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Analysis of economic growth through the context conditions that allow entrepreneurship

Roberto Cervelló-Royo[1] · **Carlos Devece**[2] · **Juan J. Lull**[2]

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Abstract

The literature that recognizes the entrepreneurial function as a fundamental factor in regions' and countries' growth abounds. When studying the macroeconomic conditions that favor entrepreneurship, most studies analyze the problem from an organizational level. This article assumes the value of entrepreneurship as a mediating element in economic growth. It analyzes the most relevant legal and macroeconomic conditions that improve the suitable adjustment of entrepreneurial initiatives to the demands and available resources of a given economy. These conditions are not analyzed strictly from an economic perspective but in terms of their impact on the entrepreneurial function. To validate our hypotheses, a qualitative methodology focused on Latin American countries is used to reduce the heterogeneity of the cultural and historical context of the studied cases. The results reveal that low or moderate inflation, together with investment freedom and low tax burden, are the most determining factors of economic growth in Latin America.

Keywords Entrepreneurship · Macroeconomic conditions · Economic growth · Fuzzy-set qualitative comparative analysis · Latin America

JEL classification L26 · O11

✉ Juan J. Lull
jualulno@doe.upv.es

Roberto Cervelló-Royo
rocerro@esp.upv.es

Carlos Devece
cdevece@upvnet.upv.es

[1] Economics and Social Sciences Department, Universitat Politècnica de València, Camí de Vera s/n, Valencia 46022, Spain

[2] Business Organization Department, Universitat Politècnica de València, Camí de Vera s/n, Valencia 46022, Spain

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1 Introduction

Regions and countries' economic growth has always been a central element in governments' economic policies and the study of academics (Acs and Szerb 2007; Casares and Salazar 2023; Easterly and Rebelo 1993). All economic schools have addressed the issue with different proposals and models (Brock and Taylor 2005; Hahn and Matthews 1964; Lewis 2003; Mankiw et al. 1992). However, the variety and complexity of the variables involved in the problem and the disparity of economic, legal and historical contexts make it difficult to completely refute or empirically validate any theory as an infallible recipe for economic growth. By recognizing this difficulty and the multitude of existing approaches that address the issue, this research is based on the entrepreneurial function as a fundamental element of economic growth (Acs 2006; Singh and Ogbolu 2015; Stel et al. 2005). Since Schumpeter (1934), innovation and entrepreneurship have long since been seen as key components of economic growth. According to Schumpeter, the realization of innovations is the only function that is fundamental in history. Through entrepreneurship, the Pareto optimal of today is replaced with the conditions of tomorrow.

Multiple studies have focused on analyzing the importance of the entrepreneurial function in economic growth (Vyas and Vyas 2019). Moritz et al. (2023) state, countries view entrepreneurship as an essential driver of economic growth and recovery. Based on this premise of the importance of entrepreneurship, this study analyses the macroeconomic factors that lead the most to the entrepreneurial function and will, therefore, indirectly impact the country's economic growth. Therefore, the research problem of this study is to theoretically analyze which macroeconomic conditions favor entrepreneurial success, and to empirically test the sufficient and necessary combinations of these conditions for economic growth (Hall and Sobel 2008; Boettke and Coyne 2009; Nițu-Antonie et al. 2017; Tleuberdinova et al. 2021).

Given the complexity of the problem, this empirical study analyses only Latin American countries. Latin American countries are characterized by diverse macroeconomic conditions (Carvalho et al. 2022). For instance, regarding property rights, the region under study herein has different legal frameworks and enforcement mechanisms. Labor freedom and investment freedom also have a wide range of values according to the Index of Economic Freedom (Heritage Foundation 2023). Regarding inflation, rates have historically varied in the region, with some countries experiencing higher inflation than others, while central banks have played a critical role in managing inflation through a monetary policy (Calderon and Schmidt-Hebbel 2003). The same variability can be found in economic growth.

Thus, by choosing Latin America, we obtain a reasonably heterogeneous sample in terms of the macroeconomic factors that favor entrepreneurship. At the same time, the sample's historical and cultural base is fairly comparable (Cervelló-Royo et al. 2023). The analyzed data were extracted from the Index of Economic Freedom from 2015 to 2019. This sample, which comprises 17 countries, contains enough cases to apply the fsQCA methodology once the most relevant macroeconomic variables applicable to the path analysis are selected.

2 Literature review

The literature analyzes the relation between entrepreneurship and economic welfare. Over the last 25 years, research has shown that macroeconomic progress may be attributed to entrepreneurship, but there are many challenges as to how entrepreneurship and economic welfare are linked (Neumann 2021).

In the realm of entrepreneurship studies, entrepreneurs are frequently portrayed as individuals who aspire to attain personal autonomy by actively pursuing the realization of their visions and the accomplishment of personal objectives through the establishment of independent ventures (Block et al. 2023). These individuals methodically evaluate a range of options at their disposal, strategically selecting the most suitable alternative in accordance with their clearly defined goals and incorporate foresighted considerations of potential choices (Rapp 2022). Consequently, the promotion of entrepreneurial activities and education holds paramount significance in expediting global economic growth (Anwar et al. 2023).

According to Vyas and Vyas (2019), since 2004 research into the link between entrepreneurship and economic growth has clearly demonstrated how beneficial it is in industrialized nations, and ongoing discussion about this topic indicates that further insights are needed. However, these authors attest to discrepancies in the literature about the proxies adopted to gauge entrepreneurship, as well as the contexts in which this connection has been investigated.

Urbano et al. (2020) highlight the relevance of investigating the elements that influence entrepreneurial activities and contribute to national economic prosperity. Indeed, some authors have identified macroeconomic factors that determine entrepreneurship, such as financial loans, current account deficit (Ersin and Karakeçe 2020), lack of social standards, employment opportunities, and financial sources (Guerrero et al. 2021). Nevertheless, in their comprehensive review of research into organizations, economic growth, and entrepreneurship, Urbano et al. (2019) state that studies on this subject are still lacking, and future research should focus on recognizing how institutions affect entrepreneurial undertakings and how entrepreneurship affects economic growth.

It is obvious that the specific conditions of entrepreneurial actions, in contrast to the general context, are the most relevant antecedents for their success. The activities that characterize entrepreneurship are recognizing, assessing and exploiting business opportunities (Hammerschmidt et al. 2023; Karimi et al. 2016; Shane and Venkataraman 2000). However, these entrepreneurial activities are closely related to the economic context. Therefore, a country's macroeconomic conditions may determine how relevant and how intertwined the antecedents of entrepreneurship are (Devece et al. 2016). Indeed, the environmental and internal antecedents of entrepreneurship are closely related (Wang et al. 2013).

In order to analyze the effect of the economic and political context on the entrepreneurial function, it is necessary to recognize that this function is very complex and has very different phases, each with its peculiarities. Each economic and political condition will have a different relevance and impact on the phases of the entrepreneurial function (Akinyemi and Adejumo 2018; Aparisi-Torrijo et al. 2023; Canina et al. 2012).

Opportunity recognition is the first phase of the entrepreneurial activity. Academics approach the opportunity recognition concept from different perspectives by considering a diverse array of elements (Vaghely and Pierre-Andre 2010). Active search, alert status and knowledge of markets, customers and technology form the basis of new opportunity recognition (Baron 2006). However, a region's technological development and access to resources are also relevant for entrepreneurs to recognize opportunities. In addition, knowledge of markets and the future price structure of resources and products necessitate currency stability (Schultz 1976). Therefore, the economic context is an essential factor to take into account in this first entrepreneurial step.

Once an opportunity has been identified, the human and financial capital necessary for its implementation must be obtained. Furthermore, the social and economic conditions of a country play a fundamental role in entrepreneurial actions (Khan et al. 2019; Linder et al. 2020). Access to resources under reasonable conditions, and always competing with other activities and enterprises, are necessary for opportunity to materialize. Society creates new needs when old ones are met, and such needs must never be undervalued. Entrepreneurs must direct productive resources toward these new needs. Society demands not only more higher quality products and services but also for such production to be sustainable and for companies to adhere to ethical criteria (Balon et al. 2022; Fatemi et al. 2018; Garcia et al. 2017). Entrepreneurs' role involves obtaining the resources to meet these needs by taking advantage of technological developments (Chopra et al. 2023; Li et al. 2023). Nonetheless, it is the public that pays for sustainable and ethically produced goods and services, and entrepreneurs should always seek their own profit while meeting society's needs (Broccardo et al. 2023; Muldoon et al. 2022).

From a resource dependency perspective, entrepreneurs will be successful when they have access to the required resources (Jenssen 2001). The concept of asset parsimony describes the necessary work to accomplish a business' goals, while incurring the lowest possible cost (Ansoff 1979). Obviously, this means that entrepreneurial activities depend on a region's technological and economic development. In addition to financial capital, the availability of labor, the most universal resource for any activity, is an essential factor (Garzarelli et al. 2008). Once again, a given region's development ensures the presence of professionals in all types of sectors. However, when a labor-intensive activity requires unskilled labor, government regulations may hinder the availability of low-cost workers. Cost and worked hours are influenced by the legal and regulatory structure of a nation's labor market, which includes minimum wage regulations, legislation facilitating layoffs, firing criteria and measurable regulations, which affect costs and worked hours. Other context factors that favor entrepreneurship, such as the number of government regulations and their speed of change (Cai et al. 2023) or government support for entrepreneurial activities in foreign countries (Falahat et al. 2021), are also considered by researchers.

Finally, the implementation and exploitation of an entrepreneurial opportunity can be hindered by several socio-economic factors. The literature highlights business freedom to start a venture as a relevant antecedent for the entrepreneurial function (Akin 2010; Cervelló-Royo et al. 2023). Exploitation of ventures is limited by tax

burden (Bruce et al. 2020) and the protection of the country's property rights (Redford 2020; Torstensson 1994).

If the environment is unsuitable and property rights are not protected, entrepreneurs are likely to prefer investing their resources in secure assets rather than engaging in the development of new economic ventures (Autio et al. 2014; Galindo-Martín et al. 2021; Tomaszewski 2018).

Hence different management theories and entrepreneurship research paradigms incorporate the macroeconomic context to explain how entrepreneurs seek, implement and exploit opportunities. The following section examines how macroeconomic conditions affect growth through the entrepreneurial function and establishes the theoretical basis for the empirical study. The paper identifies the factors that foster entrepreneurial function in countries and assesses the role played by these factors in economic growth.

3 Theoretical background and hypotheses

3.1 The entrepreneurial function as a key factor in economic growth

Any economic growth in a country or region implies resources being used in a way that they were not used before, and resources being used with greater productivity or employed to produce more demanded goods and services. So, profit is higher because their prices are higher in relation to resources consumption. Any of the three options, or a combination of them, implies taking advantage of an economic opportunity. Entrepreneurs channel capital toward opportunities, most of which are created by innovations and technological advances (Galindo-Martín et al. 2023; Ortigueira-Sánchez et al. 2022; Rubio-Andrés 2022). Regardless of whether this opportunity is seized by an individual entrepreneur or by a company through internal entrepreneurship, macroeconomic conditions can limit or favor these entrepreneurial actions (Khanin et al. 2022).

According to Urbano et al. (2019), one of the prevalent theoretical frameworks to analyze the effects of entrepreneurship on economic growth is the Schumpeterian theory (Schumpeter 1934), which states that entrepreneurship encourages innovations that affect economic growth. The most relevant studies cited by these authors to support the hypothesis that entrepreneurship is a key element for both economic growth and development are Audretsch et al. (2015), Bjørnskov and Foss (2013), Bosma et al. (2011), Carree et al. (2007) and Low and Isserman (2015).

One of the basic assumptions of this research is that economic growth is an effect of capitalization on the most profitable businesses and innovations. This continuous search for the most profitable activities is performed by entrepreneurs. The economic conditions that favor entrepreneurship have been widely studied (Dempster and Isaacs 2017).

The remainder of this section analyses these macroeconomic, legal and institutional conditions.

3.2 Access to financial capital

The first condition for seizing an opportunity, primarily if it is based on process innovation or new products or services that require investment, is access to capital. Therefore, for economic growth to occur, the entrepreneur or entrepreneurial organization must have access to capital (Adomako and Ahsan 2022; Ekanayake and Thaver 2021). Any macroeconomic condition that favors domestic savings or access to foreign finance is essential for entrepreneurship and, thus, for economic growth (Schwienbacher 2007). A nation's saving capacity is complex to assess and is subject to many conditions, but the necessary condition for domestic saving is low inflation. It is true that, when faced with high inflation, the stock market may be a suitable option for channeling savings, and also for purchasing real estate. However, the great mass of the population is incentivized to rapidly consume their income instead of generating savings.

In addition to domestic capital, entrepreneurs can also take advantage of foreign savings to launch their initiatives and to capitalize the country, which make it more productive (Thompson and Zang 2023). The main problem for emerging countries is access to this foreign capital. Nevertheless, a country with a low Gross Domestic Product (GDP) per capita with the right context for investment can attain a high growth rate (Borensztein 1998). Moreover, in these countries, investment opportunities are greater, and profitability is higher (Barro 1991; Schilling and Seuring 2023). For access to foreign capital, the financial freedom of the country is a good measure of this variable. In any case, access to financial capital is a necessary condition for the entrepreneurial function to develop and to promote economic growth (Cooper et al. 1994). Thus, we state:

Hypothesis 1 *Entrepreneurs' access to financial capital is positively associated with economic growth, as indicated by the GDP.*

3.3 Economic calculation

All entrepreneurial action is inherently uncertain. Entrepreneurs take calculated risks, and economic development depends on their accuracy and precision in forecasting.

The economic system depends on entrepreneurs' ability to perceive profitable opportunities that others have not yet recognized. The efficiency of market economies depends on the efficient allocation of resources, and entrepreneurs adjust this resource allocation to achieve economic growth in a dynamic environment with continuous changes in technology, tastes and conditions (Kirzner 2019). Successful entrepreneurs will make pure profits, while misjudgment of an opportunity will entail pure losses.

Those who succeed will be reinforced by the market itself and those who err in their calculations will have to cease their venture (Huerta de Soto 2013: 24). For an economy to grow, entrepreneurs must know and correctly foresee the price structure of the production system and make right decisions. Although an entrepreneurial mistake is always punished by the market and resources are redirected to more neces-

sary products and services, this process takes time, and some resources are wasted. Economic growth depends on thousands of individual entrepreneurial decisions, and the distortion and uncertainty produced by inflation hamper the forecasting of the price structure (Bakshi and Chen 1996; Schultz 1976). Moreover, in a globalized economy, domestic inflation makes the price structure much more complex to forecast (Ji 2022).

High inflation makes a company's economic calculation much more uncertain. Changes in the price structures of the factors of production and selling prices, in the difference of which expected profits are based, can undergo significant alterations with high and uncertain inflation. In fact, high inflation creates more significant uncertainty in future prices. Entrepreneurs are strongly influenced by growth expectations, and a distortion in the loan market and interest rates can create false market demand forecasts (Silge and Wöhrmann 2021). Therefore, the economic calculation for assessing the viability of a business, essential for entrepreneurs' success, is seriously affected by high inflation. So, it follows that:

Hypothesis 2 *Inflation hinders the evaluation of the economic viability of entrepreneurial activities. Thus, inflation reduces economic growth, as indicated by the GDP.*

3.4 Access to resources

Entrepreneurs are the economic actors who create new firms, and whose expertise in resource allocation fosters innovation (Baumol 1993). A new venture must marshal resources and successfully coordinate them to make the potential benefit of these opportunities. Economic agents must generally obtain resources at the lowest possible cost. However, entrepreneurs do not possess all the resources needed to exploit market opportunities (Alvarez and Barney 2004). The viability of the new venture depends on access to all the necessary resources at an appropriate price.

The labor force is the main factor of production in any society (Ali et al. 2018; Barro 2001; Siddiqui and Rehman 2017). A nation with a more educated and healthier population could provide resources that are sustainable and could foster social and economic progress (Nguyen 2022). Any attempt to compel the labor supply to be restricted or limited will lead to its underutilization as a resource for certain production structures and market conditions (Von Mises 1998). Although there is great heterogeneity and specificity depending on workers' training, experience and skills, it is the nonspecific productive factor necessary in any production process. The impact of human capital on the entrepreneurial function has already been explored (Cooper et al. 1994; Qin and Kong 2021).

Thus, labor market regulations may strongly influence economic development by limiting access to the resource that is most cross-sectional to all sectors, namely the labor market (Blanchard and Giavazzi 2003; Chen et al. 2022). Labor freedom and labor market regulation can influence a country's income, rent distribution and welfare (De Jonge et al. 2000). The labor freedom aspect of economic freedom comprises several elements that pertain to the legal and regulatory framework governing labor market. This framework includes minimum wage regulations, laws that make

dismissals more flexible, and the regulations regarding hiring and worked hours. Thus, we hypothesize the following:

Hypothesis 3 *Labor freedom facilitates entrepreneurs' access to human capital. Thus, labor freedom increases economic growth, as indicated by the GDP.*

3.5 Tax burden

The tax burden is the total amount of taxes levied by the government (Bjørnskov and Foss 2008). It includes, among others, direct taxes on individual and corporate income, and general taxes, which include any direct or indirect taxes charged by any administration.

There is empirical evidence that tax burden and economic growth have a significant adverse relation (Baiardi et al. 2019; Furceri and Karras 2008). In a meta-analysis that studies the correlation between taxes and economic growth in OECD nations, Alinaghi and Reed (2021) show that higher taxes are associated with lower GDP growth.

The theory that explains these empirical results is twofold. First, only successful entrepreneurial actions can generate growth. Success depends on the margin of factor costs used in production and selling prices. If costs increase due to the State's tax burden, viable opportunities are reduced or become much riskier. Second, the tax burden implies a reduction of firms' saving capacity, and then their capitalization can be affected (Bernheim 2002; Poterba et al. 1987).

These effects of a high tax system are indirectly reflected in a country's growth (Alesina and Rodrik 1994; Braunerhjelm et al. 2021). Empirical studies show that tax policy significantly influences entrepreneurship (Lobont et al. 2023; Wood et al. 2016). Consequently:

Hypothesis 4 *The tax burden on entrepreneurial ventures is negatively associated with economic growth, as indicated by the GDP.*

3.6 Business freedom

Business freedom can be defined as the efficiency of government regulation of entrepreneurship. Business freedom reflects the ability to freely conduct entrepreneurial activities, and to make economic, financial and management decisions (Cebula et al. 2016). Thus, business freedom can be considered a precondition for entrepreneurship (Block et al. 2017). The creation of new ventures can be very complex, and the demonstrated relationship between entrepreneurship and economic growth is forcing many nations to adopt policies to enhance business freedom (Autio et al. 2014; Wong et al. 2005). The more regulations a government imposes on businesses, the more difficult it is for entrepreneurs to create and sustain them (McMullen et al. 2008). Business regulations may also be inconsistently applied by creating uncertainty for entrepreneurs and facilitating regulatory corruption. Entrepreneurship is expected

to be discouraged by stringent regulations in the form of licensing requirements, registration difficulties and bureaucratic corruption. Arbitrary enforcement of labor, environmental and safety standards can discourage entrepreneurial activities (Rajagopalan and Tabarrok 2021). Thus:

Hypothesis 5 *Business freedom has a positive impact on economic growth by encouraging entrepreneurship, as indicated by the GDP.*

3.7 Property rights

Another key element for entrepreneurs to be sufficiently motivated to attempt to realize an identified opportunity is the certainty that his or her property rights will be respected.

In general, institutions play a crucial role in explaining why economic growth is achieved in some countries, but not in others (Boettke and Coyne 2003). The ability of protecting property rights is one of the basic pillars for economic development in any country. The institutions that guard property rights are the cornerstone of any entrepreneurial ecosystem and have an impact on how well collaborative innovation works (Elert et al. 2019).

The Austrian School has made a substantial contribution to the field of economics by highlighting how entrepreneurs create order and coordination in the pursuit of profit. Yet this depends on a framework of clearly defined property rights (Redford 2020). Any uncertainty in property rights will multiply the risk and uncertainty already present in any new venture. It will, therefore, limit the number of possible new businesses, innovations and capital investments (Torstensson 1994). Moreover, entrepreneurship through innovation often requires significant investment in Research and Development, which will never be recovered in the absence of an adequate legal system for patent protection (Alonso-Martínez et al. 2021). Therefore:

Hypothesis 6 *Property rights have a positive impact on economic growth, as indicated by the GDP.*

4 Methodology

The Heritage Foundation annually publishes the Index of Economic Freedom (Heritage Foundation 2023; Miller et al. 2019). This index has been published every year since at least 1995, and it measures and ranks an index that represents freedom in the economy for each country in the world. To calculate such an index, information is collected on different aspects, such as government integrity, monetary freedom, investment freedom, etc. All the variables making up this index are publicly available. The authors used the repository that forms the index as the source of information for this study.

A Qualitative Comparative Analysis (QCA) allows researchers to dive into causal complexity. It also introduces higher analytical potential for cross-case comparisons. This is especially relevant when a dataset has a restricted sample size (Fiss 2011; Ide and Mello 2022; Medina-Molina and Rey-Tienda 2022). It also helps to conduct more systematic and transparent research because it is necessary to explore the relation between variables to show causal and structural patterns. The QCA compares pairwise combinations of antecedent and outcome conditions to determine which ones result in an outcome by using Boolean algebraic techniques (Nambisan et al. 2017). A QCA with a fuzzy set is a common technique used in business research in general (Kumar et al. 2022), and in entrepreneurship studies in particular (Devece et al. 2016; Kraus et al. 2018).

As our study initially focused on 18 Latin American countries, the number of samples, i.e., the number of countries, is limited. Therefore, it cannot be as high as that required for a classic statistical study. However, the QCA, despite its own restrictions, provides a suitable methodology because, as already mentioned, the method is powerful even with a small sample size.

This study uses fuzzy-set Qualitative Comparative Analysis (fsQCA) to analyze the configurations of the economic conditions that yield a favorable result, in our case, GDP growth. The fsQCA, unlike other QCA implementations like the crisp-set QCA, allows combinations of variables (known as configurations) to follow fuzzy logic, an extension of Boolean logic that allows samples to partially fit in different configurations (Pappas and Woodside 2021). This methodology is especially helpful when analyzing a set of features that represent alternative configurations, where these features are not necessarily linearly related (Pateli and Giaglis 2005) and, thus, assumes complex causality and asymmetric configurations. This renders the fsQCA a method that combines the strengths of both quantitative and qualitative research approaches and attains high generalization and accuracy, although some researchers see problems with large-n samples (Finn 2022). The fsQCA assumes complex causality and considers asymmetric relations to detect both sufficient and insufficient, but necessary, configurations to obtain a satisfactory outcome, which is particularly suitable for small sample sizes (Woodside 2013).

To conduct the study, the fs/QCA v. 4.0 software was used (Ragin and Davey 2022; Thiem and Dusa 2013).

4.1 Sample and data

Countries in America where Spanish or Portuguese is spoken (i.e., Latin American) were selected as the target countries. The list consists of Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela. From the initial list, Cuba was removed due to lack of minimum economic freedom because the government tightly controls this country's economy (Mujtaba et al. 2019).

Index of Economic Freedom data were downloaded for the 2016 to 2020 indices, corresponding to 2015 to 2019, which are the 5 years prior to the COVID-19 pandemic. Although more recent information can be used, the situation was more vola-

tile from 2020 due to the spread of the virus and the different ways of dealing with it in distinct countries. Earlier years were not considered because the study would be less up-to-date and, in addition, some variables were not previously available. We also followed other recent research papers with the same time span (e.g., Cervelló-Royo et al. 2023).

Different studies have used the Index of Economic Freedom repository as secondary data. For example, McMullen et al. (2008) studied the relation between the GDP per capita and entrepreneurial intention in 37 countries. Kuckertz et al. (2016) applied the fsQCA to study the relation between economic freedom and entrepreneurial activity in 63 countries. In a recent research paper, the impact of economic freedom on foreign direct investment was studied using this data repository (Štilić et al. 2023). A similar paper studied the dependence between economic freedom on economic growth and unemployment with the fsQCA (Cervelló-Royo et al. 2023).

The variables of interest for this study were the inflation rate (Inflation), the country's tax burden (TaxBur) in relation to the GDP, freedom of investment (InvFree), i.e., how easy it is to invest in one country from abroad, business freedom (BusiFree), labor freedom (LaborFree) and property rights (PropRights). GDP growth over 5 years (GDPGro) was also considered because the authors hypothesized that a low inflation level, a low tax burden level and a high investment freedom level would positively impact GDP growth through the mediating effect of entrepreneurial activities.

To measure the tax burden, investment freedom and inflation, the annual data from 2015 to 2019 were averaged. The average GDP over 5 years was a variable already available in the 2020 index. All the variables are summarized in Table 1.

4.2 Calibration of variables

In order to apply the QCA, all the values must be true or false. With the fsQCA, values must be true, false, or in between true and false. This is easily understood with numbers: if we take 0.0 to be false and 1.0 to be true, values between 0.0 and 1.0 (e.g., 0.4) represent intermediate truth values. Calibrating values, i.e., assigning values between 0.0 and 1.0, is crucial for the method. Calibration may be performed through the fs/

Table 1 Definition of variables and descriptive statistics

Outcome and conditions[1]	Abbrev.	Mean[2]	S.D.	Min.	Max.
5-Year GDP Growth Rate (%)	*GDPGro*	2.04	4.10	-12.20	6.60
Investment Freedom	InvFree	60.76	24.61	0.00	85.00
Inflation %	Inflation	5.57[3]	8.46	0.63	36.50
Labor Freedom	LaborFree	54.66	12.25	28.44	77.85
Tax Burden % of the GDP	TaxBur	20.60	6.00	12.64	32.54
Business Freedom	BusiFree	61.58	9.81	37.02	75.32
Property Rights	PropRights	33.82	16.54	10.95	65.90

[1]Data source: Index of Economic Freedom (the original name of the indicators remains)

[2]*N*=17; all outcomes and conditions are calculated as the 5-year mean (from 2015 to 2019) of the indicators in the original database

[3]Original maximum value was 186263.16. However, the value corresponded to Venezuela, and it was approximately 5000 times higher than the following country. The value was ruled out from calculations

Table 2 Calibration values and descriptive statistics for the calibrated values

Outcomes and conditions[1]	Calibration values[2]	Mean	S.D.	Min.	Max.
GDPGro	(4; 2; 0)	0.62	0.37	0.00	1.00
InvFree	(76.5; 70.80; 17.51)	0.63	0.36	0.01	0.99
Inflation	(32.91; 5.57; 4.21)	0.45	0.32	0.03	1.00
LaborFree	(33.38; 54.66; 72.96)	0.52	0.30	0.02	0.88
TaxBur	(93.15; 79.28; 68.99)	0.43	0.35	0.02	0.97
BusiFree	(40.85; 61.58; 71.49)	0.55	0.32	0.03	0.98
PropRights	(16.44; 33.82; 60.40)	0.44	0.34	0.02	0.97

[1]Data source: Index of Economic Freedom (the original name of the indicators remains)

[2](full membership; crossover; non full membership); $N=17$; all outcomes and conditions are calculated as the 5-year mean (from 2015 to 2019) of the indicators in the original database, except GDPGro, which corresponds to the 2020 Index value

QCA software, and three parameters must be entered for each variable: Full membership threshold (i.e., a value above which we consider that the value is true); full non membership threshold (i.e., the minimum value below which we consider the value is false); the crossover point, which marks the center of fuzziness between 0.0 and 1.0. Calibration should be performed considering researchers' knowledge of variables. This can be a source of enrichment for research because "fuzzy sets offer a middle path between quantitative and qualitative measurements. However, this middle path is not a compromise between these two, "rather it transcends many of the limitations of both" (Ragin 2009).

To calibrate GDP growth, we considered a threshold of 4% for full membership, 0% and below (negative growth) for full non membership and we set the crossover value at 2% (Singer 2013). For investment freedom, tax burden, business freedom, labor freedom and property rights, we used the maximum, minus 10% of the range (maximum – minimum) as the full membership point. Similarly, the minimum, plus 10% of the range of values, was used as the point of full non membership. The crossover point was the mean value. For inflation, Venezuela's inflation was not considered because its value was thousands of times higher than that of any other country. Calibration was performed with the other data in this way: Venezuela was automatically classified as a full member in inflation terms and the inflation values were not dragged by Venezuela's inflation. The calibration values together with the abbreviated variable names are presented in Table 2.

5 Results

5.1 Necessary conditions analysis

This analysis assesses the specific prerequisites essential for attaining elevated values in outcomes. The necessary conditions conducive to a high GDP growth rate are detailed in Table 3. As suggested by Schneider and Wageman (2010), a condition is deemed necessary if its consistency exceeds the threshold of 0.90. If a condition does not meet the 0.90 criterion, a lower threshold of 0.75 is often used in this step (Dul 2016).

Table 3 Necessary Conditions Analysis

Outcome	GDPGro		Hypotheses
Conditions	Consistency	Coverage	
InvFree	0.78	0.81	Hypothesis 1: confirmed
~Inflation	0.72	0.85	Hypothesis 2: confirmed
LaborFree	0.63	0.80	Hypothesis 3: not confirmed
~ TaxBur	0.75	0.85	Hypothesis 4: confirmed
BusiFree	0.67	0.79	Hypothesis 5: not confirmed
PropRights	0.46	0.69	Hypothesis 6: not confirmed

This threshold allows us to eliminate some conditions that are less necessary and to focus on those that are more consistent for the sufficiency analysis. Specifically, the conditions that affect Hypotheses 1, 2 and 4 (InvFree, Inflation and TaxBur, respectively) are considered necessary, while Hypotheses 3, 5 and 6 are not considered necessary (LaborFree, BusiFree and PropRights, respectively). Therefore, the conditions related to Hypotheses 3, 5 and 6 will not be considered in the sufficiency analysis. This reduction of conditions (only three conditions left) allows the sufficiency analysis to be carried out with a limited number of cases (17 countries).

5.2 Sufficiency analysis

Sufficiency analysis involves examining the presence or absence of conditions to determine their sufficiency in achieving a particular outcome. It assesses whether a combination of conditions (known as a configuration or path) is sufficient to lead to the outcome, even though the presence of every individual condition may not be necessary. After the outcome (GDP growth rate) and conditions (Inflation, InvFree and TaxBur) have been identified, a consistency threshold must be set to evaluate the sufficiency of conditions. The consistency threshold was set above the usual value, 0.75, since Rubinson (2013) warns that wrong conclusions may be drawn from a uniform threshold. Thus, to prevent false positives, we considered a more limiting consistency level of 0.9.

Afterwards, a truth tables needs to be generated, which includes all possible combinations of conditions (Ragin 2008). In our case, it shows (2^3) eight possible configurations. Those with too few cases should be discarded from the calculations. In our case, there were configurations with zero cases, but six with only one case. These were eliminated.

Different levels of complexity and simplicity are presented in the truth table analysis. By one side, a complex solution that refers to a configuration of conditions that involves a large number of factors and interactions, resulting in a detailed but potentially convoluted explanation of the outcome. Another solution is the intermediate one, which represents a configuration of conditions that strikes a balance between complexity and simplicity and includes a moderate number of factors and interactions that provide a more focused explanation of the outcome compared to the complex solution. Finally, the parsimonious solution shows the simplest configuration of conditions that still adequately explains the outcome, by involving a minimal number of factors and interactions, resulting in a concise and straightforward explanation. The parsimonious solution aims to achieve maximum explanatory power with

minimal complexity. Since the intermediate solution retains the essential conditions without the possibility of elimination, it is regarded as the most optimal outcome of the analysis.(Rihoux and Ragin 2009) and it is shown in Table 4.

Coverage and consistency were assessed for the solutions. Consistency refers to the degree of agreement among cases that fall within a particular solution or configuration of conditions. It measures how well the identified solution accurately predicts the outcome across different cases. Higher consistency indicates a stronger relationship between the conditions and the outcome, suggesting that the solution provides a reliable explanation for the observed patterns (Ragin and Fiss 2017). A configuration is not supported by empirical data if its consistency is low. In terms of coverage, both raw and unique coverage are important. Raw coverage measures the overall explanatory power of the solution across the entire dataset and represents the total number of cases in which the outcome of interest is observed among those cases that meet the criteria defined by the solution. By contrast, unique coverage measures the distinct contribution of the solution to explaining specific cases in the dataset and represents the number of cases for which the outcome is observed exclusively due to the presence of the identified conditions, without being explained by any other solutions or configurations (Ragin 2009). Both raw coverage and unique coverage provide valuable insights into the effectiveness and relevance of a solution in explaining the observed outcomes and are presented in Table 4, along with consistency.

The different paths of causal conditions that foster GDP growth are thus shown in Table 4. The configuration associated with path 1 (InvFree * ∼Inflation * ∼TaxBur → GDPGro) implies that, among Latin American nations, those exhibiting high levels of investment freedom (InvFree), coupled with low tax burdens (∼TaxBur) and minimal inflation (∼Inflation), are likely to experience superior GDP growth rates (GDPGro). This configuration demonstrates a high consistency level of 0.97, and it encompasses a substantial number of cases, as indicated by its raw coverage of 0.59. Moreover, when considering the complexity inherent in the analyzed outcome (GDP growth), the unique coverage remains notably high at 0.36. In contrast, paths 2, 3, and 4 exhibit low consistency scores of 0.61, 0.57, and 0.51, respectively, alongside limited unique coverages of 0.04, 0.04, and 0.00, respectively. This underscores the limited explanatory capacity of these paths when considered independently.

These results indicate that all the countries with low inflation, investment freedom and a low tax burden will ensure that GDP growth is higher than the average. Nevertheless, despite displaying a negative combination of two of these conditions, some countries still have high GPD growth (Solutions 2, 3 and 4 in Table 4). This result does not invalidate the hypotheses because these combinations are not consistent

Table 4 Intermediate fsQCA solution: configurations leading to the GDP growth rate

Sol.	Path	Raw coverage	Unique coverage	Consistency
1	InvFree * ∼Inflation * ∼TaxBur → GDPGro	0.59	0.36	0.97
2	∼InvFree * TaxBur → GDPGro	0.25	0.04	0.61
3	Inflation * TaxBur → GDPGro	0.27	0.04	0.57
4	∼InvFree * Inflation → GDPGro	0.22	0.00	0.51

Solution coverage for Solution 1: 0.73; Solution consistency: 0.88; ∼ = set negated

(see Table 4). A low consistency of a solution implies that there are countries (cases) that fulfill the conditions of the path and do not have a good GDP growth rate. The inconsistency of Solutions 2, 3 and 4 derives from the non-inclusion of other relevant variables in the model that, with positive values, will produce economic growth even with high Inflation, a high tax burden or low investment freedom, but never with the three of them in one combination. The complexity of modeling the economic growth rate and the multitude of variables that should be included in the model implies that there can be a different path to obtain a satisfactory growth. For this reason, isolating a consistent combination (Solution 1 in Table 4) for economic growth is an important result. The result of the configuration is consistent with previous theories (Brauner-hjelm et al. 2021; Silge and Wöhrmann 2021; Ekanayake and Thaver 2021).

The results reveal consistent patterns for government response, tax burden, investment freedom and inflation that obtain better economic growth results. Despite the abundant literature about this subject, there are no studies that examine these factors' combined effects on economic growth. Numerous studies have, however, focused on specific aspects of economic freedom or on the concept as a whole. Khyareh and Zamani (2022) report that components of economic freedom, such as rule of law, regulatory environment, trade openness and government size, foster entrepreneurial activities that lead to higher economic growth rates. Moreover, Brkić et al. (2020), from a broader perspective, confirm a positive effect of economic freedom on economic growth in European countries.

5.3 Results assessment

The results confirm Hypothesis 1 (access to financial capital), Hypothesis 2 (low inflation), and Hypothesis 4 (low tax burden) as necessary conditions for economic growth. Although Hypothesis 3 (labor freedom), Hypothesis 5 (business freedom) and Hypothesis 6 (property rights) are not confirmed (they are not necessary conditions for economic growth), these hypotheses cannot be ruled out because perhaps in this context (Latin America), the level of these variables is high enough to lead to positive economic growth. It should be remembered that the calibration of these variables was performed by considering only Latin American countries, and the worst countries in this context may have enough labor freedom, business freedom and access to property rights to reasonably allow entrepreneurial activities.

The positive results for Hypotheses 1, 2 and 4 are consistent with recent published works (Casares and Salazar 2023; Golpe et al. 2023). The government's fiscal, monetary and financial policies are vital for economic growth. The rationale for these hypotheses is based on this research into their effects on entrepreneurs' activities. Based on the assumption that economic growth depends on the efficient channeling of a society's resources to entrepreneurs, for the economy to be healthy they first must have access to these resources in the form of financial capital; second, they must be confident that investment performance can be sustained; third, they must be able to correctly forecast their ventures. The results show for relevant economic growth that all three conditions must be present and combined at the same time.

These results agree with those presented by Khyareh and Zamani (2022), who sustain that overall economic freedom and its subcomponents favor the positive effects of entrepreneurship on economic growth.

6 Discussion and conclusions

The theoretical analysis of how institutional and the macroeconomic contexts influence economic growth by enhancing entrepreneurial activities represents a novel approach, and only a few studies have adopted this rationale (Ferreira et al. 2023). In line with Hall and Sobel (2008), a fundamental premise of this study is that institutions influence economic growth primarily through their effect on entrepreneurship. From a theoretical standpoint, as far as we are aware this study is the first to comprehensively investigate the interplay among variables such as access to financial capital, inflation, ability to access resources, tax burden, business freedom and property rights. These variables collectively contribute to enable entrepreneurship and impact the GDP. While empirical evidence has extensively demonstrated the significance of entrepreneurial activity for economic growth (Stel et al. 2005), the examination of economic growth through the conditions favoring entrepreneurial activities has been an elusive issue.

The findings of this research indicate the need for a well-balanced blend of financial, monetary and fiscal policies. Empirical data support the idea that a low tax burden, coupled with low inflation and increased investment freedom, promotes economic growth in Latin American nations. Although other authors have analyzed the impact of these three conditions on economic growth (Alesina and Rodrik 1994); Borensztein et al. 1998; Casares and Salazar 2023; Cervelló-Royo et al. 2023), the added value of this research lies in it showing that they need to be combined to be effective. The importance of government policy to support entrepreneurship for economic growth is confirmed.

The empirical findings carry significant implications. There is a widespread need for public policies that promote entrepreneurship and drive economic growth (Singh 2022). However, understanding the consequences and scope of public policies requires a sound theoretical framework backed by empirical data. It has often been pointed out that the outcomes of particular government initiatives on entrepreneurship policy have been disappointing or at least unclear (Figueroa-Armijos and Johnson 2016). This study argues for the necessity of coherent policies across various domains to achieve effectiveness.

The findings of this study add additional evidence to a persistent issue that has engaged researchers and academics since Kirzner (1979) attempted to denote entrepreneurs' role in the market process.

The main limitation of this study is that the empirical data are limited to Latin America and to a specific time period. These limitations are unavoidable because it is necessary to restrict the number of variables that may considerably differ across nations. Furthermore, a context with fewer countries prevents using the fsQCA. Another drawback is that although some of the considered indices (labor freedom, business freedom, property rights) may have variance across Latin American coun-

tries, the mean values are still quite favorable compared to all the countries in the world. Hence the value of these indices can be considered to be more or less homogenous in the studied countries. This may be the case for business freedom (Heritage Foundation 2023) because a research work by Cebula et al. (2016) on OECD nations shows that the higher the business freedom, the higher the growth rate is of standard of living.

Future research could globally analyze the threshold of different conditions (labor freedom, business freedom, property rights) that hinder the smooth functioning of entrepreneurial activities. Studies can also be carried out in other areas of the world, e.g., the African continent, and different combinations of variables may also be considered.

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