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ARTICLES/ARTÍCULOS

Entrepreneurship capital in Spain and its impact on modern economic growth (1886–2000)

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Abstract

This paper explores the relationship between entrepreneurship, measured by the number of new firms per million inhabitants, and modern economic growth in Spain between 1886 and 2000. Following Audretsch and Keilbach's methodology, our analysis seems to confirm that entrepreneurship has had a positive and statistically significant effect on GDP per capita and labor productivity. This finding challenges the traditional view that the entrepreneurial factor has hindered the country's economic growth. Additionally, using data on the size and legal form of start-up firms, our results suggest that neither characteristic has been an important driver of Spain's long-term economic growth. However, we find that the impact of both variables differs depending on the years studied. To our knowledge, this study is the first attempt to test econometrically the long-term contribution of entrepreneurship to Spain's economic growth.

Keywords: entrepreneurship; economic growth; Spain

Palabras clave: emprendimiento; crecimiento económico; España

JEL classification: M13; N00; N10; O47

Resumen

Este trabajo explora la relación entre el emprendimiento, medido en número de nuevas empresas por millón de habitantes, y el crecimiento económico moderno en España entre 1886 y 2000. Nuestro análisis, siguiendo la metodología de Audretsch and Keilbach, parece confirmar que el emprendimiento tiene un efecto positivo y estadísticamente significativo sobre el PIB per cápita y la productividad laboral. Así, nuestro resultado cuestiona la interpretación clásica de que el factor empresarial ha obstaculizado el crecimiento económico del país. Además, utilizando datos sobre el tamaño y la forma jurídica de las nuevas empresas, nuestros resultados sugieren que ninguna de estas características ha constituido un factor determinante del desempeño económico español a largo plazo. Sin embargo, el impacto de ambas variables difiere en función de los años estudiados. Hasta donde sabemos, nuestro estudio es el primero en testar econométricamente la contribución a largo plazo del emprendimiento al crecimiento económico de España.

1. Introduction

Entrepreneurship has historically enhanced the growth and transformation of modern economies as a driver of innovation and competitiveness (Acs, 2006; Audretsch and Thurik, 2001; Baumol, 1990; Baumol and Strom, 2007; Shane, 2000). Defined as the process of starting new businesses or introducing new goods, services, or processes to the market (Shane, 2003, 2003; Shane and Venkataraman, 2000; Venkataraman, 1997), it is recognized as a crucial source of economic dynamism and market or industry development (Drucker, 1985; Schumpeter, 1928, 1934, 1942). Similarly, the absence or deficiencies of entrepreneurial activity have been regarded as causes of economic backwardness (Baumol, 1990; Sáez-García, 2017; Sluyterman and Westerhuis, 2016).

In Spain, insufficient entrepreneurship and its impact on economic growth have sparked a rich academic discussion. This debate originated in the early 20th century, when intellectuals associated with the Generation of '98 and the political movement of "Regenerationism" identified the lack of an entrepreneurial spirit as one of Spain's fundamental problems (Valdaliso and García Ruiz, 2013). Nearly a century later, Gabriel Tortella echoed these arguments, highlighting that low educational levels and certain social and cultural values associated with the "*castizo*" model were significant barriers to the emergence of a genuine entrepreneurial spirit in Spain, thereby explaining the country's slow economic development in the 19th and early 20th centuries (Tortella, 1994). Although Spanish entrepreneurs existed, they were perceived as few and lacking enough daring, which hampered the nation's industrialization. These interpretations have led to the view that foreign capital and firms were instrumental in compensating for the domestic shortfall in initiative and innovation, particularly in knowledge- or technology-intensive sectors (Álvaro-Moya *et al*, 2020; Castro, 2007; Puig and Álvaro-Moya, 2015; Puig and Castro, 2009; San Román *et al*, 2023).

A more recent line of research has led to this thesis evolving to recognize that Spain's slow economic growth was more closely related to institutional constraints rather than a lack of entrepreneurship. This shift in perspective has inspired Spanish economic historiography to delve deeper into the institutional and educational determinants of entrepreneurship. Often employing quantitative indicators, this research has facilitated both national and international comparisons.[1] As a result, now there is a broad consensus that a notable entrepreneurial spirit was present during Spain's economic takeoff in the 20th century. During this period, increased entrepreneurial activity, such as business creation, and economic growth coexisted (Torres, 2000; Tortella, 2000a).

However, the extent to which this entrepreneurial activity influenced long-term economic growth remains an open question. While Spanish economic historiography has extensively studied the determinants of entrepreneurship, there is a notable lack of quantitative studies that measure its contribution to long-term economic development. This paper aims to fill this gap by addressing the question: Has there been a link between entrepreneurship and modern economic growth in Spain? To this end, we draw inspiration from Audretsch and Keilbach (2004) and their concept of "entrepreneurship capital," measured by the number of newly established companies per million inhabitants, as an additional factor in the neoclassical equation.[2] Following this approach, we evaluate the contribution of entrepreneurship to Spain's GDP per capita growth over the period

[1] See, for instance, García Ruiz and Toninelli (2016), Tortella and Quiroga (2013), Tortella *et al.* (2008), and Valdaliso (2005).

[2] Notably, this academic work inspired a bulk of empirical studies analyzing the impact of entrepreneurship on the economic performance of nations and regions, yielding mixed results. See, for instance, Acs (2006), Acs *et al.* (2005), Acs *et al.* (2012), Audretsch (2007), Audretsch *et al.* (2008), Carree and Thurik (2010), and Stoica *et al.* (2020).

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1886–2000.[3] Additionally, we use data on the size and legal form of these start-up firms to examine the impact of these business characteristics on long-term economic growth.

In this paper, we test the relationship between entrepreneurship and economic development using OLS estimates in first differences. In addition to addressing the potential issue of reverse causality, we perform two robustness checks. First, we assess the impact of entrepreneurship on labor productivity, as all mechanisms through which entrepreneurship capital is expected to influence economic growth involve productivity (Audretsch and Keilbach, 2004)—for instance, knowledge spillovers (Romer, 1986; Lucas, 1993), increased competition (Feldman and Audretsch, 1999), and diversity (Jacobs, 1969). Second, we estimate a vector autoregressive (VAR) model and conduct Granger causality tests.

Our results suggest that entrepreneurship capital has had a positive and statistically significant effect on Spain's economic growth during the period 1886–2000. The OLS estimations report a positive correlation between business creation and the growth of GDP per capita and labor productivity. In contrast, the VAR model and Granger causality tests suggest that it is entrepreneurship that drives economic growth, rather than the other way around. Interestingly, in the long term, this effect depends on neither the average size nor the legal form of new Spanish companies. However, the analysis reveals that the impact of both variables varies across different time periods. Regarding firm size, a positive effect on GDP per capita is observed during the "developmentalism" period, highlighting the role of larger business creation in boosting economic results during Spain's second phase of industrialization. For legal forms, we found a positive correlation between modern legal forms and Spain's economic growth between 1886 and 2000, underscoring the significant role of joint-stock companies. However, this result appears to reflect the broader impact of entrepreneurship—predominantly driven by modern businesses since the mid-20th century—rather than the specific contribution of the legal form itself. To our knowledge, this is the first empirical study to quantify the historical contribution of entrepreneurship to Spain's economic growth.

The remainder of this paper is organized as follows. Section 2 presents our literature review on entrepreneurship and economic growth, highlighting the contributions of the Spanish economic historiography. Section 3 describes our methodology and data. Section 4 presents and discusses our main findings on the contribution of entrepreneurial capital and its profile—business size and legal form—to Spain's long-term economic growth. The final section offers our concluding remarks.

2. Entrepreneurship and economic growth

The debate about the determinants of economic growth remains open (Easterly, 2001; Helpman, 2004). Solow's (1956) work prompted a deeper understanding of the complexity of growth phenomena and the identification of its determinants. According to neoclassical theory, economic growth hinges on two primary productive factors—physical capital and labor—and an implicit factor: technological change. Endogenous growth theory expanded this framework by introducing knowledge as another crucial factor, which is transmitted through externalities and generates spillover effects in the economy (Lucas, 1988; Romer, 1986). Years later, North (1990, 2005) emphasized the significance of institutions in the analysis of growth and inspired a new discussion on the role of institutions in the economic growth process (Urbano *et al*, 2019).

During the last decades, several economic scholars have also argued for the inclusion of entrepreneurship among the determinants of economic growth (Baumol and Strom,

[3] This is also the approach used by García Ruiz and Pérez-Amaral (2013) when measuring entrepreneurship in 20th-century Spain and the influence of variables like technological change, income, education, or taxes on it.

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2007; Gil-López *et al*, 2016; Urbano *et al*, 2019; Wennekers and Thurik, 1999). They, in fact, recover an old concern for understanding the entrepreneur as a productive factor that should be introduced into economic development theory (Knight, 1921; Schumpeter, 1934, 1949). Following this approach, Audretsch and Keilbach (2004) proposed that the neoclassical production function had overlooked a crucial factor linked to output: entrepreneurship capital, described as "a region's endowment with factors conductive to the creation of new businesses" (p. 951). They argued that this omission contributed to the under-exploration of the empirical link between entrepreneurship and variations in economic performance, often relying solely on case studies.

Following the pioneering work of Audretsch and Keilbach (2004), a specific body of business and economic literature has emerged dedicated to uncovering the factors that shape the dynamics of business creation and their resulting impact on the economic results (Acs and Armington, 2006; Audretsch and Keilbach, 2004; Audretsch *et al*, 2006; Audretsch and Thurik, 2001; Carree and Thurik, 2010; Van Stel, 2006). Many studies have empirically analyzed the interrelation between entrepreneurship and economic growth, aiming to address the gap left by neoclassical theory (Acs *et al*, 2012; Audretsch, 2007; Audretsch and Keilbach, 2004; Rico and Cabrer-Borrás, 2019; Stoica *et al*, 2020; Urbano *et al*, 2019; Valliere and Peterson, 2009; Wong *et al*, 2005). In this line of research, economic growth has been measured in different ways: a country or region's GDP, GDP per capita, labor productivity, or total-factor productivity.

In general, the main hypothesis of this research posits that entrepreneurship has a positive impact on economic growth (Acs and Audretsch, 2003), which is widely supported by empirical findings. For example, using data from German regions, Audretsch and Keilbach (2004) concluded that entrepreneurship capital plays a significant role in shaping output and productivity. They argue that entrepreneurship facilitates knowledge spillovers, enhances competition, and injects diversity. Similarly, Acs *et al.* (2005) also identified a positive impact of entrepreneurship on economic growth, in addition to investments in research and human capital. Studies such as those of Callejón and Segarra (1999), Erken *et al.* (2018), and Holtz-Eakin and Kao (2003) have provided evidence of a positive relationship between business dynamics and higher levels of productivity.

However, studies have also yielded mixed results, indicating that there is currently no definitive and convincing conclusion regarding the role of entrepreneurship in economic development (Baumol, 1968; Box *et al*, 2014; García Ruiz and Toninelli, 2016). Indeed, although Audretsch *et al.* (2008) found a positive impact of entrepreneurship on growth, they explicitly suggested the need for further research to support that result and to enhance the measurement of entrepreneurship, even though any proxy is an imperfect estimate. Available measures are indeed diverse and concern different levels of analysis, individual versus organization: Audretsch and Keilbach (2004), for instance, used the number of start-ups relative to the population, stating that this is the most appropriate measure of entrepreneurial capital. Others have taken advantage of the indicators provided by the Global Entrepreneurship Monitor (GEM) database, including nascent entrepreneurs (Van Stel *et al*, 2005), total early-stage entrepreneurial activity (Acs *et al*, 2018; Rico and Cabrer-Borrás, 2019; Van Stel *et al*, 2005),[4] opportunity-driven early-stage entrepreneurship, or necessity-driven early-stage entrepreneurship (Kim *et al*, 2022).[5] Entrepreneurship has also

[4] This is the GEM's most well-known index, representing the percentage of the 18–64 population who are either a nascent entrepreneur or owner-manager of a new business.

[5] Opportunity-driven early-stage entrepreneurial activity refers to the proportion of individuals engaged in initial entrepreneurial endeavors who assert being motivated either wholly or partially by seizing opportunities, rather than being compelled by the absence of alternative employment options. Necessity-driven early-stage entrepreneurial activity, on the other hand, represents the percentage of individuals involved in

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been approached through data on self-employment (Bjørnskov and Foss, 2013) and the number of business owners per workforce (Erken *et al*, 2018).

Some studies have suggested that the impact of entrepreneurship on economic growth is contingent upon various factors, such as the types and phases of entrepreneurship, the stage of a country's development, or the quality of the institutional environment. For instance, Stoica *et al.* (2020) found that opportunity-driven entrepreneurship has a greater impact in European transition countries. In contrast, necessity-driven entrepreneurship would have a similar impact in European innovation-driven countries with a higher level of income. Likewise, using data from GEM, Van Stel *et al.* (2005) found that entrepreneurial activity is positively correlated with growth in rich countries and inversely associated in low-income countries. Prieger *et al.* (2016) distinguished between developed and developing countries, finding a positive effect of entrepreneurship on growth in developing countries but no effect in developed countries.

When discussing the varied results obtained, certain authors explicitly emphasize the necessity of an institutional analysis to understand the entrepreneurial endowments within different regions and countries. Such an approach proves valuable not only for explaining differences in growth rates among nations but also for elucidating why entrepreneurship yields distinct effects across various contexts (Acs *et al*, 2008; Urbano *et al*, 2019). Examining data spanning 25 EU countries from 2003 to 2014, Bosma *et al.* (2018) underscore the role of institutional quality in fostering productive entrepreneurship, thereby facilitating economic growth.

The literature has also shown that the impact of entrepreneurship on economic growth may depend on the characteristics of the companies, including their size and legal form (Trullén, 2006). Regarding the first issue, there is currently a broad debate. While Chandler's (1977, 1990) work has inspired extensive literature emphasizing the key role of big companies in economic growth through economies of scale and diversification (Cassis *et al*, 2016; Chandler *et al*, 1997), other authors have highlighted the advantages of small- and medium-sized enterprises (SMEs) for economic development, particularly their greater capacity for innovation and adaptation (Audretsch and Thurik, 2000; Binda, 2013; Binda and Colli, 2013; Carree and Thurik, 1999). On the other hand, regarding companies' legal form, there seems to be a general consensus on its influence on economic growth, as it determines how investors in multi-owner firms combine their assets and efforts to create new companies and new investments (Guinnane *et al*, 2007). In this sense, corporations have traditionally been considered a significant driver of economic development (Chandler, 1977; Hansmann and Kraakman, 2000; Rosenberg and Birdzell, 1986). More recently, Guinnane *et al.* (2007) also pointed to the limited liability company as a legal form capable of boosting economic growth.

Focusing on the case of Spain, the interest in entrepreneurship and its impact on economic growth dates back to the traditional hypothesis about "the weakness of the Spanish entrepreneurial spirit" (Tortella, 2000b, p. 207). Contrary to this idea, Valdaliso (2005) was the first to analyze the relationship between entrepreneurship and GDP per capita in Spain between 1886 and 1990. Through descriptive analysis, he observed a positive correlation, concluding that entrepreneurship has driven economic development—although without empirical testing. Interestingly, Tortella *et al.* (2008) reached a similar conclusion using the same method of analysis—a correlation graph—while adding a series of explanatory variables for entrepreneurship, including income, innovation, interest rates, unemployment rate, and education. However, more recently Tortella *et al.* (2011, 2016) have suggested that it

initial entrepreneurial activities driven primarily by necessity, as they perceive no better alternatives for employment.

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is not just the *quantity* of entrepreneurship itself but its *quality*—in terms of education—that influences the economic outcomes.

Thus, since the early 2000s, an expanding body of economic history research has aimed to investigate the determinants—particularly educational—of entrepreneurship in Spain and its influence on the country's economic development. While literature on entrepreneurship determinants has highlighted the significance of education—specifically, slow educational progress—and institutions for the quality of entrepreneurship in Spain (García Ruiz, 2016; García Ruiz and Pérez-Amaral, 2013; García Ruiz and Toninelli, 2016; Tortella *et al*, 2008, 2011, 2013, 2016), another line of research has explored how certain business characteristics, such as their size and legal form, might have influenced modern growth in the country. In this regard, a well-known thesis in Spanish economic history argues that the absence of big corporations—or the lack of a "business revolution" (Carreras and Tafunell, 1999, p. 301)—has constrained economic growth (Carreras, 1996; Carreras and Tafunell, 1993, 1996; Carreras *et al*, 2003). Other authors, however, argue that Spain's deviation from the Chandlerian model of large corporations has resulted in a growth pattern led by SMEs (Caruana *et al*, 2011; Fernández-Pérez and Puig, 2004; Hernández-Barahona *et al*, 2025). Concerning legal forms, Guinnane and Martínez-Rodríguez (2018), Jiménez Araya (1974), and Tafunell (2005) suggest that the adoption of modern structures, such as a corporation or limited company, has been a positive driver of economic modernization and growth in Spain.

Likewise, the impact of entrepreneurship on national GDP and productivity has also been tested in several empirical studies, which have generally found a positive interrelation between them (González-Pernía and Peña-Legazkue, 2015; Massón, 2007; O'kean *et al*, 2006; Rico and Cabrer-Borrás, 2019; Salas-Fumás and Sánchez-Asin, 2010). However, these works, aligned with the approach of Audretsch and Keilbach (2004), often measure the performance of the Spanish economy over very recent and short periods, thus lacking a long-term lens.

In summary, although the relationship between entrepreneurship and economic growth has been extensively analyzed, few studies have used long-term datasets, resulting in a scarcity of studies with historical perspectives. Consequently, findings tend to be inconclusive and lack generalizability across different times and contexts, potentially influenced by the varying stages of economic development or the specific nature of entrepreneurial activities. Our paper aims to address this gap by examining the relationship between entrepreneurship and modern economic growth in Spain between 1886 and 2000. In doing so, we contribute to the ongoing debate in Spanish historiography concerning the role of entrepreneurship and business dynamics in the country's economic performance.

3. Method and data

Our study begins with the implementation of the new Commercial Code of 1885 and extends throughout the entire 20th century. The 1885 Commercial Code aimed to establish a robust system of advertising new companies with sufficient guarantees for third parties (Martín *et al*, 2003). This code ensured more accurate recording of information and required companies to register and specify their legal forms. This enables us to capture not only the aggregate impact of entrepreneurship but also the effects of firm size and legal structure on Spanish economic development.[6]

[6] The Commercial Code of 1885 admitted the following legal structures: Sociedad Regular Colectiva, Sociedad Comanditaria, Sociedad Anónima, and Sociedad de Responsabilidad Limitada. We have grouped the first two as partnership companies—traditional legal forms—and the last two as joint stock companies—modern legal forms. The main difference between these two groups of companies is that in partnership companies the liability of the

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To achieve our main purpose of assessing the impact of entrepreneurship on long-term economic growth in Spain, we formulate a series of hypotheses to guide our empirical analysis:

Hypothesis 1 (H1): Entrepreneurship capital has positively driven modern economic growth in Spain—inspired by Tortella *et al.* (2008) and Valdaliso (2005).

Hypothesis 2 (H2): There has been a positive relationship between the average size of new companies and modern economic growth in Spain—inspired by Carreras and Tafunell (1996, 1999).

Hypothesis 3 (H3): The legal form of new companies has influenced modern economic growth in Spain—inspired by Guinnane and Martínez-Rodríguez (2018), Jiménez Araya (1974), and Tafunell (2005).

To test our three hypotheses, we adopt the model proposed by Audretsch and Keilbach (2004), which is the predominant methodology used in economic and business literature for measuring the impact of entrepreneurship on economic growth. Following Romer (1990), the authors formulate a Cobb–Douglas production function, in which gross value added (Y_t) is expressed as a function of physical capital (K_t), labor factor (L_t), knowledge capital (R_t), and entrepreneurship capital (E_t):

$$Y_t = \alpha K_t^{\beta 1} L_t^{\beta 2} R_t^{\beta 3} E_t^{\beta 4} \varepsilon_t \quad (1)$$

However, the literature has also emphasized the convenience of including additional factors that influence economic growth into the model (Rico and Cabrer-Borrás, 2019; Stoica *et al*, 2020; Tahir and Burki, 2023). Thus, research using this methodology often incorporates proxies for human capital (H_t), public expenditure (PE_t), and trade openness (TO_t) as independent variables in the equation. Therefore, we propose the following expanded model:

$$Y_t = \alpha K_t^{\beta 1} L_t^{\beta 2} R_t^{\beta 3} E_t^{\beta 4} H_t^{\beta 5} PE_t^{\beta 6} TO_t^{\beta 7} \varepsilon_t \quad (2)$$

Using the logarithm transformation, we derive the following equation to test H1:

$$lnY_t = \alpha + \beta_1 lnK_t + \beta_2 lnL_t + \beta_3 lnR_t + \beta_4 lnE_t + \beta_5 lnH_t + \beta_6 lnPE_t + \beta_7 lnTO_t + \varepsilon_t \quad (3)$$

In our paper, the dependent variable Y_t represents Spain's GDP per capita—since it is a more accurate indicator of economic growth than the GDP. Our interest variable, E_t, following Audretsch and Keilbach (2004) and García Ruiz and Pérez-Amaral (2013), quantifies entrepreneurship capital as the number of new companies in Spain, adjusted for the country's total population. This definition confines entrepreneurship to the creation of new businesses, thereby excluding the phenomenon of intra-entrepreneurship or corporate entrepreneurship—innovative activities within existing firms. The data encompass both private and public companies, reflecting the view that if entrepreneurship is understood as the creation of new business ventures, then the state can also be considered "entrepreneurial."[7] Although our proxy of entrepreneurship overlooks the role of individual entrepreneurs, this approach was chosen to ensure the collection of a consistent and long-term dataset.

partners is unlimited, while in joint stock companies it is limited to the investment made. Furthermore, this last group includes the two legal forms associated with economic growth in the literature: corporations (Sociedades Anónimas) and limited liability companies (Sociedades de Responsabilidad Limitada).

[7] This approach aligns with the extensive body of literature on public entrepreneurship (Barlett and Dibben, 2002; Klein *et al*, 2010; Schnellenbach, 2007) and acknowledges the significant role of state-owned enterprises in the Spanish economy throughout the 20th century (Comín, 2008; Comín and Martín Aceña, 1991, 1996).

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Table 1. Description of the variables considered in our analysis

Variable	Definition	Source
Dependent variables		
Y	Gross domestic product per capita, data expressed in constant 2010 euros	Prados de la Escosura (2003)
LP	Gross domestic product per full-time employee, data expressed in constant 2010 euros	Prados de la Escosura (2003)
Interest variables		
E	No. of new companies per million inhabitants	Tafunell (2005)
AS	Average capital of new companies, data expressed in constant 2010 million euros	Tafunell (2005)
JSC	No. of new joint stock companies per million inhabitants	Tafunell (2005)
PC	No. of new partnership companies per million inhabitants	Tafunell (2005)
Control variables		
K	Gross fixed capital formation, data expressed in constant 2010 million euros	Prados de la Escosura (2003)
L	No. of full-time employees, data expressed in million people	Prados de la Escosura (2003)
R	No. of patents conceded	Tafunell (2005)
H	Higher education enrolment rate, data expressed as a percentage of the total population aged 20–24 years	Tafunell (2005)
PE	Public expenditure, data expressed in constant 2010 million euros	Prados de la Escosura (2003)
TO	Trade openness, data expressed as a percentage of GDP	Prados de la Escosura (2003)

Source: Own elaboration.

In addition to the aforementioned variables, our econometric model incorporates several control variables. They encompass different factors, identified by economic growth theories, that influence economic performance: physical capital (proxied by gross fixed capital formation), labor factor (measured by the number of full-time employees), knowledge capital (number of granted patents), human capital (higher education enrolment rate), public expenditure, and trade openness. Table 1 presents a description of the dependent, interest, and control variables used in this study, along with their definitions and the sources from which we collected our data. Table 2 shows the main descriptive statistics of the variables. Our analysis is primarily based on two main data sources: *Estadísticas Históricas de España, Siglos XIX-XX* coordinated by Albert Carreras and Xavier Tafunell and *El progreso económico de España (1850–2000)* by Leandro Prados de la Escosura.

We use Equation (4) to test H2, replacing the variable E_t with AS_t, which measures the average size of new companies in Spain in terms of capital. For testing H3, we introduce variables JSC_t (the number of new joint-stock companies per million inhabitants) and PC_t (the number of new partnership companies per million inhabitants) into the analysis using Equation (5):

$$lnY_t = \alpha + \beta_1 lnK_t + \beta_2 lnL_t + \beta_3 lnR_t + \beta_4 lnAS_t + \beta_5 lnH_t + \beta_6 lnPE_t + \beta_7 lnTO_t + \varepsilon_t \quad (4)$$

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Table 2. Main descriptive statistics of the variables

Variable	Mean	Standard deviation	Minimum	Maximum
GDP per capita	609.4	523.4	196.5	2,114.3
Labor productivity	1,760.3	1,572.3	561.8	5,447.3
Entrepreneurship	373.4	691.0	7.9	2,755.0
Average size	2,630.0	2,834.0	171.3	15,880.0
Joint-stock companies	352.3	702.1	3.2	2,711.0
Partnership companies	21.6	24.9	0.5	102.0
Physical capital	41,371.0	54,422.0	1,601.0	225,253.0
Labor factor	9.7	2.6	6.2	15.9
Knowledge capital	4,510.0	3,616.0	195.0	21,230.0
Human capital	0.1	0.1	0.1	0.3
Public expenditure	27,481.0	37,262.0	2,944.0	144,999.0
Trade openness	0.2	0.1	0.1	0.6

Source: Own elaboration

$$lnY_t = \alpha + \beta_1 lnK_t + \beta_2 lnL_t + \beta_3 lnR_t + \beta_4 lnPC_t + \beta_5 lnJSC_t + \beta_6 lnH_t + \beta_7 lnPE_t + \beta_8 lnTO_t + \varepsilon_t \quad (5)$$

Equations (3)–(5) are estimated by the OLS method in first differences to eliminate possible spurious correlations between entrepreneurship and economic growth. In addition, given the potential problems of heteroscedasticity that are usually present in real-time series, we have also estimated the equations with heteroscedasticity correction (Peña, 1990).

Finally, the possible existence of reverse causality constitutes a potential problem for our results. The exact nature of the causal relationship between entrepreneurship and economic growth is unclear. To address this endogeneity problem and confirm the directionality of the relationship between the variables, we perform two robustness checks. First, we test the impact of entrepreneurship on labor productivity (LP_t), since all mechanisms through which entrepreneurship capital should influence economic growth involve productivity (e.g., knowledge spillovers or competition). Second, when we obtain a positive and statistically significant correlation between entrepreneurship and economic growth, we estimate the following VAR model:

$$Z_t = A_0 + \sum\nolimits_{i=1} A_i Z_{t-i} + BX_t + u_t \quad (6)$$

where Z is a vector containing the endogenous variables of the model; X is a vector containing the exogenous variables;[8] A_0 is a vector of intercepts; A_i is a coefficient matrix that

[8] R and H are considered exogenous variables, since they are not influenced by the rest of the variables—endogenous—within the model. See, for instance, the long-term studies of De Meulemeester and Rochat (1995) and Myszczyszyn (2020).

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measures the effect of Z_{t-i} on Z_t; and B is a coefficient matrix that captures the effect of X_t on Z_t. u_t is the vector of error terms.[9]

Among other advantages, the VAR model enables the consideration of mutual causality between different variables. Additionally, this method facilitates the examination of causality direction using the Granger causality test. This technique cannot provide definitive conclusions about causal relationships; however, the Granger causality test is generally considered to demonstrate the probability of causation more strongly than simple correlation (Geweke, 1984). Therefore, this methodology enhances the possibility of testing our empirical results on the relationship between entrepreneurship and economic growth in Spain during the period 1886–2000 (Box *et al*, 2014; Carree and Thurik, 2008).

4. Results and discussions

1. Entrepreneurship capital

Figure 1 illustrates the evolution of GDP per capita and business creation in Spain from 1886 to 2000. Both series exhibit similar long-term trends, in line with findings by Tortella *et al.* (2008) and Valdaliso (2005): slow growth during the late 19th century and the first half of the 20th century, followed by a notable upturn since 1960, coinciding with the implementation of the Spanish Stabilization and Liberalization Plan 1 year earlier.[10] The strong positive correlation between the two series is evident, with specific periods showing an inverse correlation, such as during the Dictatorship of Primo de Rivera (1923–1930) and the II Spanish Republic (1931–1936), as well as the economic crisis between 1978 and 1985. During the 1920s and 1930s, despite GDP per capita growth, there was a significant decline in the number of new companies. Indeed, from the end of the 1920s, fluctuations in the number of start-ups became more pronounced due to the deterioration of business confidence associated with the last stages of the Dictatorship of Primo de Rivera, the international crisis of 1929, and the structural and labor policy reforms of the first republican governments. Conversely, between 1978 and 1985, the slowdown in GDP per capita coincided with a notable surge in business creation in Spain, driven by the extensive renewal of the national business landscape during those years (Valdaliso, 2005).

Beyond these specific periods, the main difference between the temporal evolution of GDP per capita and business formation is the greater volatility of the latter. Although our proxy for entrepreneurship capital seems to be a reliable leading indicator of modern Spanish economic growth cycles, the fluctuations in this series are significantly more pronounced than those of GDP per capita. This finding is consistent with expectations, given Spain's status as a late-developing country. Amorós and Cristi (2008) suggest that countries with lower GDP per capita exhibit higher variance in their levels of entrepreneurial activity. Similarly, Amorós *et al.* (2009, 2011) report that lower entrepreneurial volatility is associated with countries that have more predictable and consistent institutional frameworks, sufficient government subsidies for new and growing firms, and better entrepreneurship education and training.

Examining the evolution of the newly established companies per year in Figure 1, it becomes clear that, despite cyclical fluctuations, the long-term trend remains notably stable up to the 1950s. This suggests that the modernization of the Spanish economy in the 1960s was not preceded by a sustained and prolonged increase in investment through the

[9] Based on the Akaike, Bayesian, and Hannan–Quinn information criteria, we estimated the VAR model using 1-year lagged variables. Higher-order lags yielded inferior results according to these criteria.

[10] To some extent, this trend echoes the view of continuity in Spain's economic growth until the mid-20th century, advocated by Prados de la Escosura (2007).

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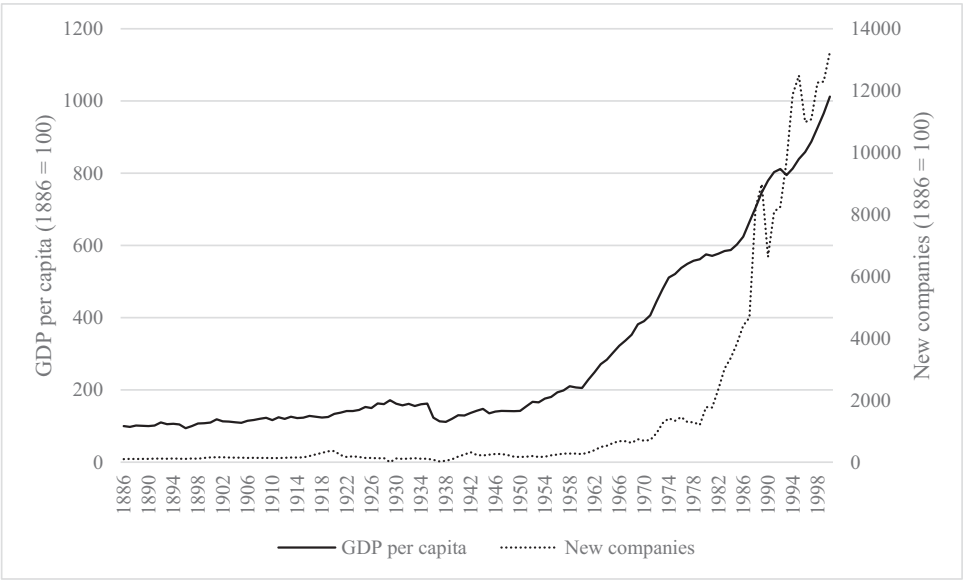

(1886-2000)

Figure 1. Evolution of GDP per capita and number of new companies in Spain (1886–2000). *Source:* Own elaboration based on GDP per capita data from Prados de la Escosura (2003) and new companies' data from Carreras and Tafunell (2005).

establishment of new firms (Tafunell, 2005). To address the difficulty of visualising fluctuations in our proxy for entrepreneurial capital before 1960 due to scaling issues, Figure 2 focuses on the period from 1886 to 1959. Within this period, there are three significant short-lived booms: the surge in the late 19th century, the remarkable growth during World War I, and the singular recovery in the 1940s following the Civil War. These periods of growth were interspersed with intervals characterised by stagnation and contraction.

In 1899, the repatriation of capital from the lost Spanish colonies triggered a remarkable rise in the establishment of new companies in the context of an economic boom. The rapid economic recovery of the country following the loss of the colonies was facilitated by the inflow of investment, financial expansion, and the process of nationalising assets (Maluquer De Motes, 1999). Following the culmination of this growth cycle in 1904, the formation of new societies stabilized until the onset of the subsequent expansionary phase, also driven by an external factor, World War I. At this time, the heightened demand from belligerent countries led to a new boom in companies' establishment, a trend not replicated until the industrialization of the 1960s. However, the decline in new company formations, which started in 1920 following the post-war crisis, persisted for two decades, suggesting that the economic gains experienced during the European war were purely conjunctural.

The apparent recovery post-Civil War, as reflected in the figures between 1940 and 1943, is somewhat misleading. Many of the companies established during this period are essentially re-registrations of businesses that existed before the war. The extent to which this inflation of business registrations is fictitious remains unknown (Torres, 2003). Thus, after a decade in the 1950s marked by sporadic and challenging entrepreneurial progress in a context of increasing openness and economic recovery, the early 1960s marked the onset of sustained growth in company creation. Between 1960 and 1973, business creation intensified, far exceeding previous levels. Spain's full reintegration into the international economy

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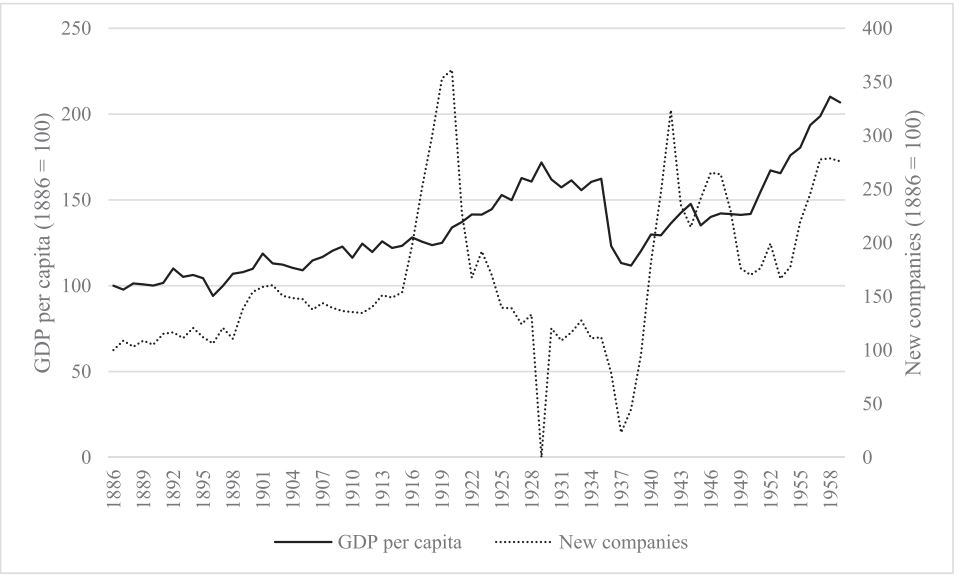

(1886-1959)

Figure 2. Evolution of GDP per capita and number of new companies in Spain (1886–1959). Source: Own elaboration based on GDP per capita data from Prados de la Escosura (2003) and new companies data from Carreras and Tafunell (2005).

and the opening of trade and finance following the 1959 Stabilization Plan accelerated growth and facilitated catch-up with Western Europe (Prados de la Escosura *et al*, 2011). This period laid the foundations for a flourishing of new businesses under improved economic expectations. Since then, the series depicting new companies shows a strong upward trend, marking a significant departure from the relatively flat trajectory observed over the long term until the mid-20th century.

The oil crisis temporarily interrupted this growth trend. The severity of the economic downturn, the instability associated with the democratic transition, the industrial crisis of 1979, and the rising cost of capital understandably discouraged business creation. Since the early 1980s, the series of newly established businesses resumed its upward trajectory, which continued until the year 2000, except for brief downturns in 1990 and 1996.[11] During these last two decades of the 20th century, entrepreneurship capital doubled, driven by the growth experienced by the Spanish economy and the country's integration into European institutions and international markets.

After this descriptive analysis, the observed correlation between business creation and economic growth in Spain is now tested econometrically. The non-stationarity of the series and their similar trends make it necessary to estimate the equations in first differences to avoid possible spurious correlations.

The OLS estimation results of Equation (3), reported in Table 3, confirm our H1: entrepreneurship capital has been a significant driver of long-term Spanish economic growth. The results support a positive and statistically highly significant effect of business

[11] The declines observed in both years appear to be related to regulatory changes. The drop in 1990, which particularly affected corporations, can be attributed to the new company law enacted in 1989, which aligned commercial legislation for this legal form with EEC directives. In 1996, a new law mandated a minimum capital requirement of 500,000 pesetas for limited liability companies, which had to be fully paid up from the outset.

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Table 3. OLS estimation results of Equation (3)

	GDP per capita 1886–2000	Labor productivity 1886–2000
Entrepreneurship	0.047***	0.051***
	(0.013)	(0.013)
Physical capital	0.052*	0.051*
	(0.027)	(0.028)
Labor factor	0.556***	−0.020
	(0.071)	(0.091)
Knowledge capital	0.006*	0.005
	(0.004)	(0.004)
Human capital	0.161***	0.193***
	(0.046)	(0.046)
Public expenditure	0.171***	0.171***
	(0.032)	(0.032)
Trade openness	0.005	0.001
	(0.014)	(0.024)
R^2	0.692	0.637
Heteroscedasticity correction	Yes	Yes
Durbin–Watson	2.516	2.470
No. of observations	104	104

Notes: Robust standard errors are shown in parentheses. Asterisks denote statistical robustness:
* at the 10% level, ** at the 5% level, and *** at the 1% level.

establishment on national GDP per capita and labor productivity. Specifically, a 1% increase in the growth of entrepreneurship capital generates approximately a 0.05% increase in the growth of the two macroeconomic indicators evaluated. This positions entrepreneurial capital as a substantial factor in Spain's modern economic growth—less influential than human capital, public expenditure, and, above all, labor, but comparable to physical capital and more determinant than knowledge capital and trade openness.

Given the risk of reverse causality, a VAR model and the Granger causality test have been estimated. Their results, presented in Tables 4 and 5, support the notion that entrepreneurship indeed causes economic growth, rather than the other way around. Consistent with the OLS results, the VAR model reports a significant coefficient close to 0.05 for the first lag of the entrepreneurship variable, both when analyzing GDP per capita and labor productivity. In addition, Granger causality tests indicate that the effect of entrepreneurship on GDP per capita and labor productivity is statistically significant at the 5% and 10% levels, respectively, while the reverse effect is far from significant.

The above result aligns with the prevailing consensus that entrepreneurship plays a crucial role in economic growth. It also challenges the traditional view that a lack of entrepreneurial spirit has hindered Spain's economic development. If we define entrepreneurship as the creation of new businesses, our findings provide evidence that the development of entrepreneurship during the 20th century in Spain positively influenced the country's economic growth (Torres, 1996, 2003; Tortella, 1994, 1996; Tortella *et al*, 2008; Valdaliso, 2005).

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Table 4. Estimation results of VAR model (6) including variable *E*

	GDP per capita 1886–2000	*Entrepreneurship* 1886–2000	*Labor productivity* 1886–2000	*Entrepreneurship* 1886–2000
GDP per capita	−0.161	0.169	–	–
	(0.103)	(0.421)		
Labor productivity	–	–	−0.125	0.143
			(0.101)	(0.415)
Entrepreneurship	0.049**	0.220**	0.042*	0.221**
	(0.024)	(0.098)	(0.024)	(0.098)
Physical capital	0.029	−0.253**	0.024	−0.258**
	(0.031)	(0.127)	(0.031)	(0.127)
Labor factor	0.602**	0.267	0.023	−0.332
	(0.251)	(1.029)	(0.249)	(1.024)
Knowledge capital	0.013	−0.048	0.009	−0.051
	(0.009)	(0.040)	(0.010)	(0.040)
Human capital	0.149**	0.197	0.192***	0.251
	(0.067)	(0.273)	(0.064)	(0.263)
Public expenditure	0.078**	−0.226	0.072*	−0.227
	(0.039)	(0.163)	(0.009)	(0.163)
Trade openness	0.022	0.093	0.022	0.097
	(0.027)	(0.109)	(0.027)	(0.109)
No. of observations	102	102	102	102

Notes: R and *H* are considered exogenous variables. First differences were applied to ensure stationarity of the variables. Robust standard errors are shown in parentheses. Asterisks denote statistical robustness:
* at the 10% level, ** at the 5% level, and *** at the 1% level.

Table 5. Granger causality test between entrepreneurship and economic growth

	GDP per capita 1886–2000	*Labor productivity* 1886–2000	*Entrepreneurship* 1886–2000
GDP per capita	–	–	chi^2 (1) = 0.16 Prob > chi^2 = 0.687
Labor productivity	–	–	chi^2 (1) = 0.12 Prob > chi^2 = 0.730
Entrepreneurship	chi^2 (1) = 4.14 Prob > chi^2 = 0.042	chi^2 (1) = 3.15 Prob > chi^2 = 0.076	–
No. of observations	102	102	102

Note: Granger causality tests calculated from the VAR model (6) including variable *E*.

2. *Business size and legal form*

Having tested and confirmed the importance of entrepreneurship capital for long-term Spanish economic growth, we now address the impact of entrepreneurship through the profile of the new companies—size and legal form. Regarding the first aspect, Figure 3

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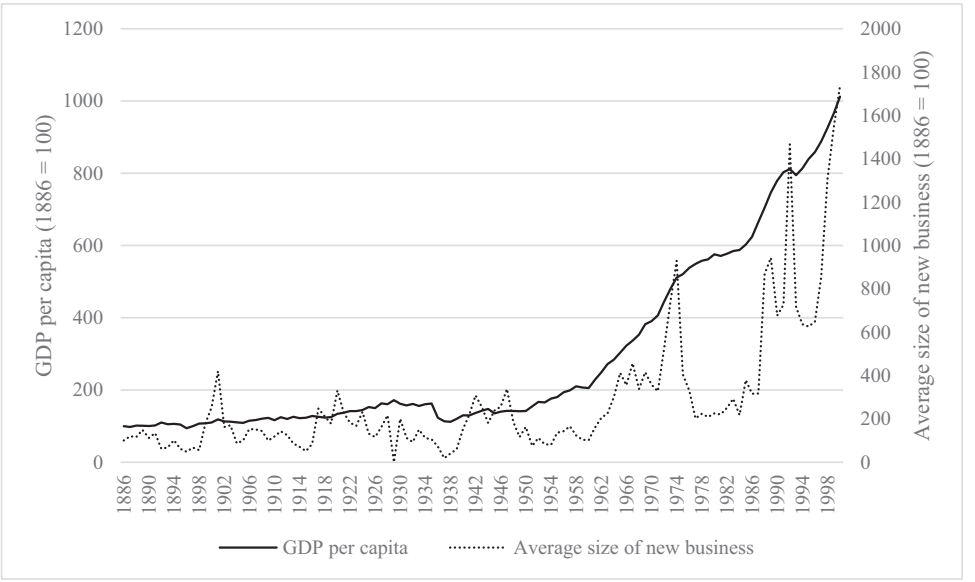

(1886-2000)

Figure 3. Evolution of GDP per capita and average size of new business in Spain (1886–2000). *Source*: own elaboration based on GDP per capita data from Prados de la Escosura (2003) and average business size data from Carreras and Tafunell (2005).

illustrates the evolution of the average size of newly established companies in Spain, alongside that of GDP per capita, during the analyzed period. Both series show a high correlation, at least until the 1970s. The average business size series follows a similar trajectory to the business creation series but exhibits more pronounced fluctuations. Again, the inflexion point in both series is evident in the 1960s. Prior to this decade, we can identify upward and downward phases closely mirroring those in the business formation series.

After 1960, despite sustained growth in company creation, the increase in the average size of new businesses is somewhat blurred by significant cyclical fluctuations. Although both the average capital and the number of new firms grew significantly during the Spanish "developmentalism," surpassing the maximum values of previous periods, this parallelism breaks down after 1974. From then onward, the trajectory of the average capital of new businesses seems closely aligned with fluctuations in business expectations and the broader economic cycle, showing more pronounced variability. This underscores the adaptability advantages of SMEs in highly uncertain environments. The depression caused by the two oil shocks of the 1970s persisted for a decade, causing the average size of new businesses to regress to levels of the early 1960s. The recovery following the crisis, since 1985, spurred strong growth in average business size during the second half of the 1980s, mirroring the broader boom in the Spanish economy and its increasing orientation toward international markets. The downturn at the beginning of the following decade is also evident in the size series, despite the still unexplained peak in 1992 (Tafunell, 2005). Finally, the new growth cycle in the last 5 years of the 20th century reached a new historical maximum, illustrating an increasing establishment of larger companies and, once again, a common trend between business capital and economic growth.

Therefore, consistent with Tafunell (2005), these findings suggest that there might be a relationship between the size of new business and GDP per capita, meaning that Spain's

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Table 6. OLS estimation results of Equation (4)

	GDP per capita 1886–2000	*Labor productivity* 1886–2000	*GDP per capita* 1960–1975	*Labor productivity* 1960–1975
Average size	0.007	0.007	0.015*	0.010
	(0.005)	(0.006)	(0.008)	(0.007)
Physical capital	0.083***	0.076**	0.317***	0.331***
	(0.031)	(0.033)	(0.083)	(0.081)
Labor factor	0.406***	−0.055	−0.235	−0.937**
	(0.073)	(0.105)	(0.261)	(0.281)
Knowledge capital	0.005***	0.006**	−0.019	−0.019
	(0.002)	(0.003)	(0.012)	(0.011)
Human capital	0.123***	0.205***	−0.174***	−0.167***
	(0.046)	(0.053)	(0.037)	(0.034)
Public expenditure	0.194***	0.195***	0.144***	0.139***
	(0.036)	(0.041)	(0.038)	(0.034)
Trade openness	0.029	0.038	−0.057	−0.059*
	(0.022)	(0.025)	(0.033)	(0.028)
R^2	0.903	0.557	0.974	0.974
Heteroscedasticity correction	Yes	Yes	Yes	Yes
Durbin–Watson	2.493	2.455	2.100	2.182
No. of observations	104	104	16	16

Notes: Robust standard errors are shown in parentheses. Asterisks denote statistical robustness:
* at the 10% level, ** at the 5% level, and *** at the 1% level.

modern economic growth tended to coexist with an increase in business capital. However, the OLS estimation results of Equation (4), reported in the first two columns of Table 6, do not support a positive effect of new business size on economic growth, thus failing to confirm our H2. The results suggest a null effect of the average size of new firms on GDP per capita and labor productivity for the whole period studied. This aligns with Massón (2007), who reported similar results for the years 2000–2005. These findings suggest that the commonly perceived absence of large corporations, often interpreted as a limitation to the contemporary Spanish economic development, has not necessarily hindered national economic growth. However, this does not imply that the creation of bigger businesses has never contributed to Spanish economic growth. Notably, during the "developmentalism" period, the size of new firms reports a significant positive effect on GDP per capita, shown in the third column of Table 6. This correlation could be attributed to the specific phase of the Industrial Revolution that Spain was experiencing. Specifically, the transition to a mass production system—typically associated with the positive effects of business size on economic growth—largely occurred during these years of "developmentalism."[12]

Regarding legal forms, Figure 4 illustrates the evolution of new companies by their legal structure distinguishing between joint stock companies (modern legal forms) and partnership companies (traditional legal forms). Partnership companies predominated among new

[12] Furthermore, it should not be overlooked that we are analyzing the effect of the average size of new firms, so our estimation does not capture the economic impact of the growth in the size of those already established.

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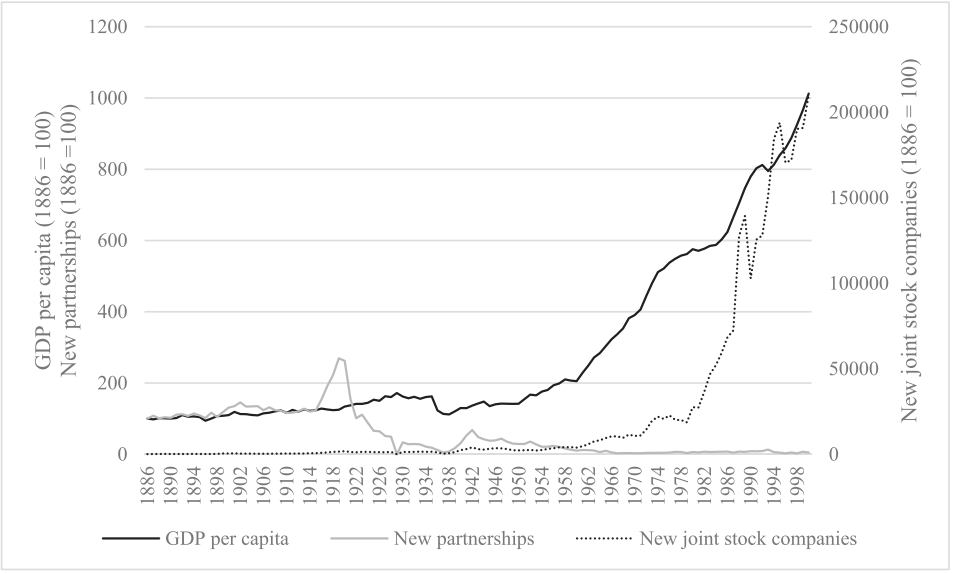

(1886–2000)

Figure 4. Evolution of GDP per capita and number of new companies, by legal forms, in Spain (1886–2000). *Source*: Own elaboration based on GDP per capita data from Prados de la Escosura (2003) and new partnerships and joint stock companies' data from Carreras and Tafunell (2005).

businesses until 1923 and maintained a significant share in the Spanish business structure until the end of the Civil War. However, since then, joint stock companies have dominated the business landscape in Spain: by 1955, 90% of newly incorporated companies had adopted modern legal forms, and this figure exceeded 98% by 1963. This finding aligns with the observed increase in the average size of newly established companies, as bigger firms tend to adopt modern legal forms (Martín Aceña, 1993).

Thus, what Figure 4 shows is that joint stock companies have driven economic growth in Spain, while partnership companies have played a marginal role in the national economy since the 1950s. This observation is further supported by the OLS estimation results of Equation (5), presented in the first two columns of Table 7, which show a positive and significant effect of joint stock companies on GDP per capita and labor productivity growth, and a null effect for partnership companies. The VAR model and the Granger causality test, reported in Tables 8 and 9, respectively, reinforce these findings. Thus, the empirical analysis initially supports our H3, suggesting that the legal form of companies has influenced economic growth in Spain. However, when we divide the sample into three sub-periods: 1886–1923, 1924–1955, and 1956–2000, the results, shown in columns 3–8 of Table 7, reveal that, while partnership companies have not boosted economic growth in any of these periods, joint stock companies reported a positive effect only in the third period.[13] Therefore, although our findings are consistent with the interpretation of joint stock companies as an indicator of Spain's economic modernization (Guinnane and Martínez-Rodríguez, 2018; Jiménez Araya, 1974; Tafunell, 2005), they do not suggest that the legal form of firms has

[13] The chosen periodization is based on the observed trends in the data. The break in 1923 reflects the beginning of a downward trend in the formation of new partnership companies, after atypical fluctuations during the war and postwar years. Meanwhile, the turning point in 1955 reflects the period when the creation of partnership companies becomes residual.

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Table 7. OLS estimation results of Equation (5)

	GDP per capita 1886–2000	*Labor productivity* 1886–2000	*GDP per capita* 1886–1923	*Labor productivity* 1886–1923	*GDP per capita* 1924–1955	*Labor productivity* 1924–1955	*GDP per capita* 1956–2000	*Labor productivity* 1956–2000
Partnership companies	0.003 (0.003)	0.004 (0.005)	0.073 (0.067)	0.069 (0.068)	−0.002 (0.043)	−0.06 (0.036)	0.006 (0.005)	0.004 (0.005)
Joint-stock companies	0.030*** (0.012)	0.033*** (0.013)	−0.041 (0.027)	−0.042 (0.028)	−0.082 (0.063)	−0.067 (0.055)	0.032*** (0.011)	0.035** (0.013)
Physical capital	0.057* (0.032)	0.049 (0.032)	0.085* (0.045)	0.083* (0.046)	0.045 (0.048)	0.039 (0.043)	0.263*** (0.037)	0.213*** (0.037)
Labor factor	0.540*** (0.078)	−0.017 (0.109)	3.838** (1.463)	3.608** (1.581)	−5.139 (1.379)	−6.151 (1.416)	0.224** (0.106)	−0.327*** (0.093)
Knowledge capital	0.007** (0.003)	0.007* (0.004)	0.100* (0.055)	0.104* (0.059)	0.015 (0.011)	0.015 (0.009)	0.001 (0.003)	0.003 (0.002)
Human capital	0.169*** (0.048)	0.188*** (0.050)	0.275*** (0.087)	0.276** (0.102)	−0.108 (0.156)	−0.059 (0.141)	0.023 (0.035)	0.103*** (0.034)
Public expenditure	0.187*** (0.034)	0.174*** (0.036)	0.192*** (0.056)	0.197*** (0.058)	−0.098*** (0.029)	−0.091*** (0.027)	0.191*** (0.049)	0.116** (0.049)
Trade openness	0.012 (0.023)	0.006 (0.025)	−0.058* (0.032)	−0.057 (0.034)	0.031 (0.021)	0.029 (0.019)	−0.032 (0.025)	−0.048* (0.027)
R^2	0.749	0.576	0.460	0.412	0.948	0.974	0.878	0.838
Heteroscedasticity correction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Durbin–Watson	2.504	2.461	2.437	2.442	3.007	2.978	1.550	1.564
No. of observations	104	104	37	37	22	22	45	45

Notes: Robust standard errors are shown in parentheses. Asterisks denote statistical robustness:
* at the 10% level, ** at the 5% level, and *** at the 1% level.

Table 8. Estimation results of VAR model (6) including variables PC and JSC

	GDP per capita 1886–2000	*Joint-stock companies* 1886–2000	*Labor productivity* 1886–2000	*Joint-stock companies* 1886–2000
GDP per capita	−0.155 (0.101)	0.326 (0.512)	–	–
Labor productivity	–	–	−0.122 (0.099)	0.286 (0.506)
Partnership companies	−0.007 (0.013)	0.015 (0.065)	−0.004 (0.013)	0.019 (0.065)
Joint-stock companies	0.052** (0.022)	0.046 (0.112)	0.047** (0.022)	0.048 (0.112)
Physical capital	0.018 (0.032)	−0.156 (0.161)	0.013 (0.032)	−0.161 (0.162)
Labor factor	0.628** (0.251)	−0.105 (1.269)	0.055 (0.248)	−0.657 (1.263)
Knowledge capital	0.013 (0.009)	−0.033 (0.049)	0.009 (0.010)	−0.037 (0.049)
Human capital	0.159** (0.066)	0.133 (0.335)	0.199*** (0.064)	0.188 (0.324)
Public expenditure	0.084** (0.040)	−0.209 (0.202)	0.079** (0.039)	−0.208 (0.202)
Trade openness	0.025 (0.027)	0.045 (0.135)	0.025 (0.027)	0.049 (0.135)
No. of observations	102	102	102	102

Note: *R* and *H* are considered exogenous variables. First differences were applied to ensure stationarity of the variables. Robust standard errors are shown in parentheses. Asterisks denote statistical robustness:
* at the 10% level, ** at the 5% level, and *** at the 1% level.

determined Spain's economic growth. To that end, we should have found a positive relationship between joint stock companies and economic growth during periods when the presence of partnership companies was not residual; however, the model does not show such results. Although the period 1956–2000 does report a positive and significant coefficient, this is likely because almost all firms created during these years were joint stock companies, meaning that the effect captured reflects entrepreneurship rather than the legal form of the new companies. Thus, we consider that our findings fail to confirm H3.

5. Conclusions

The objective of our paper is to explore the relationship between entrepreneurship and modern economic growth in Spain. To this end, we have assessed the contribution of Spain's entrepreneurship capital to national GDP per capita and labor productivity growth during the period 1886–2000, following an approach inspired by Audretsch and Keilbach (2004). Entrepreneurship capital, measured by the number of start-up firms per million

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Table 9. Granger causality test between joint stock company and economic growth

	GDP per capita 1886–2000	*Labor productivity* 1886–2000	*Joint-stock companies* 1886–2000
GDP per capita	–	–	chi^2 (1) = 0.40 Prob > chi^2 = 0.525
Labor productivity	–	–	chi^2 (1) = 0.32 Prob > chi^2 = 0.571
Joint-stock companies	chi^2 (1) = 5.48 Prob > chi^2 = 0.019	chi^2 (1) = 4.57 Prob > chi^2 = 0.033	–
No. of observations	102	102	102

Note: Granger causality tests calculated from the VAR model (6) including variables *PC* and *JSC*.

inhabitants, is understood as the country's endowment with factors conducive to the creation of new businesses. This study addresses a gap in the literature, as the long-term impact of entrepreneurship on economic growth in Spain remains largely unexplored.

In addition to analyzing the effect of entrepreneurship capital on economic output, our research extends beyond business creation by exploring the evolving profile of national business dynamics. Specifically, we examine the size and legal form of start-up firms over time. This approach enables us to contribute to well-established debates in Spanish economic historiography regarding the limitations of entrepreneurship as a factor contributing to slow growth during the 19th and 20th centuries. To our knowledge, our study is the first attempt to test econometrically the long-term contribution of entrepreneurship to Spain's economic growth.

Although our approach is primarily quantitative and econometric, following the prevailing method in economic studies that analyzes the link between entrepreneurship and economic performance, we contribute by offering a long-term historical perspective where time-series data are contextualized within the country's economic history. Echoing Landes *et al.* (2010), we agree that "the importance of history to entrepreneurship cannot be underestimated" (p. vii), and contend that the application of a long-term, historical lens to quantitative studies is crucial to enrich conclusions regarding the dynamics of entrepreneurship and its relationship to economic growth.

According to our results, a 1% increase in entrepreneurship growth generates approximately a 0.05% increase in Spain's economic growth when analyzing the period 1886–2000. Comparing this finding with other independent variables included in our model highlights the importance of entrepreneurial capital for Spanish long-term growth: its impact is similar to that of physical capital and higher than that of knowledge capital and trade openness. So, our main result regarding the link between entrepreneurship and Spanish economic performance contributes to challenging the traditional assumption that the entrepreneurial factor has hindered the country's economic growth. Moreover, the VAR model and the Granger causality tests employed support the directionality we propose between entrepreneurship and economic growth. This result is of great importance since Box *et al.* (2014), the only study that had previously analyzed the long-term causality between entrepreneurship and growth, did not find such a relationship for Sweden during the period 1850–2000.

A distinctive characteristic of Spain is the relative scarcity of large companies and the prevalence of SMEs. For some authors, particularly Tortella, this evidences the lack of

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entrepreneurial initiative. For others, like Carreras and Tafunell, the underlying causes include a relatively small domestic market size and specific institutional factors. The traditional importance of business groups in our country has also been associated with the relative weakness of large companies. Regarding the association between the average size of new businesses and economic growth, we have not found a significant relationship for the whole period. While this is likely influenced by the scarcity of large companies in Spain, our result does not support the argument that the lack of such firms has been a determining factor in the country's economic backwardness. This does not mean, however, that the establishment of large companies did not play a crucial role in Spanish economic growth at some stages of the 20th century. As shown in the analysis, we found a certain positive correlation between the new business size and GDP per capita for the period 1960–1975. Although the effect of these years is diluted in a long-term view, it should not hide the importance of new companies' size in explaining the period of highest GDP per capita growth in Spain.

Finally, this paper questions the hypothesis of Guinnane and Martínez-Rodríguez, Jiménez Araya, and Tafunell regarding the importance of the adoption of modern legal forms—such as a corporation or limited company—for Spanish economic growth during the 20th century. Our study has identified a positive correlation between modern legal forms and Spain's economic growth between 1886 and 2000, indicating that joint stock companies have constituted a valuable indicator of the country's economic development. However, our findings do not support the interpretation that the slow diffusion of joint stock companies has been a factor contributing to Spain's economic backwardness, since no significant effect of this legal form on economic growth is observed prior to 1956. Moreover, the positive and significant effect observed for the period 1956–2000 seems to capture the impact of entrepreneurship rather than the influence of the legal form.

This research has one crucial limitation, which relates to our approach to measuring entrepreneurship, specifically its focus on the creation of new businesses. While this decision was made to build a consistent and long-term dataset, it means that we cannot consider the impact of all the innovative activities occurring within established firms and also overlook the role of individual entrepreneurs. Therefore, we cannot assess the *quality* of entrepreneurial activity in Spain, but only its *quantity*. In addition, using data on "new firms" instead of the "stock of firms" prevents us from capturing the impact on Spain's economic growth of the increase in size and change in legal structure of already established companies. However, this methodological choice ensures consistency with the Audretsch and Keilbach (2004) framework and aligns with interpretations of entrepreneurship in Spain found in Valdaliso (2005), Tortella *et al.* (2008), or García Ruiz and Pérez-Amaral (2013).

Our work opens several avenues for future research, particularly the opportunity to conduct long-term comparative studies that can better contextualize the case of Spain. It also paves the way for measuring the long-term impact of different types of entrepreneurs, considering factors such as their qualifications, profiles, or sectors of activity, on Spain's economic performance. The challenge of constructing long-term datasets could be addressed by employing, for instance, prosopography methods. In any case, we hope that our work will inspire more long-term studies that allow Economic History to contribute to the debates on the relationship between entrepreneurship and economic growth.

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References

Acs Z.J. (2006) How is entrepreneurship good for economic growth? *Innovations: Technology, Governance, Globalization* 1(1), 97–107. https://doi.org/10.1162/itgg.2006.1.1.97

Acs Z.J. and Armington C. (2006) *Entrepreneurship, Geography, and American Economic Growth*. Cambridge: Cambridge University Press.

Acs Z.J., and Audretsch D.B. (2003) Handbook of entrepreneurship research. Boston: Springer.

Acs Z.J., Audretsch D.B., Braunerhjelm P. and Carlsson B. (2005) Growth and entrepreneurship: an empirical assessment. CERP Working Paper 5409.

Acs Z.J., Audretsch D.B., Braunerhjelm P. and Carlsson B. (2012) Growth and Entrepreneurship. *Small Business Economics* 39, 289–300. https://doi.org/10.1007/s11187-010-9307-2

Acs Z.J., Desai S. and Hessels J. (2008) Entrepreneurship, economic development and institutions. *Small Business Economics* 31, 219–234. https://doi.org/10.1007/s11187-008-9135-9

Acs Z.J., Estrin S., Mickiewicz T. and Szerb L. (2018) Entrepreneurship, institutional economics, and economic growth: an ecosystem perspective. *Small Business Economics* 51, 501–514. https://doi.org/10.1007/s11187-018-0013-9

Álvaro-Moya A., Fellman S. and Puig N. (2020) Business history special issue on foreign investment and the development of entrepreneurial and managerial capabilities in host economies. *Business History* 62(7), 1063–1078. https://doi.org/10.1080/00076791.2020.1726320

Amorós J.E. and Cristi O. (2008) Longitudinal analysis of entrepreneurship and competitiveness dynamics in Latin America. *International Entrepreneurship and Management Journal* 4(4), 381–399. https://doi.org/10.1007/s11365-008-0082-3

Amorós J.E., Cristi O. and Minniti M. (2009) Driving forces behind entrepreneurship: differences on entrepreneurship rate level and its volatility across Countries. *Frontiers of Entrepreneurship Research* 29(16), 1–15.

Amorós J.E., Cristi O. and Minniti M. (2011) Entrepreneurial volatility: a cross-country study. *Annual Proceedings of the Wealth and Wellbeing of Nations* 3, 159–176.

Audretsch D.B. (2007) Entrepreneurship capital and economic growth. *Oxford Review of Economic Policy* 23(1), 63–78. https://doi.org/10.1093/oxrep/grm001

Audretsch D.B., Bönte W. and Keilbach M. (2008) Entrepreneurship capital and its impact on knowledge diffusion and economic performance. *Journal of Business Venturing* 23(6), 687–698. https://doi.org/10.1016/j.jbusvent.2008.01.006

Audretsch D.B. and Keilbach M. (2004) Entrepreneurship capital and economic performance. *Regional Studies* 38(8), 949–959. https://doi.org/10.1080/0034340042000280956

Audretsch D.B., Keilbach M. and Lehman E.E. (2006) *Entrepreneurship and Economic Growth*. Oxford: Oxford University Press.

Audretsch D.B. and Thurik A.R. (2000) Capitalism and Democracy in the 21st Century: from the Managed to the Entrepreneurial Economy. *Journal of Evolutionary Economics* 10(1), 17–34. https://doi.org/10.1007/s001910050003

Audretsch D.B. and Thurik A.R. (2001) Linking entrepreneurship to growth. STI Working Paper 2001/2 Paris: OECD.

Barlett D. and Dibben P. (2002) Public sector innovation and entrepreneurship: case studies from local government. *Local Government Studies* 28, 107–121. https://doi.org/10.1080/714004159

Baumol W.J. (1968) Entrepreneurship in economic theory. *The American Economic Review* 58(2), 64–71.

Baumol W.J. (1990) Entrepreneurship: productive, Unproductive, and Destructive. *Journal of Political Economy* 98(5), 893–921. https://doi.org/10.1086/261712

Baumol W.J. and Strom R.J. (2007) Entrepreneurship and economic growth. *Strategic Entrepreneurship Journal* 1(3-4), 233–237. https://doi.org/10.1002/sej.26

Binda V. (2013) *The Dynamics of Big Business: Structure, Strategy, and Impact in Italy and Spain*. New York: Routledge.

Binda V. and Colli A. (2013) Changing big business in Italy and Spain, 1973-2003: strategic responses to a new context. *Business History* 53, 14–39. https://doi.org/10.1080/00076791.2011.546658

Bjørnskov C. and Foss N. (2013) How strategic entrepreneurship and the institutional context drive economic growth. *Strategic Entrepreneurship Journal* 7(1), 50–69. https://doi.org/10.1002/sej.1148

Bosma N., Content J., Sanders M. and Stam E. (2018) Institutions, entrepreneurship, and economic growth in Europe. *Small Business Economics* 51, 483–499. https://doi.org/10.1007/s11187-018-0012-x

Box M., Lin X., and Gratzer K. (2014) Linking entrepreneurship and economic growth in Sweden, 1850–2000. *Contemporary Entrepreneurship: Multidisciplinary Perspectives on Innovation and Growth* 1, 31–49.

Callejón M. and Segarra A. (1999) Business dynamics and efficiency in industries and regions: the Case of Spain. *Small Business Economics* 13, 253–271. https://doi.org/10.1023/A:1008015317323

Carree M.A. and Thurik A.R. (1999) Industrial structure and economic growth In Audretsch DB and Thurik AR (eds), *Innovation, Industry Evolution and Employment*, Cambridge: Cambridge University Press, 86–110.

Carree M.A. and Thurik A.R. (2008) The lag structure of the impact of business ownership on economic performance in OECD Countries. *Small Business Economics* 30, 101–110. https://doi.org/10.1007/s11187-006-9007-0

Carree M.A. and Thurik A.R. (2010) The impact of entrepreneurship on economic growth In Acs ZJ and Audretsch DB (eds), *Handbook of Entrepreneurship Research*, New York: Springer, 557–594.

Carreras A. (1996) La gran empresa en la españa contemporánea: entre El Mercado Y El Estado In Comín F and Aceña PM (eds), *La Empresa En la Historia de España*, Madrid: Civitas, 73–92.

Carreras A. and Tafunell X. (1993) La gran empresa en España (1917-1974). Una primera aproximación. *Revista de Historia Industrial* 3, 127–175.

Carreras A. and Tafunell X. (1996) La gran empresa en la españa contemporánea: entre El Mercado Y El Estado In Comín F and Aceña PM (eds), *La Empresa En la Historia de España*, Madrid: Civitas, 73–90.

Carreras A. and Tafunell X. (1999) Spain: big Manufacturing Firms between State and Market, 1917-1990 In Chandler AD, Amatori F and Hikino T (eds), *Big Business and the Wealth of Nations*, Cambridge: Cambridge University Press, 277–304.

Carreras A. and Tafunell X. (2005) *Estadísticas Históricas de España, Siglos XIX-XX*. Bilbao: Fundación BBVA.

Carreras A., Tafunell X. and Torres E. (2003) Business History in Spain In Amatori F and Jones G (eds), *Business History around the World*, Cambridge: Cambridge University Press, 232–254.

Caruana L., Larrinaga C. and Matés J.M. (2011) La pequeña y mediana empresa en la edad de oro de la economía española: estado de la cuestión. *Investigaciones de Historia Económica* 7(2), 322–333. https://doi.org/10.1016/j.ihe.2010.10.001

Cassis Y., Colli A. and Schröter H. (2016) *The Performance of European Business in the Twentieth Century*. Oxford: Oxford University Press.

Castro R. (2007) Historia de una reconversión silenciosa. El capital francés en España, c. 1800-1936. *Revista de Historia Industrial—Industrial History Review* 16(33), 81–118.

Chandler A. (1977) *The Visible Hand*. Cambridge: Belknap Press.

Chandler A. (1990) *Scale and Scope. the Dynamics of Industrial Capitalism*. Cambridge: Harvard University Press.

Chandler A., Amatori F. and Hikino T. (1997) *Big Business and the Wealth of Nations*. Cambridge: Cambridge University Press.

Comín F. (2008) Public enterprises in Spain: historical cycles and privatizations. *Análise Social* 18(4), 693–720.

Comín F. and Martín Aceña P. (1991) *Historia de la Empresa Pública En España*. Madrid: Espasa Calpe.

Comín F. and Martín Aceña P. (1996) Rasgos históricos de las empresas en España: un panorama. *Revista de Economía Aplicada* 4(12), 75–123.

De Meulemeester J. and Rochat D. (1995) A causality analysis of the link between higher education and development. *Economics of Education Review* 14, 351–361. https://doi.org/10.1016/0272-7757(95)00015-C

Drucker P.F. (1985) *Innovation and Entrepreneurship: Practice and Principles*. New York: Harper & Row.

Easterly W. (2001) *The Elusive Quest for Growth: Economists' Adventures and Misadventures in the Tropics*. Cambridge: MIT Press.

Erken H., Donselaar P. and Thurik R. (2018) Total factor productivity and the role of entrepreneurship. *The Journal of Technology Transfer* 43(6), 1493–1521. https://doi.org/10.1007/s10961-016-9504-5

Feldman M.P. and Audretsch D.B. (1999) Innovation in cities: science based diversity, specialization and localized competition. *European Economic Review* 43, 409–429. https://doi.org/10.1016/S0014-2921(98)00047-6

Fernández-Pérez P. and Puig N. (2004) Knowledge and training in family firms of the European Periphery: Spain in the eighteenth to twentieth centuries. *Business History* 1, 79–99. https://doi.org/10.1080/00076790412331270129

García Ruiz J.L. (2016) Education and Entrepreneurship in Twentieth-Century Spain: an Overview In García-Ruiz JL and Toninelli PA (eds), *The Determinants of Entrepreneurship: Leadership, Culture, Institutions*, New York: Routledge, 161–182.

García Ruiz J.L. and Pérez-Amaral T. (2013) Some empirical aspects of entrepreneurship in Twentieth-Century Spain In Tortella G and Quiroga G (eds), *Entrepreneurship and Growth: An International Historical Perspective*, London: Palgrave Macmillan, 115–132.

García Ruiz J.L. and Toninelli P.A. (2016) *The Determinants of Entrepreneurship: Leadership, Culture, Institutions*. New York: Routledge.

Geweke J. (1984) Inference and causality in economic time series models In Griliches Z and Intriligator MD (eds), *Handbook of Econometrics*, Amsterdam: Elsevier Science Publisher, 1101–1144.

Gil-López Á., Zozimo R., San Román E. and Jack S. (2016) At the Crossroads. Management and Business History in Entrepreneurship Research. *Journal of Evolutionary Studies in Business* 2(1), 156–200.

González-Pernía J.L. and Peña-Legazkue I. (2015) Export-oriented entrepreneurship and regional economic growth. *Small Business Economics* 45(3), 505–522. https://doi.org/10.1007/s11187-015-9657-x

Guinnane T., Harris R., Lamoreaux N.R. and Rosenthal J.L. (2007) Putting the Corporation in its Place. *Enterprise and Society* 8(3), 687–729. https://doi.org/10.1093/es/khm067

Guinnane T. and Martínez-Rodríguez S. (2018) Choice of enterprise form: Spain, 1886-1936. *Law, Economics and Organization* 34(1), 1–26. https://doi.org/10.1093/jleo/ewx015
Hansmann H. and Kraakman R. (2000) The essential role of organizational law. *Yale Law Journal* 110, 387–440. https://doi.org/10.2307/797521
Helpman E. (2004) *The Mystery of Economic Growth*. Cambridge MA: Harvard University Press.
Hernández-Barahona J., GIL-López Á., and San Román E. (2025) Las dinámicas empresariales del crecimiento económico de Madrid (1886-1935). *Investigaciones de Historia Económica* 20(3), 26–41. doi:10.33231/j.ihe.2024.03.003.
Holtz-Eakin D. and Kao C. (2003) Entrepreneurship and economic growth: the proof is in the productivity. Syracuse University Center for Policy Research Working Paper 50.
Jacobs J. (1969) *The Economy of Cities*. New York: Vintage.
Jiménez Araya T. (1974) Formación de capital y fluctuaciones económicas. Materiales para el estudio de un indicador: creación de Sociedades mercantiles en españa entre 1886 y 1970. *Hacienda Pública Española* 27, 137–185.
Kim J., Castillejos-Petalcorin C., Park D., Jinjarak Y., Quising P. and Tian S. (2022) Entrepreneurship and economic growth: a cross section empirical analysis. Adb Background Paper, WPS220399 2.
Klein P., Mahoney J., Mcgahan A. and Pitelis C. (2010) Towards a theory of public entrepreneurship. *European Management Review* 7(1), 1–15. https://doi.org/10.1057/emr.2010.1
Knight F. (1921) *Risk, Uncertainty and Profit*. New York: Harper and Row.
Landes D.S., Mokyr J. and Baumol W.J. (2010) *The Invention of Enterprise. Entrepreneurship from Ancient Mesopotamia to Modern Times*. Princeton: Princeton University Press.
Lucas R. (1988) On the mechanics of economic development. *Journal of Monetary Economics* 22, 3–42. https://doi.org/10.1016/0304-3932(88)90168-7
Lucas R. (1993) Making a miracle. *Econometrica* 61, 251–272. https://doi.org/10.2307/2951551
Maluquer De Motes J. (1999) *España En la Crisis de 1898: De la Gran Depresión a la Modernización Económica Del Siglo XX*. Barcelona: Península.
Martín M., Garrués J. and Hernández S. (2003) *El Registro Mercantil: Una Fuente Para la Historia Económica*. Granada: Universidad de Granada.
Martín Aceña P. (1993) La Creación de Sociedades en Madrid (1830-1848): un análisis del Primer Registro Mercantil. Fundación Empresa Pública, Working Paper 9303.
Massón J. (2007) The impact of entrepreneurship capital on Spanish's labor productivity and economic growth. Universidad Autónoma de Barcelona MPRA Paper 4073.
Myszczyszyn J. (2020) The long-run relationships between number of patents and economic growth. *European Research Studies* 23(3), 548–563. https://doi.org/10.35808/ersj/1654
North D. (1990) *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.
North D. (2005) *Understanding the Process of Economic Change*. Princeton: Princeton University Press.
O'kean J.M., Congregado E. and Menudo J.M. (2006) Tejido empresarial y crecimiento regional. *Colección Mediterráneo Económico: Un Balance Del Estado de Las Autonomías* 1, 323–339.
Peña J.I. (1990) Problemas de homogeneidad en modelos de series temporales. *Estadística Española* 32(124), 417–438.
Prados de la Escosura L. (2003) *El Progreso Económico de España: 1850-2000*. Madrid: Fundación BBVA.
Prados de la Escosura L. (2007) Growth and structural change in Spain, 1850–2000: a European Perspective. *Revista de Historia Económica/Journal of Iberian and Latin American Economic History* 25(1), 147–181. https://doi.org/10.1017/S0212610900000082
Prados de la Escosura L., Rosés J.R. and Sanz-Villaroya I. (2011) Economic reforms and growth in Franco's Spain. *Revista de Historia Económica/Journal of Iberian and Latin American Economic History* 30(1), 45–89. https://doi.org/10.1017/S0212610911000152
Prieger J.E., Bampoky C., Blanco L.R. and Liu A. (2016) Economic growth and the optimal level of entrepreneurship. *World Development* 82, 95–109. https://doi.org/10.1016/j.worlddev.2016.01.013
Puig N. and Álvaro-Moya A. (2015) La huella del capital extranjero en España: un análisis comparado. *Revista de Historia Industrial* 58, 249–285.
Puig N. and Castro R. (2009) Patterns of international investment in Spain, 1850–2005. *Business History Review* 83(3), 505–537. https://doi.org/10.1017/S0007680500002981
Rico P. and Cabrer-Borrás B. (2019) Entrepreneurial capital and productive efficiency: the Case of the Spanish Regions. *Technological and Economic Development of Economy* 25(6), 1363–1379. https://doi.org/10.3846/tede.2019.10549
Romer P.M. (1986) Increasing returns and long-run growth. *Journal of Political Economy* 94, 1002–1037. https://doi.org/10.1086/261420
Romer P.M. (1990) Capital, labor, and productivity. *Brookings papers on economic activity. Microeconomics* pp. 337–367.

Rosenberg N. and Birdzell L.E. (1986) *How the West Grew Rich: The Economic Transformation of the Industrial World*. New York: Basic Books.
Sáez-García M.A. (2017) Business and state in the development of the steel industry in Spain and Italy (c. 1880–1929). *Business History* 59(2), 159–178. https://doi.org/10.1080/00076791.2016.1172570
Salas-Fumás V. and Sánchez-Asin J. (2010) Calidad del recurso emprendedor y productividad en España. *El Trimestre Económico* 77(307), 719–757. https://doi.org/10.20430/ete.v77i307.452
San Román E., Puig N. and Gil-López Á. (2023) German capital and the development of the Spanish hotel industry (1950s-1990s): a Tale of two strategic alliances. *Business History* 65(4), 762–786. https://doi.org/10.1080/00076791.2020.1821658
Schnellenbach J. (2007) Public entrepreneurship and the economics of reform. *Journal of Institutional Economics* 3, 183–202. https://doi.org/10.1017/S1744137407000641
Schumpeter J.A. (1928) The Instability of Capitalism. *The Economic Journal* 38(151), 361–386. https://doi.org/10.2307/2224315
Schumpeter J.A. (1934) *The Theory of Economic Development*. Cambridge, MA: Harvard University Press.
Schumpeter J.A. (1942) *Capitalism, Socialism and Democracy*. New York: Harper and Row.
Schumpeter J.A. (1949) Economic theory and entrepreneurial history. In Wohl RR (ed.), *Change and the Entrepreneur: Postulates and the Patterns for Entrepreneurial History*, Cambridge, MA: Harvard University Press, 131–142.
Shane S. (2000) Prior knowledge and the discovery of entrepreneurial opportunities. *Organization Science* 11(4), 448–469. https://doi.org/10.1287/orsc.11.4.448.14602
Shane S.A. (2003) *A General Theory of Entrepreneurship: The Individual-Opportunity Nexus*. Northampton: Edward Elgar.
Shane S.A. and Venkataraman S. (2000) The promise of entrepreneurship as a field of research. *Academy of Management Review* 25(1), 217–226.
Sluyterman K. and Westerhuis G. (2016) International varieties of capitalism: the case of Western Europe In Jones B and Tadajewski M (eds), *The Routledge Companion to Business History*, London: Routledge, 234–252.
Solow R.M. (1956) A contribution to the theory of economic growth. *Quarterly Journal of Economics* 70, 65–94. https://doi.org/10.2307/1884513
Stoica O., Roman A. and Rusu V. (2020) The Nexus between Entrepreneurship and Economic Growth: a Comparative Analysis on Groups of Countries. *Sustainability* 12(3), 1–19. https://doi.org/10.3390/su12031186
Tafunell X. (2005) Bolsa Y Empresa In Carreras A and Tafunell X (eds), *Estadísticas Históricas de España, Siglos XIX-XX*, Bilbao: Fundación BBVA, 707–834.
Tahir M. and Burki U. (2023) Entrepreneurship and Economic Growth: evidence from the Emerging BRICS Economies. *Journal of Open Innovation: Technology, Market, and Complexity* 9(2), 1–7. https://doi.org/10.1016/j.joitmc.2023.100088
Torres E. (1996) Funciones empresariales, grupos de interés y política económica en la Restauración. el empresario vasco Ramón de la sota In Comín F and Aceña PM (eds), *La Empresa En la Historia de España*, Madrid: Civitas, 423–441.
Torres E. (2000) *Los 100 Empresarios Españoles Del Siglo XX*. Madrid: LID.
Torres E. (2003) La Empresa. In Barciela C (ed.), *Autarquía Y Mercado Negro*, Barcelona: Crítica.
Tortella G. (1994) Patterns of economic retardation and recovery in South-Western Europe in the nineteenth and twentieth centuries. *Economic History Review* 47, 1–21. https://doi.org/10.2307/2598218
Tortella G. (1996) La Iniciativa Empresarial, Factor Escaso En la España Contemporánea In Comín F and Aceña PM (eds), *La Empresa En la Historia de España*, Madrid: Civitas, 49–60.
Tortella G. (2000a) Prólogo. In Torres E (dir.), *Los 100 Empresarios Españoles Del Siglo XX*, Madrid: LID.
Tortella G. (2000b) *The Development of Modern Spain: An Economic History of the Nineteenth and Twentieth Centuries*. Cambridge, M.A: Harvard University Press.
Tortella G., García Ruiz J.L., Ortiz Villajos J.M. and Quiroga G. (2008) *Educación, Instituciones Y Empresa. Los Determinantes Del Espíritu Empresarial*. Madrid: Academia Europea de Ciencias y Artes.
Tortella G. and Quiroga G. (2013) *Entrepreneurship and Growth: An International Historical Perspective*. London: Palgrave McMillan.
Tortella G., Quiroga G. and Moral-Arce I. (2011) ¿El empresario nace o se hace? Educación y empresarialidad en la España contemporánea. *Revista de Historia Económica/Journal of Iberian and Latin American Economic History* 29(1), 123–153. https://doi.org/10.1017/S0212610910000248
Tortella G., Quiroga G. and Moral-Arce I. (2013) A tale of four countries: Entrepreneurs and entrepreneurship in England, France, Scotland and Spain: a comparative approach. In Tortella G and Quiroga G (eds), *Entrepreneurship and Growth: An International Historical Perspective*, London: Palgrave Macmillan, 19–45.
Tortella G., Quiroga G. and Moral-Arce I. (2016) Entrepreneurship: a comparative approach In García-Ruiz JL and Toninelli PA (eds), *The Determinants of Entrepreneurship*, New York: Routledge, 81–104.

Trullén J. (2006) Distritos industriales Marshallianos y sistemas locales de gran empresa en el diseño de una nueva estrategia territorial para el crecimiento de la productividad en la economía española. *Economía Industrial* 359, 95–112.
Urbano D., Aparicio S. and Audretsch D. (2019) Twenty-five Years of Research on Institutions, Entrepreneurship, and Economic Growth: what has been Learned? *Small Business Economics* 53, 21–49.
Valdaliso J.M. (2005) El espíritu emprendedor en españa: un análisis histórico In Cuervo Á and Sastre MA (eds), *La Empresa Y El Espíritu Emprendedor de Los Jóvenes*, Madrid: Ministerio de Educación y Ciencia de España, 115–148.
Valdaliso J.M. and García Ruiz J.L. (2013) El espíritu empresarial en la historia económica española. *Revista de Historia Industrial* 51, 15–18.
Valliere D. and Peterson R. (2009) Entrepreneurship and economic growth: evidence from emerging and developed countries. *Entrepreneurship & Regional Development* 21(5-6), 459–480. https://doi.org/10.1080/08985620802332723
Van Stel A.J. (2006) *Empirical Analysis of Entrepreneurship and Economic Growth*. New York: Springer.
Van Stel A.J., Carree M. and Thurik R. (2005) The effect of entrepreneurial activity on national economic growth. *Small Business Economics* 24, 311–321. https://doi.org/10.1007/s11187-005-1996-6
Venkataraman S. (1997) The Distinctive Domain of Entrepreneurship Research. *Advances in Entrepreneurship, Firm Emergence and Growth* 3(1), 119–138.
Wennekers S. and Thurik R. (1999) Linking entrepreneurship and economic growth. *Small Business Economics* 13, 27–56. https://doi.org/10.1023/A:1008063200484
Wong P.K., Ho Y.P. and Autio E. (2005) Entrepreneurship, innovation and economic growth: evidence from GEM Data. *Small Business Economics* 24, 335–350. https://doi.org/10.1007/s11187-005-2000-1

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