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Original scientific paper

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THE IMPLICATIONS AND AFTERMATH EFFECTS OF THE FINANCIAL CRISIS ON STARTUPS IN EU

Abstract

The 2008 Financial Crisis (FC) has been the most severe since the great depression. The interconnectedness of the financial sector has worsened the conditions enabling fast and unstoppable spillover of the negative effects across European markets. In a period of high unemployment levels, small business, especially start-ups have been recognized as one solution for reviving the economy. For that reason the paper at hand analyses the impact of the 2008 FC on start-up activity, their nature and survival rate. Special focus is placed on the financial availability in the contracting financial markets. The activity and role of alternative source of funding in the form of Business Angels (BA) and Venture Capital (VC) are particularly studied. The conclusion suggests that future research and policy actions should focus not only on increasing the level of capital available for start-ups, but also enriching and strengthening networks and linkages between all business actors.

Keywords: Financial crisis, SME start-ups, EU

JEL classification: G01, G21, 052, M13.

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Introduction

The 2008 financial crisis has, once more, challenged the efficiency of the market mechanisms to cope with the risks that lead to market failures, such as: asymmetric information, moral hazard and principal-agent problem. The responsibility for this catastrophic event was divided among policy makers, irresponsible borrowers, lenders, and rating agencies led by motives for personal gain. Hence, macroeconomists are constantly researching causes and initiators of crises and reestablishing fiscal and monetary policies for better risk management and avoidance of bubbles.

The interconnectedness of the financial sector initiated the spill over from the US to the EU market causing contraction of the European market and hardships for businesses, especially for small business and startups. The paper at hand aims to provide better understanding of the impact of the crisis on start-ups in the EU and aftermath effects in their operations. In addition, the paper compares start-up funding on EU level aiming to give more in-depth insight in the hurdles for financial availabilities in the very beginning of the business cycle.

The paper is structured as follows. First, we look into the post-crisis environment in EU countries with special emphasis on the start-up activity prior and after the hit of the crisis. Later, we seek to investigate survival rate of startups in the pre and post-crisis environment. The analysis in the paper covers data from the years close to the hit of the crisis aiming to better understand the immediate effect and spillover of the FC in the real sector. The end of the paper provides findings regarding financing startups in recessive economy after the hit of the crisis and proceses for reviving startups after the crisis.

1. THE POST-CRISIS ENVIRONMENT WITH FOCUS ON START-UP ACTIVITY PRIOR AND AFTER THE HIT OF THE CRISIS IN EU COUNTRIES

The domino effect struck the member countries of the Euro zone where the crisis primarily has resulted in rapid increases in unemployment, deceleration of growth, and economic contraction. Many countries, even in the European Union (EU) have sunken in negative GDPs, like Greece, Italy and Spain, while others have struggled to retain a GDP growth only above 1%. The most severe drops in GDP occurred in 2008

and 2009 which reflected the official hit of the crisis in Europe. In addition, unemployment has escalated in recent years, in Greece and Spain reaching 27% and 26% respectively. Many people who lost their jobs in the recessive economy were compelled to search for alternative employment options. The effect of the overall economic situation exerted opposing forces on entrepreneurs and SMEs, particularly startups.

From one side, the lower wages and lower cost of the capital decreased the opportunity costs for starting a business stimulating entrepreneurship. In addition, the extreme high levels of unemployment have implied entrepreneurship as the only alternative. There has been a modest decline in unemployment rates in years 2011 and 2012 in some member countries like Germany, Estonia, Latvia and Lithuania. However majority of the EU countries have only stagnated, unable to recover 2008 unemployment levels. The question emerges what has been the role of SMEs, especially startups in retaining unemployment from further intensification? Have the increased unemployment pushed more people into self-employment? Note that, in the most severely affected countries, high unemployment was persistent in the post-crisis period as well.¹

On the other side, the decreased demand, reduced disposable income, and especially the more difficult access to finance diminished the potential for high rates of start-ups in these conditions.² The overall contraction of the economy has shrunk excessively the demand which has had major effect on the number of both SMEs and startups. There has been increasing reports of insolvencies and bankruptcies posing an urgent need for transfer strategies and second chance entrepreneurs.³ Finally, finance availability especially for startups has become even more challenging which alongside with the decreased demand implies poor chances of survival of startups.⁴

¹ Eurostat database (2014). Available at: <http://ec.europa.eu/eurostat/data/database>, Accessed on 15 December 2014 and Reynolds, P., J. Storey, J. D. and Westhead, P. (1994). "Cross-national Comparisons of the Variation in New Firm Formation Rates, Regional Studies", Vol. 28:4, pp. 443-456.

² Fairlie, W., R., (2013). "Entrepreneurship, Economic Conditions, and the Great Recession", *Journal of Economics & Management Strategy*, Volume 22, pp. 207–231.

³ Calogirou et al. (2010) *Business Dynamics: Start-ups, Business Transfers and Bankruptcy*, PLANET S.A., CCIP, DTI and GFA, Published by the European Commission, DG Enterprise and Industry.

⁴ Vetter, S., Köhler, J. (2014). *Business demographics and dynamics in Europe*, Deutscher Bank Research, 2014.

Graph 1 Identified Risks for starting the business in EU-27, 2010

Source: Flash Eurobarometer 283, May cited Calogirou et al, *Business dynamics: start-ups, business transfers and bankruptcies*, European commission 2010: p.120.

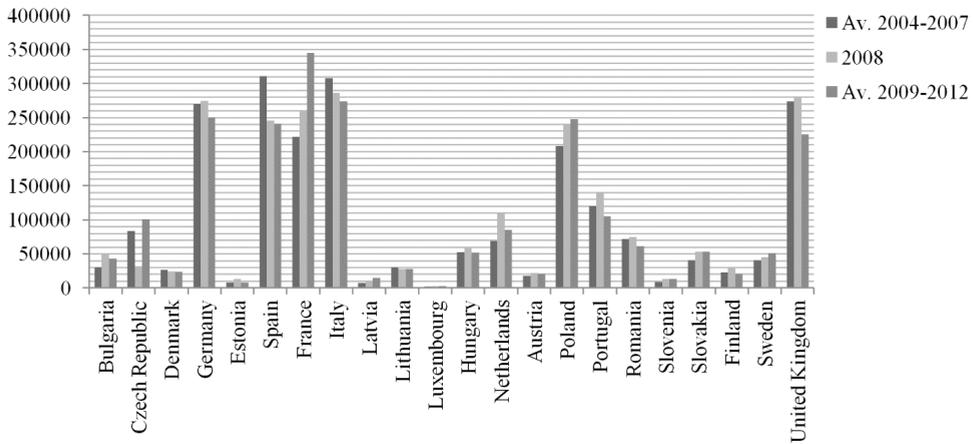
EC conducted a survey two years after the hit of the FC (Graph 1). The fears presented confirm the negative effect the crisis has exerted upon entrepreneurship perception. Although low opportunity costs and high unemployment have initiated start-up activity, the prevailing unstable environment has resulted in high risk adversity among potential entrepreneurs.

Observing the fluctuations of start-up activity during a recessive period can shed light on the effect of the FC on entrepreneurs' behavior. Given that start-ups commercialize innovative ideas and contribute significantly in the job creation, observing trends of start-up activity in terms of number of enterprises' births provides valuable information for both, policy makers and researchers.

The next graph provides information on start-up activity in the member countries and compare pre and post-crisis levels by taking the average values of 2004-2007 and 2009-2012. The year 2008 is taken as critical year when the crisis hit. Note that data from Austria, Denmark and Finland was lacking for year 2007, 2008 and 2012 respectively. In these cases, the missing value was calculated as the mean of the previous and following year.⁵ Graph 2 highlights the uneven distribution of the crisis' effects on start-up activity among the countries.

⁵ E.g. Denmark 2008 was calculated by dividing the sum of 2007 and 2009 values by 2.

Graph 2 Number of new start ups in EU-22 in the period 2004-2012



Source: Eurostat: <http://ec.europa.eu/eurostat/web/structural-business-statistics/entrepreneurship/business-demography>, Accessed on 15 September 2016.

Entrepreneurs in Germany, Hungary, Netherlands, Poland, Portugal and the UK have been most resilient at the actual hit of the crisis (2008), but most of them have experienced drops in start-up activity in the post-crisis period. Czech, France, Poland, Lithuania, Slovakia and Sweden were the only members which managed to regain pre-crisis levels of start-up or even report a positive increase in the period of 2009-2012. Overall, the situation reflects a very slow and fragile recovery. According to the EC the weak internal demand from public and private consumption is partly responsible for the slow recovery. Even established SMEs rely more on the domestic market for achieving success rather than on international sales.⁶ The latest Annual Report on SMEs identified 60% of micro and 70% of medium sized SMEs as low-export oriented firms.⁷ Member countries still struggle to retain public deficits at low level, at the same aiming for growth and competitiveness through increased domestic demand.

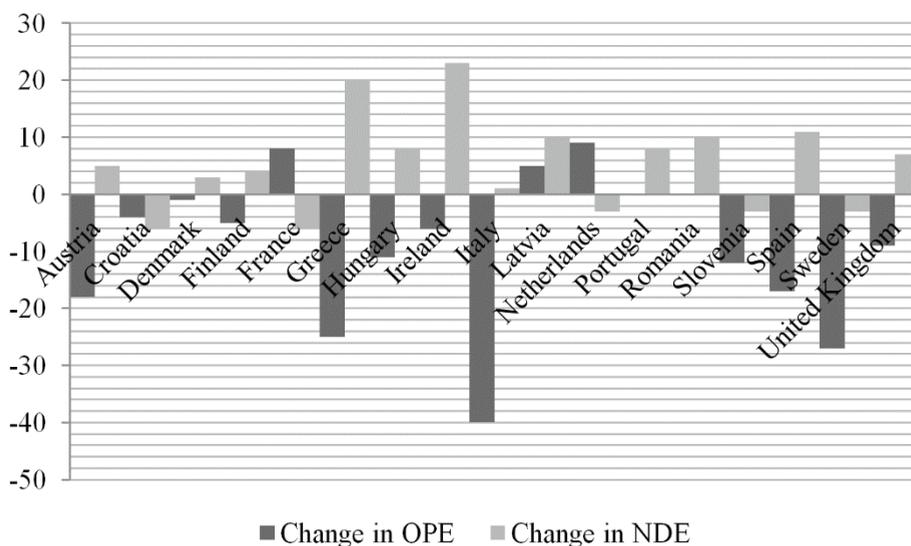
⁶ Ibid

⁷ Gagliardi, et. al. 2014. "A Partial and Fragile Recovery", Annual Report on European SMEs, European commission, 2013/2014.

Finally, we look into the types of entrepreneurs the crisis has produced and their motives for engaging with start-up activity. For that reason we analyzed the change in opportunity driven entrepreneurs (OPE) and necessity driven entrepreneurs (NDE) prior and after the crisis comparing data from 2012 and 2007.

The data from the graph implies that startups out of necessity have increased at the expense of opportunity seeking entrepreneurs, with the exception of Netherlands, France and Latvia where OPE has risen, while NDE have remained low.

Graph 3 Change in start-up motives, opportunity VS necessity, 2007-2012



Source: GEM: <http://www.gemconsortium.org/data>, Accessed on 15 September 2016

Conclusively, after the crisis entrepreneurship has been seen as more of an imperative necessity, rather than an alluring opportunity. Note that necessity driven startups lack knowledge, experience and are less likely to pursue internationalization or high-growth strategies.⁸

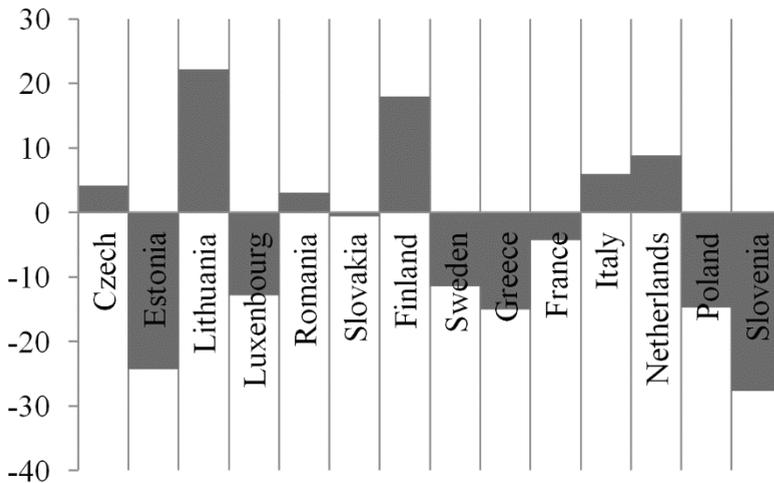
⁸ Poschke, M., (2012). “Entrepreneurs out of necessity: a snapshot”, *Applied Economics Letters*, Vol. 20, pp. 658–663

2. EXAMINING THE SURVIVAL RATE OF STARTUPS IN THE PRE AND POST-CRISIS ENVIRONMENT

The success of startups is of major importance for entrepreneurship activity for two main reasons. Primarily, startups facilitate the increase in competitiveness, innovation and economic growth. Second, more successful launches of startups send a positive message to the remaining potential entrepreneurs and increase self-efficacy. However, statistics show that most SMEs do not reach their fifth year of existence and the first year from their establishment appears as most critical for survival.⁹

Many of the listed reasons have characterized the business environment in the EU during and after the hit of the crisis. Moreover, startups founded in crisis years have 4% point higher probability of going bankrupt before the end of the 2nd year.¹⁰ Graph 4 illustrates the change in average survival rates from 2008-2010 in comparison to data from 2005-2007. Unfortunately the data was limited on these fourteen member countries.

Graph 4 Change in average survival rates from 2005-2007 and 2008-2010



Source: Marzocchi et al, SMEs demography, European commission, 2013

⁹ Marzocchi et. al (2013). Brief on SMEs demography, Manchester Institute of Innovation Research, Research MBS, the University of Manchester. UK, European commission.

¹⁰ Vanacker, T., Deloof, M. (2013) The financial and real effects of credit availability for startup firms.

The data presented in Graph 4 indicates low survival rates in Estonia, Sweden, Poland and Slovenia, regardless of their increase in start-up activity in the period of 2008-2010. Poland for instance has reported growth of 12% in startups but with decreasing survival rates of the same by 14% points. This implies that the net result of the startup activity may even have adverse effects on entrepreneurship.

3. FINANCING OPPORTUNITIES AND PROCESS OF REVIVING STARTUPS AFTER THE CRISIS

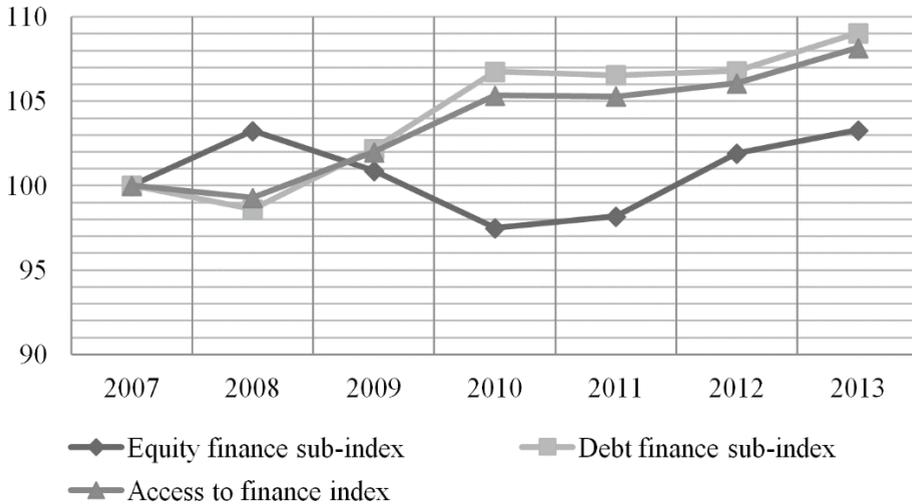
After the hit of the crisis, banks had to focus on strengthening capital bases and rebuilding profitability. Banks become more rigorous in their approaches for credit analysis applying stringent collateral requirements. Additionally, the stricter regulations on capital holdings implied by Basel III made banks highly risk adverse.¹¹ This translated into higher financing obstacles for SMEs. Rejection of loan applications together with receiving only partial funding have been major obstacles identified by SMEs. According to survey covering 25 000 SMEs across the EU, Bulgaria (36%), Ireland (27%) and Latvia (26%) had highest unsuccessful applications rates in 2010. Bulgaria also had the highest drop in success rate of loan applications from 87% in 2010 to 43% in 2007, followed by Ireland, Denmark and Lithuania. Overall, the percentage of successful loan applications dropped across the member states comparing the two years. In contrast, highest success rates had Finland, Poland and France.¹²

Another indicator of the capital availability for SMES is the index on SME Access to Finance (SMAF) developed by the EC (Graph 5).

¹¹ IFF (2013). Restoring financing and growth to Europe's SMEs, Bain & Company, Inc. and the Institute of International Finance, Indinvest (2013). Venture capital in France and Europe.

¹² European commission (2013). "A recovery on the horizon?", " Final Report, Annual report on European SMEs 2012/2013

Graph 5 Index on SMEs Access to Finance, EU-28, 2007 - 2013



Source: Adapted data from EC: http://ec.europa.eu/enterprise/policies/finance/data/enterprise-finance-index/index_en.htm#, Accessed on 15 September, 2016

The index consists of two sub indexes: access to debt finance (ADF) and access to equity finance (AEF). The year of 2007 is taken as basis for comparison since it reflects the time prior the financial turmoil. Graph 5 presents the fluctuations of SMAF together with the two sub indexes. Not surprisingly, the SMAF index hit its lowest point in 2008 at the very outbreak of the FC. The two sub-indexes have had divergent patterns. AEF index reached its peak in 2008 which emphasizes the importance equity financing during the hardest period of credit tightening. However, the index dropped significantly in 2009 before regaining strength in 2010 after which reported a constant incline. In contrast, the ADF index was stagnant from 2009 to 2011 but still at higher level in comparison to the AEF index.¹³

Finally, the hit of the crisis has not only caused tightening of financial supply but has also resulted in weak financial demand from the private sector. Namely, the contracting conditions on the market and the high rejection share of credit applications by SMEs discouraged majority of potential entrepreneurs to pursue their innovative ideas. Chances for financing start-ups with no history of payments, significant collateral or proven profitability of the business were even less optimistic. Furthermore, entrepreneurs'

¹³ Ibid.

avoided going further into debt and postponed the realization of their innovative ideas. The final outcome of the risk reluctant environment was underutilized use of resources which hinders entrepreneurial activity and economic growth.

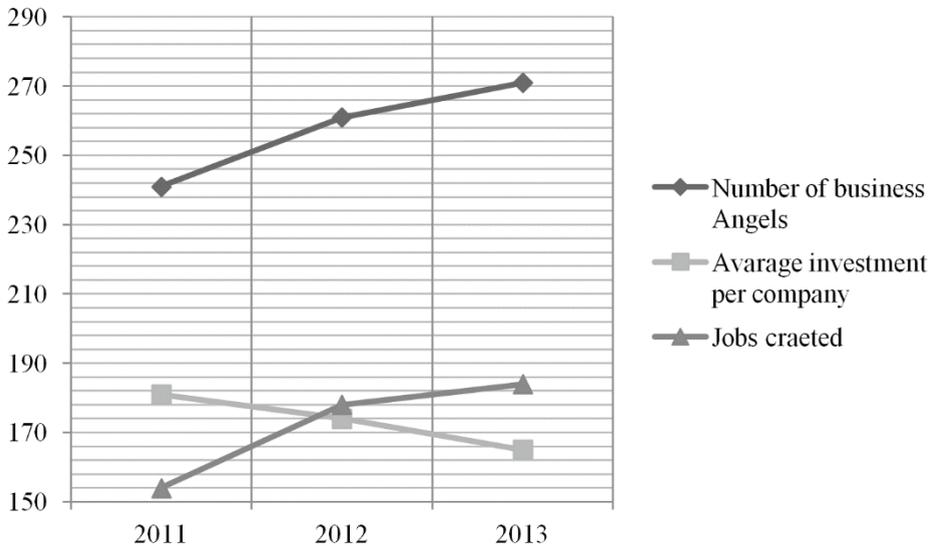
Private equity in the form of BA and VC has been identified as crucial for enabling start-ups access to finance. After the 2008 financial crisis and the tightening of credit availability their importance for start-up financing has amplified. This section provides an overview of the investments made in the early stages of financing on the VC market and BA specifically.

Although, there have been increasing efforts on EU level for directing venture capital investments into new businesses with focus on innovative start-ups, the venture capital market reported an overall decrease of 50% in investments. However, the seed and start-up stage financing held-up better than later-stage financing. Regardless, the early stage financing did not manage to regain pre-crisis level.¹⁴ The reason frequently mentioned has been higher risk aversion by investors in the post crisis environment.

The second source of equity capital we mentioned is BAs. The European Trade Association for Business Angels, Seed Funds, and other Early Stage Market Players (EBAN) provides annual data on BA activity and investment of BA within the network in the European region. According to their latest report the overall BA European Investment market increased 8.7% in 2013. BA investments dominated the early stage of financing with 73% share investing 7.5 billion Euros annually in Europe.

¹⁴ WEF (2014). *Enhancing Europe's Competitiveness Fostering Innovation-driven Entrepreneurship in Europe*, World economic Forum 2014.

Graph 6 BAs activity, EU, 2011-2013



Source: *Statistics Compendium, EBAN, 2014a: p.3.*

The graph shows that while the numbers of BAN has increased in 2013 in comparison with 2011, the average amount invested per company has decreased over the same period. IT has been recognized as financially best performing sector, while the media sector has presented to have biggest employment capacity. However, the data presented refers only to the visible part of the BA market which according to EBAN is only 10%. Note that individual BA outside the European networks also play crucial role in the startup stage and the job creation process, but data on the subject is unavailable. Individual investors often prefer to remain anonymous.

Finally, the distribution of BA investments and their effects in the real economy are not equally distributed across the member countries. UK and Germany which have reported an increase of 24% and 26% respectively in 2013, in comparison with 2012. In *Belgium*, most of SMEs, even startups are financed by bank credits. However, after the crisis there was a decrease of 26.8% in the amount of credit for startups. *Ireland* has established several funds to provide seed and startup capital for companies at their early stage of development such as “The AIB Seed Capital Fund, “The AIB Start-Up Accelerator Fund, “Bank of Ireland MedTech Accelerator Fund and “Enterprise Ireland Fund”. VC investments were concentrated in regions acting as innovation hubs. One example is Berlin in *Germany*,

where venture capital contributed to an increase of 7500 startups in 2012 in comparison to previous year. However, on the long term the volume of the venture capital in both, the early stage and expansion phase has dropped for more than 50% since 2007.¹⁵

In *France*, young innovative startups are exempted from social security taxes as an incentive for entrepreneurship. In addition France has worked towards enhancing university spin-offs from their top engineering schools. Incubators provide students and alumni access to available aid in terms of loans, connections with investors etc.¹⁶

Finally, in *Spain* and *Italy*, fewer businesses were started in 2013 than in 2008 which only confirm these economies have not recovered from the effects of the financial crisis. The Nordic region has been focused on international expansion of their startups encouraging entrepreneurship in the digital economy. The successful stories of Skype and Spotify are expected to draw a wave of investments in similar startups.

In conclusion, the EU, especially the venture market has not yet recovered from the 2008 FC. Member countries have put extensive efforts in support of the private sector with focus on start-ups, but investment amounts have stayed below pre-crisis levels.

Conclusions

The paper at hand gave an overview of the effects of the 2008 FC in the business sector with focus on start-ups. The interconnectedness of the financial crisis was highlighted as the number one reason for the fast spread of the crisis on a wide geographical spread in every field. Star-up activity, as one strategy for decreasing unemployment rates and revival of the economy after the crisis has been analyzed in more details, particularly the hurdles start-ups faced in the recessive economy.

The data presented in the paper indicated that in the addition to the lack of capital, entrepreneurs had high risk aversion which unless compelled to open a business, postponed their innovative ideas for future more stable market conditions. This decreased the start-up activity pro-

¹⁵ Ibid.

¹⁶ IFF (2013). Restoring financing and growth to Europe's SMEs, Bain & Company, Inc. and the Institute of International Finance, Indinvest (2013). Venture capital in France and Europe.

ducing more necessity driven entrepreneurs in contrast to opportunity seeking start-ups. According to Robinson and Grayson's contextual approach the decision for opening a start-up is a complex process which is under the influence of global events, especially how such phenomenon are perceived by potential entrepreneurs. For that reason future research must take into account, not only the general conditions in the environment, but also the cognition process of decision making by entrepreneurs.

The further analysis of sources of financial capital indicated that despite the tightening of the credit availability, bank credits and loans remained dominant financial source, especially in the years after the financial crisis. This indicates that despite the many benefits of alternative financing options, they have not exploited enough by entrepreneurs. The reason may be the lack of networks between start-ups and potential investors in the venture capital market. This requires further research in the area of linkages and their formation. Namely, start-ups often lack of information even in the case of existence of many support programs. Moreover, there is an increasing need for improvement of financial literacy for both entrepreneurs and investors. Both, entrepreneurs and investors should be better informed and educated about the financing and investment opportunities, respectively. Moreover, trainings for business and presentations skills can help future entrepreneurs to deliver sound business propositions in front of potential investors. This would increase their chances for alternative funding from venture capitalist, business angels and crowd-funding organizations.

Finally, the focus should not be only on fostering more start-ups, but linking them with customers, suppliers and other actors in the ecosystem which can provide resources. The aim of future research and policy actions should be in the direction of improving the general picture of business formation, empower entrepreneurs with better business skills and improve the perception of financing opportunities for BA and VC resulting in a better cooperation between all actors in the entrepreneurial environment

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