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Firm Resilience and Growth during Economic Crisis: lessons from the Greek Depression

Policy Brief

Christos Genakos, Cambridge Judge Business School
Ioannis Kaplanis, Athens University of Economics and Business
Maria Theano Tagaraki, Athens University of Economics and Business
Aggelos Tsakanikas, National Technical University of Athens

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Firm Resilience and Growth during Economic Crisis: lessons from the Greek Depression[1]

Christos Genakos[2], Ioannis Kaplanis[3], Maria Theano Tagaraki[4]

and Aggelos Tsakanikas[5]

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Firm entry and exit is a vital mechanism to make the economy more efficient and result in better consumer products and services. However, in times of severe economic distress, with collapsed demand and substantial economic uncertainty, this Schumpeterian dynamic process may push out of the market even healthy or efficient firms leading to a weaker, not stronger, economy overall. The end result might be massive layoffs, rising levels of unemployment and poverty, as well as political turbulence. Which factors make firms resilient to a deep and sustained depression? Is there a role for public policy?

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[2] University of Cambridge, Cambridge Judge Business School, CEP & CEPR, E: c.genakos@jbs.cam.ac.uk

[3] Athens University of Economics and Business, E: ikaplanis@aueb.gr

[4] Athens University of Economics and Business & IOBE/FEIR

[5] Laboratory of Industrial and Energy Economics, at the National Technical University of Athens & IOBE/FEIR

Drawing on the research we conducted, we find sizeable scope for policy along the following key themes:

- *support the innovation ecosystem in order to promote firm innovation, commercialisation of research and IP activity*
- *develop an effective industrial strategy, that includes investment in manufacturing sectors and utilises various industrial policy instruments*
- *empower the Greek firms to reorient towards exports*
- *develop tailor made regional strategies, that utilise local assets and build on the regional pool of talents, investors and institutions, to promote growth in all regions*

POLICY BRIEF

The global financial crisis that burst in 2008 adversely affected business performance in many countries, especially in Europe. However, the impact of the crisis on entrepreneurship and business dynamics differed amongst countries, depending on their businesses' resilience, the policies implemented, but also their predominant productive structure. The severity of the Greek depression is unique in the history of middle and high-income countries in the post second world war era (Chodorow et al., 2021). Following a period of economic boom up to 2007, Greece experienced a prolonged depression that lasted almost a decade and left it with a quarter of its GDP lost. Unemployment rose to record levels as high as 27%, while the poverty rate doubled to 22% (OECD, 2018). According to administrative data from the Ministry of Economy in Greece (GEMI), there were 106,000 firm closures and 38,000 openings at

the crisis peak in 2011, resulting in an overall reduction of 6% of the total number of businesses in the economy.

Greece received a sizable bailout package from the European Commission, the IMF and ECB, that was conditional on acute fiscal consolidation and structural reforms. The bailout programme that was implemented included major reforms that affected the financial, labour and product markets, as well as the functioning of the business environment. The institutional and regulatory changes appear to have moved in a positive direction and business indicators, like the OECD Product Market Regulation index and the World Bank Ease of Doing Business index, have improved steadily in the second half of the previous decade (OECD, 2020).

Still, to date, there is no systematic analysis of the impact of the crisis on the actual performance of firms during the whole period of the crisis, entrepreneurship and business dynamism. This study attempts to fill this gap by examining individual firm, sectoral and regional level characteristics that might affect existing firm resilience and new firm survival rate.

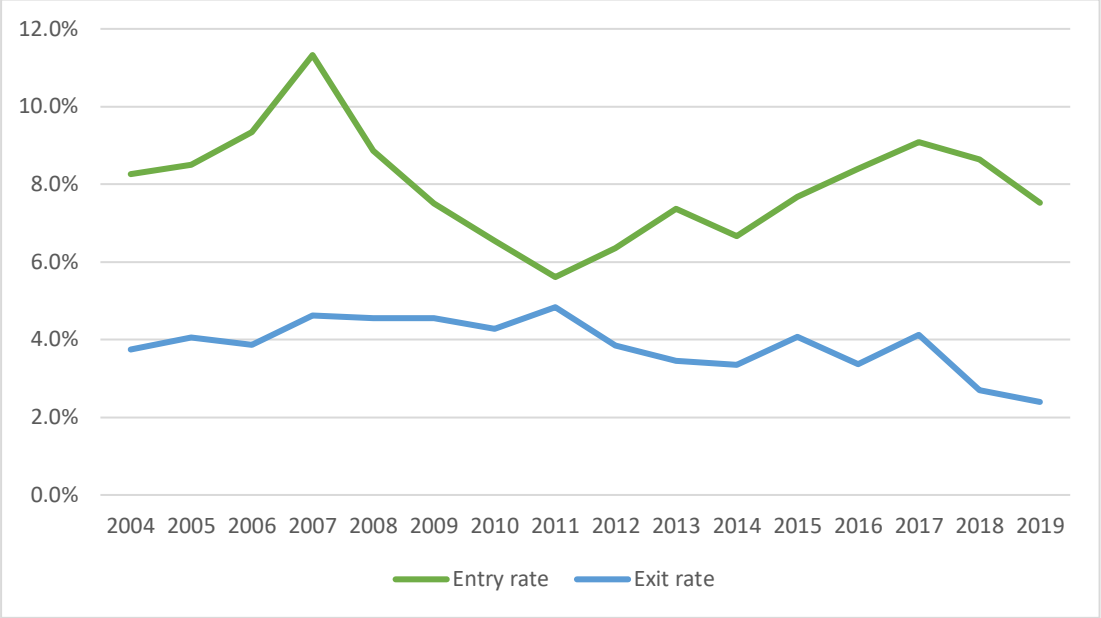
A major contribution of the project is that the analysis is conducted at the firm level and utilises two valuable data sources with the most extensive coverage of small (sole proprietorship) and large (other legal status firms) firms containing information on entry and exit in Greece. First, we gathered microdata from the business registry of GEMI (*'Greek General Commercial Registry'*) for the period 2011-2019, a newly

available source of information on the universe of businesses in Greece. To our knowledge, this is the first time the GEMI microdata have been processed and analysed to study individual firm resilience. Furthermore, we utilised microdata from the ICAP database, which contains financial and commercial information for all firms legally obliged to publish their economic accounts, for 2004-2020, i.e. both before and after the crisis. Finally, we matched these microdata with information on industrial property rights, combining information on patents, industrial designs and trademarks, so as to examine the interplay between innovation and entrepreneurship.

The descriptive analysis offers valuable insights into the evolution of the Greek businesses' performance before, during and after the crisis, investigating firm entry and exit by size, legal type, sector and region. Furthermore, applying suitable econometric techniques, we examine which firm characteristics – based on the available data – might be crucial to firm's resilience and growth.

Although the entry and exit rates tend to be correlated over periods of boom and bust, this has not been the case during the period of the peak of the crisis (2010-2013). In 2011, the entry rate reached its lowest level at 5.6%, halved compared to 2007, while the exit rate reached 4.8%, a rise of 23% compared to 2006.

FIGURE 1 – Entry and Exit Rates, ICAP (2004-2020)

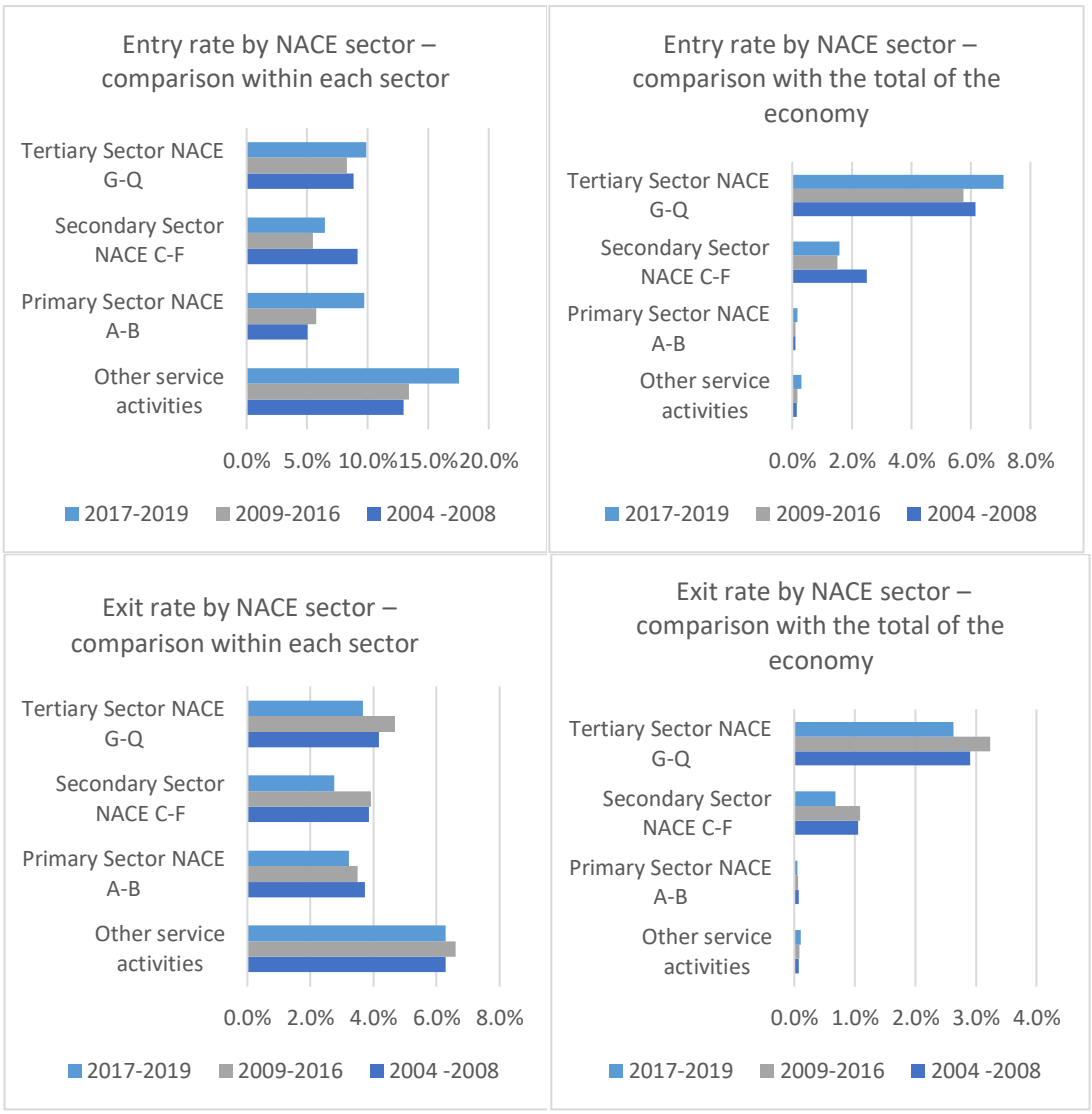


Notes: Entry (exit) rate is defined as the ratio of the number of new (closed) firms over the total number of firms in the ICAP database each respective year.

The descriptive analysis shows interesting results regarding the survival rate of the different sectors. The tertiary sector appears to have suffered most during the crisis years, with its exit rate exhibiting an increase of more than 10% for 2009-2016 compared to the pre-crisis period. Similarly, tertiary sector firms exhibit the worst performance in terms of their survival rate, as captured by the Kaplan-Meier estimates, while firms from the secondary sector have performed better and firms from the primary sector even more.

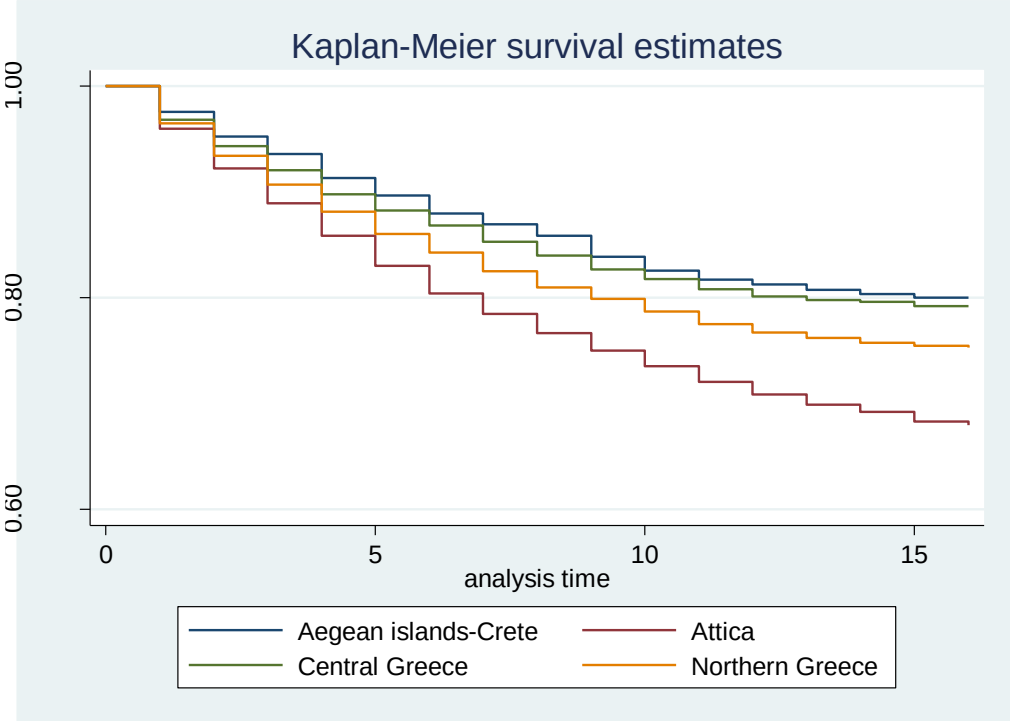
Looking at the regional performance of firm survival, all regions appear to have been affected during the crisis years. Firms in Attica, the region of the capital Athens, and Central Macedonia, the region of the second largest city Thessaloniki, have not experienced any better chances of survival being based in the main urban centres of Greece. On the contrary, better chances of survival during the crisis years have been achieved by firms in the periphery, like the Aegean Islands – Crete and Central Greece.

FIGURE 2 – Entry and Exit Rates by NACE Sector



Notes: Entry (exit) rate is defined as the ratio of the number of new (closed) firms over the total number of active firms in the ICAP database each respective year. We adopt the NACE (Nomenclature of Economic Activities) standard classification. The analysis refers to the first digit NACE classification, which includes 21 sectors identified by alphabetical letters A to U. The Primary sector is defined as the A and B sections, the Secondary Sector ranges from C to F, and the Tertiary Sector is G to Q, and the rest of them belong to the category of Other Services. The presented rates are the averages of the entry (exit) rates for the periods 2004-2008, 2009-2016, and 2017-2019.

FIGURE 3 – Kaplan-Meier Firms Survival Rate by Region



Notes: The graphs present the Kaplan – Meier survival estimates for new firms that entered the market after 2004 with respect to their location. Regions are represented at the NUTS1 level.

Our econometric analysis focuses on the factors that help or hinder firm survival and growth. We find that the crisis increased the exit likelihood for a firm by 5% to 16%. There are specific characteristics of firms that appear to foster their performance and increase their survival rates. Larger firms, with significant fixed assets, lower financial leverage, operating in concentrated industries, but also those that are innovation and export oriented tend to have better chances of survival compared to their counterparts. Regarding age, our empirical findings support the proposition of the 'liability of adolescence', where firm's hazard for exit increases once the firm has surpassed an

initial honeymoon period that is fairly protected due to its initial funding and performance monitoring.

Evidence on the role of such characteristics is important for policy makers not only for Greece and its future policies but also for policymakers of other countries going through a crisis or having a similar economy structure. A pattern of prevalence of SMEs, and especially small and middle-size firms, appears in many EU countries, thus, our results go beyond a solely 'Greek' case. In addition, Greece, due to the severe economic crisis it has been facing since 2008, represents a case study of particular research and policy interest. But also, at the business level, we offer some insights to firms on how to strengthen their resilience and increase their survival chances.

Furthermore, we could also pinpoint that the economic shock due to the COVID-19 crisis partly resembles what Greece experienced during 2008-2013 in terms of some basic indicators. Both crises seem to share some common features, such as nearly double-digit GDP losses, increasing unemployment rates and a significant increase in public debt. In both cases, the regulatory and institutional set-up and the markets (investors) were not prepared for the crises' magnitude and consequences. Both crises negatively affected business activity, resulting in business exits, supply chain disruptions, redundancies, and loss of key customers (Belitski et al., 2022). Of course, during the COVID-19 crisis, the reaction from the EU was immediate, with a wide set of instruments but also significant funding for investments (EU's Recovery and Resiliency Facility (RRF). Still, lessons can be learned that are valid for both crises.

A clear policy and business message is that exports seem to provide a safe option for survival during adverse times. Of course, for the average Greek SME (which is actually

a micro firm), this is not an easy strategy as it requires high human capital and efforts to innovate, which is not a typical path to follow. That is why SMEs need support for finding new alternative markets and training their workforce in that direction. An effort to grow through exports is not a defensive strategy when internal markets cannot create higher demand or absorb more volume. On the contrary, it is a strategy that seems to increase the chances of survival for firms from such economies and create a sustainable growth path. Indeed, in the post-crisis period, exports have been leading the recovery growth.

Results on the positive effect of higher fixed assets for firm survival underline the importance of investment for firm resilience, often closely related to capital-intensive sectors like manufacturing. The need for improving the business environment so as to facilitate investment recovery is vital. Furthermore, our analysis supports the argument that manufacturing firms have better survival chances than service firms. The recent pandemic crisis also pushed forward the policy debate on which sectors of the economy can provide a sustainable growth pattern. Tourism is important for Greece indeed, but the volatility of the relevant demand and the uncertainties around it emphasise that investment in manufacturing is an essential part of a national growth strategy. Empirical studies in Greece have indicated the significant multiplying effects of manufacturing sectors in the Greek economy, in terms of GDP, employment and tax revenues (IOBE, 2019). On the policy side, there has been renewed interest internationally on targeted industrial strategies as well as demand pull policy instruments that can shape technological change and stir growth (Criscuolo et al, 2022).

The focus on start-ups (that is, the flow of ventures) is also essential in an economy. But we should not downplay the fact that they represent only one part of entrepreneurship. Established firms, as well as those of large size, have a successful record of surviving various crises. They should not be neglected when designing policies and incentives of any type: they are fundamental for our productive system and represent the critical stock of an economy. Still, our empirical research finds that although younger and smaller firms have smaller survival chances, they are the ones that demonstrated higher growth rates during the period of study. In that respect, the main policy aim of entrepreneurship should not just be an algebraic increase in the number of start-ups created in an economy but an effort to affect the quality characteristics of these ventures, so they can be viable and support sustainable growth (Giotopoulos et al. 2017). This is significant for designing policy strategies and tools in adverse economic conditions when, on the one hand, there are increased financial constraints and, on the other, there is a need to achieve economic recovery.

Furthermore, our empirical analysis finds strong evidence of the importance of innovation for firm performance and resilience. Firms that engage in trademark and patent activity have higher chances of survival. In that respect, it is essential to enhance the business environment to promote firm innovation and adapt to the challenges of the fourth industrial revolution. Greece has high human capital within its labour force as well as talented researchers. While it performs above average in measures of university research publications, it underperforms in most measures of innovation activity, including patenting. Greece had one of the lowest rates in GDP spending in R&D activities in the 2000s, and while subsequently it increased its efforts and managed to

double it to 1.3% in 2019, it is still one of the lowest amongst OECD countries (OECD, 2020).

One of the main concerns is that the public research system is isolated from production, with few links between universities and businesses. Furthermore, the private sector is under performing in R&D activities, amongst others, due to a lack of venture capital. It is vital to develop an ecosystem that puts knowledge production as a top strategic priority and fosters the links between the triple-helix of public research institutions, central government and the business sector. The coordinated action amongst these three pillars should aim at facilitating the produced knowledge to be transformed into entrepreneurial activity.

Our empirical findings also highlight the importance of the periphery versus the main metropolitan regions of Greece. Policies along the lines of smart specialisation become particularly useful for boosting the innovation and productive potential of all regions in Greece (EC, 2013). Regional development should not be limited to utilising the EU structural funds but also actively involve the local business sector and the public research infrastructure. Rather than a subsidy driven model, there is a need for a tailor made, bottom-up approach, that builds on local assets and amenities, the regional pool of talents, investors and institutions, in order to unlock the innovation and growth potential of each region (OECD, 2020).

To sum up, the ability of firms to adapt to turbulent economic conditions and survive is a key factor for the economies to maintain jobs and households to maintain their incomes. Our research identifies factors that enable firms to survive through crises and

points to key policy recommendations for the policy makers of Greece and other countries going through similar crises. In a global environment of increased international competition with vastly changing technologies, the main policy concerns should focus on creating a business climate that enables firms to utilise their potential, innovate, produce high value-added products and successfully compete in the national and international markets.

Policy Recommendations

- support private R&D, amongst others, with tax credits and increase of public R&D spending to promote innovation
- foster the public-private research collaboration so as to promote research commercialisation and IP activity
- support business clusters to advance innovation and generate economies of scale for SMEs
- develop targeted industrial strategies and demand side industrial policy instruments to shape technological change and stir growth
- empower the Greek firms to reorient towards exports, by offering an efficient global network of support, information and connections, reduced administrative and other trade barriers
- utilise local assets and amenities, build on the regional pool of talents and investors, explore synergies between local businesses, universities and public institutions, in order to unlock the innovation and growth potential in each region

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