5 years" and "5 to 10 years" categories, while large firms predominate in the "15 years and over" category. When we limit ourselves to the panel, we see a significant increase in the share of small firms in the "5 to 10 years" category. Large firms have a more pronounced presence in the "15 years and over" category, especially in the panel.

Table 2: Distribution of firms by size

	Less than 5 years	5 to 10	10 to 15	15 years plus
Small	10.63	52.5	25.62	11.25
Medium	6.45	46.77	33.87	12.9
Large	9.43	22.64	20.75	47.17
	Panel only			
	Less than 5ans	5 à 10	10 à 15	15 years plus
Petite	4.11	61.64	24.66	9.59

Medium	6.25	56.25	29.17	8.33
Large	0	33.33	44.44	22.22

Source: Author based on World Bank data “enterprise survey 2016”»

At the small firm level, the predominance of small firms in the "Less than 5 years" and "5 to 10 years" categories may be the result of a dynamic entrepreneurial environment, with an increasing number of new businesses emerging and starting operations. The significant increase in the share of small firms in the "5 to 10 years" category in the specific panel perhaps suggests a positive trend in growth and survival for these firms over time. They may have benefited from panel resources or specific development programs. The concentration of small firms in the panel may indicate specific efforts to support and develop these firms over the years, thus contributing to an increase in their share in the "5 to 10 years" category.

At the large firm level, the greater presence of large firms in the "15 years and over" category, especially in the panel, may reflect greater stability and resilience of large firms over time. They have likely overcome challenges related to longevity and consolidated their market position. These observations suggest interesting variations in the distribution of firm size by length of existence, with notable differences between all firms and the specific sample.

A breakdown of firms by region and length of existence (see Appendix) indicates that in Abidjan, most firms are between 5 and 10 years old, while in the rest of the country, there is greater variability in firm length, with a notable proportion of firms between 5 and 10 years old.

At the 2-digit industry level (Appendix Table), the analysis of the proportions of firms of different sizes in various sectors in Côte d'Ivoire reveals significant trends and specific implications. Let's take a closer look at each sector to better understand the observed dynamics.

In the food sector, the marked predominance of small firms (43.33%) suggests a direct response to local demand. The nature of the food sector favors the creation of small local businesses. Measures such as small business support policies, entrepreneurial training, and easier access to financing can further strengthen this crucial sector.

Turning to the Clothing sector, the high proportion of small-sized businesses (64.29%) highlights the likely predominance of artisanal or local enterprises. In Côte d'Ivoire, artisanal activities in the garment industry are widespread, requiring encouragement of artisanal initiatives, technical training programs, and facilitation of market access.

Base Metals is characterized by a balanced proportion, with a dominance of medium-sized businesses (50%), reflecting relative stability. The nature of base metals-related activities often requires a solid infrastructure, justifying the need to encourage strategic partnerships, innovation, and infrastructure investments.

The Motor Vehicle Services sector is characterized by a balanced proportion of small, medium-sized, and large businesses, due to the inherent diversity of this sector. Supporting the diversification of services, facilitating access to emerging technologies, and promoting specialized training can strengthen this sector's competitiveness. Finally, the Retail sector stands out for its overwhelming dominance of small businesses (57.55%), highlighting the effective response of small retailers to local demand. To further stimulate this sector, efforts to encourage e-commerce initiatives and provide training in supply chain management are

essential.

Using the size and age groups described above, we calculate firm growth rates as the annual increase in full-time employment between 2013 and 2015. Table 3 presents firm growth rates in Côte d'Ivoire, by size and age.

Table 3: Growth rates of companies according to their size and age

	All Entreprises			
	Less than 5 years	5 to 10 years	10 to 15 years	15 years and plus
Small	0.05	0.03	0	0
Medium	0.1	0.03	0.03	0.02
Large	0.09	0.01	-0.01	0.01
	Panel only			
	Less than 5 years	5 to 10 years	10 to 15 years	15 years and plus
Small	0	0.03	0	0.04
Medium	0.09	0.03	0.1	0.04
Large	-	0.04	0.02	0

Source: Author based on World Bank data “enterprise survey 2016”»

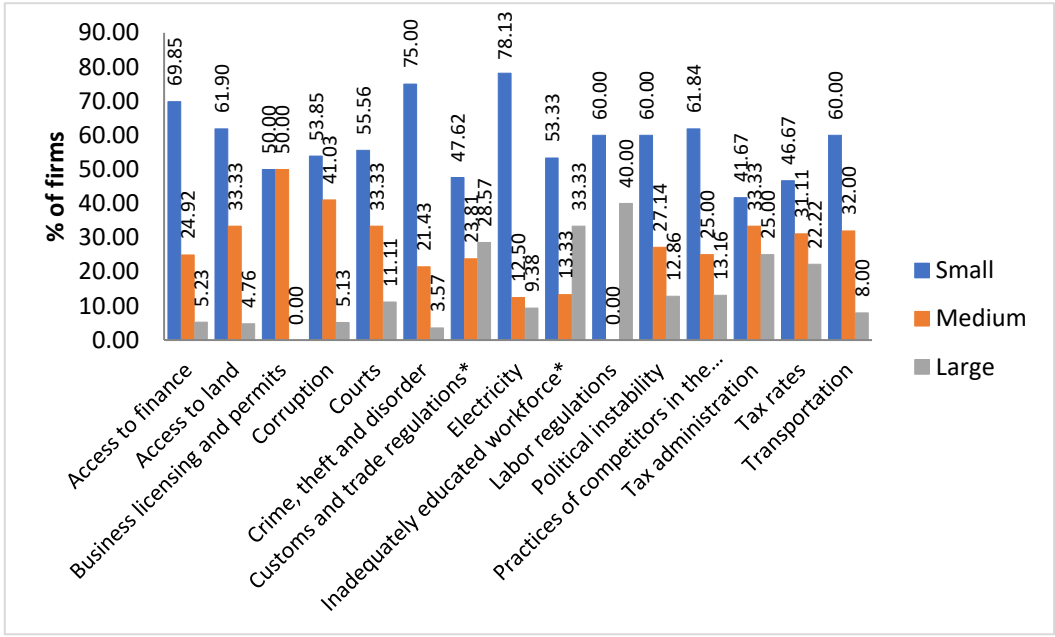
According to the results shown in the table above, small and medium-sized enterprises as a whole show positive, albeit modest, growth rates across all age categories, while large enterprises also show a positive trend, albeit slightly less pronounced.

Considering all firms and the panel, the table first shows that for small firms less than 5 years old, the growth rate is zero overall, but becomes positive for those in the panel. This could indicate favorable dynamics for young small firms within the panel.

Second, medium-sized enterprises show higher growth rates in the panel than for all firms, particularly in the "10 to 15 years" and "15 years and older" categories. This suggests positive dynamics for medium-sized firms in the panel. Finally, for large firms, the growth rate is zero in the "Less than 5 years" category of the panel. This may be due to missing data.

At the age category trend level (controlling for age), the results indicate that small firms less than 5 years old show stability for all firms, but positive growth in the panel. This may be explained by an improvement in conditions or opportunities for young firms. Also, medium-sized firms appear to experience more sustained growth, especially those 10 to 15 years old and 15 years and older, suggesting resilience and expansion over time. Large firms show general stability, with minor variations in the growth rate by age category.

Graph 1: Most serious investment climate barriers, by firm size



Source: Author based on World Bank data “enterprise survey 2016”»

The graph above highlights the main obstacles to the investment climate based on company size. Small businesses are particularly affected by a lack of financing (69.85%), electricity (75%), and competition from the informal sector (78.13%). Medium-sized businesses are more affected by tax constraints (38.33%), corruption (41.03%), and legal difficulties (33.33%). For large businesses, the main obstacles concern insecurity (55.56%), customs regulations (47.62%), and insufficiently qualified labor (43.28%). Thus, each category of business faces specific challenges requiring tailored responses to improve the business climate. This highlights the need to improve education and workforce skills, particularly for small businesses. Political instability is mentioned by 62 establishments, representing a major concern for nearly half of the respondents. This concern is relatively evenly distributed across different company sizes.

In summary, access to financing, corruption, and political instability emerge as major obstacles, while other factors such as workforce education and labor regulations are also cited. These data underscore the importance of taking steps to improve these aspects in order to foster a more favorable business environment.

Table 4: Results of econometric estimations

	All	Panel
VARIABLES	CROISEMP	CROISEMPL
Access to financing	-0.003	0.025
	-0.025	-0.043
Corruption	0.051	0.058

	-0.041	-0.074
Medium	0.062***	0.066
	-0.023	-0.042
Large	0.147***	0.237**
	(0.044)	-0.101
Employment in 2015	-0.070***	-0.108***
	-0.012	-0.024
Age of the company	0	0.000
	0	0
Paid for security	-0.061***	-0.084**
	-0.021	-0.04
Connection to the electricity network	0.009	0.162***
	-0.014	-0.058
Gender	0.050*	0.076
	-0.029	-0.058
Constant	0.235**	0.003
	-0.113	-0.188
Observations	309	115
R-carré	0.114	0.223

Note: Robust standard errors given in parentheses are clustered by region and two-digit industry for all data and by two-digit industry for panel data. We also control for two-digit industry and region fixed effects. *** p<0.01, ** p<0.05, * p<0.1.

Source: Author using World Bank Enterprise Survey 2016 data.

Examining the Determinants of Firm Growth

Model Robustness

Although averaging the firm-level business climate variable values across the industry and region mitigates the endogeneity problem, it may not completely eliminate it. We perform the same regression analysis specified by the firms in the equation by restricting the sample to panel firms. In the panel regressions, we use the values of firm characteristics and business climate variables from the 2009 survey and analyze how these factors are related to firm growth between 2009 and 2015. Here, we cluster the standard error at the two-digit industry level.

Analysis of Econometric Estimation Results

The regression results presented in the table above highlight several crucial findings regarding the variables specified in the overall and panel models. The study reveals that financing problems and firm age have a non-significant negative effect on firm growth in Côte d'Ivoire.

Regarding firm size, being a medium-sized firm has a significant and positive impact on firm

growth overall, compared to being a small firm. This result can be explained by the fact that employee compensation, capital intensity, and the effort to reverse the process increase with size. The same is true for the propensity to innovate (Savoie, 1993). However, this effect is significant and negative in the panel for large firms. This would predict growth for medium-sized firms up to a certain threshold, beyond which size would have a negative effect on firm growth, certainly due to management costs becoming significant, in accordance with the theory of diminishing returns to scale.

The decline in employment in 2015 also had a significant and negative impact on the growth rate for all firms due to the decline in apparent labor productivity, highlighting the long-term consequences of this workforce reduction on firm growth. Furthermore, firms investing in security exhibit a significant and negative impact on firm growth in both models, with an even more pronounced effect in the panel model due to the significant costs incurred by these firms. This finding underscores the importance of security-related expenditures as a determining factor in growth.

Connection to the electricity grid also remains a significant determinant of growth in the panel model. This result indicates that managers' access to basic infrastructure such as electricity strengthens firm growth. Finally, with regard to gender, although the overall model indicates a significant and positive impact, having a female manager actually promotes firm growth compared to a male manager. This suggests that female gender has a significant and positive influence on the panel companies in an aggregate model. This result is contrary to that of some previous studies. As evidence, a study conducted by Dahlgvist et al. (1999) on a newly founded firm in Sweden demonstrates a negative link between female entrepreneurs and their company's growth. Similarly, Bouka (2009) shows that in Cameroon, male managers have a positive impact on company growth. Despite some similarities in terms of results, our analysis stands out in certain respects.

The first contribution stems from the analysis of company positioning based on their size, using different typologies. The investigations conducted in most developing countries are conducted separately, whereas a simultaneous approach would have the advantage of highlighting the common constraints to their growth. The second, related to the time horizon, is essential; in addition to the cross-sectional analysis, a panel of companies was created to analyze the factors that can influence growth in a dynamic approach. Third, the introduction of a stratification variable such as the age of the company is essential for the development of targeted policies. However, analyses that capture the effect of manager characteristics would be important in-depth studies for this type of analysis.

Conclusion and Implications Analysis

Data analysis, the distribution of firms by size and length of existence, and econometric estimation provide important results on the determinants of firm growth in Côte d'Ivoire. The objective of this article is to determine the explanatory factors compared between SMEs and large firms in Côte d'Ivoire. Using descriptive analysis, the study demonstrates the predominance of political instability, taxation, and competition from the informal sector in the firm growth process. Econometric modeling identified the emergence of firm size as a crucial factor, with significant growth associated with medium-sized and large firms. However, large firms show negative signs in the panel of firms, indicating that the growing opportunities for young firms over time may diminish after a certain age.

These econometric results also highlight the negative impact of the reduction in employment

in 2015 and security-related spending on firm growth overall. Connection to the electricity grid appears to be an important growth factor in the panel model. While connection is a lever for growth, the financing problem, always identified as a constraint to their development, is not significant in explaining growth, thus invalidating the hypothesis of a significant negative effect on business growth. As Cooper (1994) indicated, the gender of the entrepreneur has a significant impact on business growth. With this in mind, this study demonstrates a significant positive effect of female managers on businesses compared to male managers.

Several implications arise from these results. Overall, the state must fulfill its sovereign functions in security matters by ensuring the safety of property and people to prevent businesses from incurring significant security costs that could diminish their growth efforts. Thus, public safety initiatives and partnerships with the private sector can be considered. It must also provide a favorable environment for business development because large and medium-sized companies tend to increase their investments to capture the opportunities inherent in their size. This has a positive effect on their growth. As for companies, they must have a preference for permanent employment and develop strategies to maintain this type of employment if they want to perform sustainably to maintain their growth trend. Unlike the results obtained for the Swedish and Cameroonian economies, this investigation on Côte d'Ivoire showed a positive effect of female management on business growth. Although gender shows a significant impact in the overall model, its loss of significance in the panel model suggests that additional efforts are needed to understand the dynamics of female entrepreneurship in order to develop targeted policies to promote women's entrepreneurship and their appointment to the top management of firms.

In the specific case of the panel, the issue of security remains a concern and constitutes the main constraint. However, it is observable that access to basic infrastructure such as electricity positively affects business growth. This result encourages the continuation of the Ivorian government's electrification policy initiated for households. Better still, this policy should promote the connection of businesses to electricity. Thus, investing in improving electrical infrastructure can have a significant impact on business growth, particularly in the panel context.

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Appendix

Industries	Size of enterprises			
	Small	Medium	Large	Total
Power supply	33	19	12	64
	51.56	29.69	18.75	100
Textiles	1	2	0	3
	33.33	66.67	0	100
clothing	43	13	2	58
	74.14	22.41	3.45	100
Leather,	9	3	2	14
	64.29	21.43	14.29	100
Wood	13	8	12	33
	39.39	24.24	36.36	100
Papier	1	0	2	3
	33;33	0	66.67	100
Publishing, printing and recorded media,	11	11	0	22
	50	50	0	100
Chemicals,	12	12	6	30
	40	40,00	20	100
Plastics and rubbers,	3	6	10	19
	15.79	31.58	52.63	100
Non metallic mineral products	2	2	1	5
	40;00	40	20	100
Basic metals	6	1	1	8
	75	12.5	12.5	100
Fabricated metal products	8	5	4	17
	47.06	29.41	23.53	100,00
Machinery and equipment (29-30)	4	4	3	11
	36.36	36.36	27.27	100
Electronics (31-32)	5	3	1	9
	55.56	33.33	11.11	100
Precision instruments	2	1	0	3
	66.67	33.33	0,00	100
Transport machines (34-35)	1	1	0	2
	50	50	0	100
Furniture	8	5	0	13
	61.54	38.46	0	100
Recycling	1	0	0	1

	100	0	0	100
Construction Section F:	16	13	6	35
	45.71	37.14	17.14	100
Services of motor vehicles	75	27	5	107
	70.09	25.23	4.67	100
Wholesale	57	24	9	90
	63.33	26.67	10	100
Retail	146	49	8	203
	71.92	24.14	3.94	100
Hotel and restaurants: section H	46	13	2	61
	75.41	21.31	3.28	100
Transport Section I: (60-64)	21	16	7	44
	47.73	36.36	15.91	100
IT	25	5	2	32
	78.13	15.63	6.25	100
Total	549	243	95	887
	61.89	27.4	10.71	100

Proportion of businesses by region and size

Region	Medium			
	Small	Size	Large	Total
Abidjan	460	204	87	751
	6125	27.16	11.58	100
Rest of the country	89	39	8	136
	65.44	28.68	5.88	100
Total	549	243	95	887
	61.89	27.4	10.71	100