

Entrepreneurship, innovation and enterprise dynamics Author(s): Mariagrazia Squicciarini Source: *Small Business Economics*, Vol. 48, No. 2, Special Issue: Entrepreneurship, Innovation and Enterprise Dynamics (February 2017), pp. 273–278 Published by: Springer Stable URL: https://www.jstor.org/stable/26154708 Accessed: 22-02-2021 07:19 UTC

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Entrepreneurship, innovation and enterprise dynamics

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Accepted: 7 June 2016/Published online: 28 July 2016 © Springer Science+Business Media New York 2016

Abstract This special issue focuses on entrepreneurship, innovation and enterprise dynamics, as these key components of any prospering economy are at the heart of the current policy discussion. It gathers the latest national and comparative cross-country evidence about: new business venture formation and the role of framework conditions in fostering entrepreneurial activities; the determinants and outcomes of firms' innovative activities and, more generally, of business and innovation dynamics; and the determinants and patterns of post-entry firm growth performance. The contributions synthesised in this introductory piece all rely on sound micro-level data and robust econometrics and propose novel findings that are relevant for policy making. Among them, that risk aversion encourages individuals to invest in balanced skill profiles, making them more likely to become entrepreneurs; and that while micro firms may grow when they are young, they are less likely to do so when old.

KeywordsEntrepreneurship \cdot Innovation \cdot Firmperformance $\cdot R\&D \cdot$ Enterprise dynamics \cdot Policy

Despite today's explosion of new journals and associated scientific publications, it continues to prove hard to find studies scoring high on three critical dimensions that are key for evidence-based policy making—studies relying on sound data and robust econometrics, analyses done at the cross-country level, and findings that are truly relevant for policy making.

Complex econometric methods and estimation strategies often need to be devised in light of poor data quality or availability. This is especially true in cross-country comparative studies where data quality and availability concerns hang on researchers' heads like the sword of Damocles: including one extra country or addressing slightly different questions may command high marginal costs, and progressively so the more the countries that are included. The many trade-offs faced by researchers performing internationally comparable analyses often entail having to rely on small sets of common variables or constraining the analysis to relatively short time spans and to crosssectional observations. Ultimately, these limitations impinge upon the breadth and depth of the hypotheses that can be tested, the quality and robustness of the analysis and, of course, the ability to provide robust evidence in support of policy making.

This special issue is the result of efforts aiming to bring together contributions scoring very high on at least two of the above dimensions, all of which clearly address questions that are at the heart of the current policy discussion. As productivity growth had already

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slowed down across the Organisation for Economic Co-operation and Development (OECD) economies before the 2008 crisis and the economic prospects of OECD countries as well as of other countries worldwide continue to be lacklustre almost a decade after the crisis, many ask whether the 'growth machine' is broken and, if so, how to fix it. 'Pessimists' like Robert Gordon argue that the rapid progress observed over the past two centuries might well have been a unique episode in human history (Gordon 2012). 'Optimists' like Erik Brynjolfsson and Andrew McAfee conversely believe that recent technological breakthroughs have not yet had their full impact on productivity and are confident that digital technologies will produce an even greater prosperity than the one observed during the 'First Machine Age' (Brynjolfsson and McAfee 2014).

As waiting for history to tell who was right is not an option, the OECD continues to strive and gather robust evidence in support of policy making about the new sources of growth (OECD 2013). Among the key components of any prospering economy emerge entrepreneurship, firm dynamics, and innovation determinants and dynamics. Hence, the focus of this special issue, as well as the focus of a linked special issue of the *Journal of Technology Transfer* (forthcoming), is on entrepreneurship, innovation and enterprise dynamics.

The papers contained in these twin issues were first presented at the Conference on "Entrepreneurship, Innovation and Enterprise Dynamics" organised by the OECD Working Party on Industry Analysis (WPIA) in collaboration with Small Business Economics, the Journal of Technology Transfer and the European Commission Joint Research Centre "Institute for Prospective Technological Studies" (JRC-IPTS). The aim of this conference, which took place in Paris in December 2014, was to assemble eminent scholars and gather the latest national and comparative cross-country evidence about: new business venture formation and the role of framework conditions in fostering entrepreneurial activities; the determinants and outcomes of firms' innovative activities and, more generally, of business and innovation dynamics; the determinants and patterns of post-entry firm growth performance; and resource reallocation and growth.

The analyses proposed in what follows all rely on micro-data and on microeconomic approaches. This choice is motivated by the belief that it is by

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understanding determinants and dynamics at the micro-level that macro-level patterns can be uncovered, their drivers unveiled and plausible macroeconomic scenarios formed, for the design of targeted policy and effective policy tools.

1 Entrepreneurship

For his keynote speech paper Link stands on the shoulders of giants (including his own) and identifies the antecedents of entrepreneurship. Past experiences and the way they influence one's mindset and ideas are considered as key starting points, followed by knowledge and education, which help make the connection between ideas and entrepreneurship. Education is not a sufficient condition though, he argues, as it is day-today experience which enables reflection, interpretation, discovery and generalisation, and at times leads to join forces to pursue challenging endeavours. Focusing in particular on the origin of ideas that push firms to form research collaborations with other firms, Link argues that the source of the initial knowledge motivating a specific R&D-based undertaking is directionally correlated with the success of that endeavour. In other words, those R&D organizations for which the idea for the R&D project came from internal sources would outperform R&D organizations for which the idea came from other sources.

Hsieh, Parker and van Praag pursue the entrepreneurship and skills link idea further. Contrary to previous research, they posit that risk aversion actually encourages individuals to invest in balanced skill profiles and makes them more likely to become entrepreneurs, rather than hindering such dynamics. They propose a novel association between the concepts of risk aversion and balanced skills which leads to a richer empirical specification of career choices between entrepreneurship and wage employment. In the presence of market risk, the direct effect of risk aversion induces risk-averse people to choose paid employment over entrepreneurship. Greater risk aversion, however, also eventually makes entrepreneurship more attractive relative to paid employment through the indirect balanced skills channel. This happens because greater risk aversion encourages people facing idiosyncratic risk to acquire more balanced skill sets ex ante and because balanced skills are more valuable in entrepreneurship ex post. Estimates using data on a sample of recent graduates from Dutch universities, homogeneous in terms of education levels and labour market experience, support the hypotheses offered. Hsieh, Parker and van Praag further estimate the percentage increase (decrease) in the likelihood of selfemployment associated with a one standard deviation increase (decrease) in balanced skills (risk aversion) to amount to 26 % (38 %).

Their results may have important implications for policy. On the one hand, they point to the fact that riskaverse people, traditionally considered ill-suited for entrepreneurship, might actually be well-suited for it. On the other hand, they highlight the importance of education systems encouraging the acquisition of balanced skills, since they build valuable future options for students and increase the likelihood that individuals may become entrepreneurs.

Gottschalk, Greene and Müller ask a juxtaposed but complementary question to the one of Hsieh, Parker and van Praag. They investigate the drivers of new firms' closure and the role played by entrepreneurial experience in shaping such patterns. In particular, the focus is on extent to which novice and habitual entrepreneurs differ with respect to the speed of new firm closure and the type of the closure event, with the possibilities being firm survival, voluntary dissolution and bankruptcy. Using large-scale panel data on new German firms, they find that habitual entrepreneurs close new firms just as quickly as novice entrepreneurs and are just as likely to go bankrupt, and that this is true for all types of firms, including high-tech ones. By habitual entrepreneurs, they denote both serial firm founders who previously sold or passed a firm onto a successor and portfolio firm founders who concurrently run other firms besides the new firm.

Gottschalk, Greene and Müller's explanation is that while 'habituals' may indeed learn from experience, such learning is seemingly of little benefit when faced with firm closure contexts that are new to them. 'Maladaptive learning effects' (i.e. inaccurate and faulty inferences about the causes of business performance) may in fact result from entrepreneurs typically focusing on successful rather than unsuccessful outcomes when applying relevant evidence to the current situation; from their generally being over-optimistic and overconfident; and by rarity, idiosyncrasy and complexity characterising entrepreneurial decisions like, for example, devising and implementing new business strategies. Conversely, and importantly, they find that industrial experience (i.e. the years spent working in a certain industry) makes entrepreneurs more likely to survive for longer and to avoid bankruptcy. If these results proved to be generalisable, stakeholders including policy makers and financiers would need to reconsider the role of entrepreneurial experience. In particular, they would need to consider incentivising training and learning related to, for example, business planning activities, as these may improve decision making processes and outcomes of entrepreneurial endeavours.

Åstebro's thought-provoking piece questions the very rationale of policies considering entrepreneurship as a good but less-than-optimally occurring phenomenon, to be financially incentivised. Based on a summary of recent evidence on the private financial gains for entrepreneurs and the private benefits to becoming an entrepreneur, Astebro argues that entrepreneurs are likely to significantly underreport their income and thus mistakenly lead policy makers to think that they need being incentivised to become entrepreneurs, given that working as employees would be more financially rewarding and less risky. He further argues that technological entrepreneurs, the only ones for which such type of public policy might be motivated, are far from being the average type of entrepreneurs that policy generally targets. Astebro's analysis does not encompass the relative public benefits for supporting individuals' transition from unemployment to entrepreneurship and leaves it as an open question for future research.

2 Innovation, R&D and firm performance

But what is that really makes firms competitive, at home or abroad? And what is that makes firms invest in their competitiveness?

Amoroso, Moncada Paternó Castello and Vezzani empirically test a set of theoretical conjectures concerning the impact of risk and uncertainty on business outcomes. Using profit volatility as a measure of risk, they test the risk premium hypothesis whereby risk should be positively correlated with profits, and whether uncertain and ambiguous investment environments negatively affect profits. A second set of hypotheses tested regards the effect of risk and uncertainty on R&D returns. In particular, they test

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whether, as predicted by the risk-bearing rationale, risk yields positive R&D returns and whether the presence of both risk and ambiguity leads to comparatively higher R&D returns than those obtained when ambiguity is not taken into account.

They find that, while private returns to R&D are positive, no statistically significant difference emerges between private returns to R&D and those for ordinary capital. In line with the risk premium hypothesis, they find a positive effect of risk on the earnings of companies, with larger companies that enjoy a higher return to risk than their medium or small counterparts and with the coefficient for smaller firms that is not statistically different from zero. With respect to ambiguity, they argue for the existence of two distinct mechanisms: on the one hand, ambiguity lowers companies' profits as a consequence of more cautious innovative investments; on the other hand, when facing ambiguous scenarios, R&D efforts yield additional premiums to investors.

The evidence provided about returns to R&D being seemingly higher and profits lower in the presence of ambiguity, and the consequent cash constrains that these may determine—especially in the case of smaller, technology-intensive firms operating in an environment characterised by uncertainty—calls for policies facilitating access to finance and helping to address information asymmetries.

More generally, an important question to ask is: Do policies aiming to support the innovative activities of firms work? This is the question that Cin, Kim and Vonortas address by providing empirical evidence on the productivity effect of R&D subsidies. Using large panel data about public subsidies given to Korean manufacturing SMEs during the years 2000-2007, they find a positive and significant effect of R&D subsidies on labour productivity and gather evidence on subsidies having an indirect input additionality effect on private R&D investment. Among others, cost sharing, risk sharing and incentives to invest through the provision of qualitative information to possible investors represent some of the channels through which public subsidies may stimulated private R&D investment and boost labour productivity in manufacturing SMEs.

In addition to providing robust analytical results, Cin, Kim and Vonortas offer a very nice and interesting overview of Korea's development and related policies over the last four decades. Korea is particularly interesting as a case, as learning about its recent development might provide useful insights to policy makers, especially in newly industrialised countries and in emerging economies striving to sustain economic growth. Korea, an economy traditionally dependent on large conglomerates (the so called 'Chaebol'), has in recent years been putting a lot of emphasis on R&D support for SMEs, as a way to foster innovation and growth. A remarkable share of these resources has gone to technology development and innovation and to university–industry R&D collaboration programmes.

University's entrepreneurial activities are also at the centre of *Fini*, *Fu*, *Mathisen*, *Rasmussen and Wright*, who investigate the way framework conditions shape the quantity and quality of university spinoffs. Their analysis, which is grounded in institutional theory, encompasses the full population of universities in Italy, Norway and the UK and relies on panel data covering more than a decade (2000–2012). They find that while changes in framework conditions, measured as changes in the intellectual property rights (IPR) legislation at national level and the establishment of a TTO at university level, may indeed lead to the creation of more spin-offs, more is not always better, and quantity often comes at the expense of the quality of the university-born entrepreneurial endeavours.

Fini, Fu, Mathisen, Rasmussen and Wright manage to disentangle the within- and between-country influences of changes in framework conditions on the quantity and quality of university spin-offs. One of the hypotheses supported by evidence relates to the fact that national contexts characterised by relatively higher uncertainty triggered by more changes in national IPR legislation generate more spin-offs. These, however, are of lower quality than universities acting in a context experiencing less legislative changes. Similarly, they find evidence about universities with technology transfer offices (TTO) generating more spin-offs of lower quality than universities without TTOs and point out to university faculty seemingly complying with local group norms when it comes to involvement in spin-off creation.

The authors question the effect of the presence of TTOs and of legislative changes, as they appear to do more harm than good. They also question the rationale behind the provision of incentives to TTO (e.g. bonuses to create new firms), as such schemes seemingly lower the quality of firms. They argue that,

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to some extent, this could have been expected, given that the underlying commercial potential of the scientific research carried out by the universities remains unchanged. With the caveat that the substantive impact on spin-offs' quality generally needs longer time to manifest, Fini, Fu, Mathisen, Rasmussen and Wright find a negative effect on quality that is stronger than anticipated. Thus, they conclude that changes in institutional frameworks may have detrimental effects on spin-off quality, well beyond a decrease in average quality resulting from the lower quality of the additional spin-offs generated.

3 Enterprise dynamics

Having discussed some policy-relevant questions related to entrepreneurship and firm creation, attention is shifted towards the post-entry performance patterns and determinants, especially firm growth, innovation and market diversification, and the internationalisation of firms.

Criscuolo, Menon and Gal's analysis is based on an approach (the 'OECD DynEmp project') aimed at obtaining internationally comparable data which, while meeting the strict confidentiality rules of national statistical offices, are sufficiently disaggregated as to allow for cross-country micro-aggregated level analysis. The focus here is on the growth dynamics of firms employing less than ten workers, the so-called micro-firms. Results based on 16 OECD countries during the period 2001-2010 show that while only a few micro-firms manage to grow beyond ten employees, these contribute disproportionately to overall job creation. Age emerges as a key feature of companies when employment growth is at stake: young micro-firms, especially those up to 3 years of age, are much more likely to grow above ten employees than older firms. Also, industry-specific dynamics emerge whereby manufacturing young firms tend to grow faster than their services counterparts. Notably, these patterns remain basically unchanged, even during the period of the 2008 crisis.

These findings are extremely important for policy making, not only because the stylised facts that emerge contribute to shed light on 'up or out' dynamics and on the 'cleansing' versus 'scarring' effects of recessions, but also as they underline the importance of the 'age factor'. Policies targeting small firms to stimulate employment growth should not neglect that while micro-firms may grow when they are young, firms are less likely to do so when old.

But, what is that make firms grow? What is that firms do? What do they produce? And which knowledge do they rely upon? These are the questions that Dosi, Grazzi and Moschella address in their article, providing empirical evidence in support of the capability-based theory of the firm. The focus is on the relationship between the expansion of the scope of technological knowledge on the one hand and of product portfolios on the other hand, with the aim to understand the patterns and direction of firm diversification strategies. Using data about Italian exporters and innovators, they find that the overwhelming majority of patenting firms is more specialised in terms of innovative knowledge than products and that technological and product diversification follow loglinear paths. Hence, diversification seemingly unfolds as a branching process characterised by incremental accumulation of capabilities, with high coherence between neighbouring activities, especially for relatively low levels of diversification.

Dosi, Grazzi and Moschella's evidence about competence-driven diversification processes working differently for small and large firms, about the latter being less constrained than small firms in exploring the innovation space and about large and diversified innovators acting in symbiosis with relatively narrowly specialised firms calls for systemic innovation policies able to leverage on the market and innovation capabilities of all actors involved, to foster economic growth.

Hagsten and Kotnik investigate a complementary research question to the one addressed by Dosi, Grazzi and Moschella. The focus is on the role of information and communication technologies (ICTs) in shaping the internationalisation of small and medium enterprises (SMEs), intended as firms' decision to export and export intensity. The analysis encompasses firms in manufacturing and services industries in 12 European countries, exporting both goods and services. Results suggest that the decision to export is in most countries related to the online presence of firms, i.e. to having a website, while engaging in online transactions is more important for export intensity. Internal factors such as having employees with an ICT-related education or being connected to broadband internet are also positively associated with the exports behaviour.

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While seemingly contradictory as a statement, I would argue that the main result of this study is the absence of a generally valid result: no common pattern emerges across the countries considered about the way in which ICT relates to the exports behaviours of small and medium firms. This calls for further research and for a better understanding of the role of ICTs for export.

4 Shedding light to learn and improve

Policy making is never easy, possibly even less so if related to entrepreneurship, innovation and enterprise dynamics. When it comes to these complex and multifaceted concepts, the possibility to implement coordinated policies relying on solid evidence is often hindered by the lack of sufficiently generalisable results-fact that we try and partially address in this special issue-and by policy design and implementation often happening in 'silos'. Coordination costs; differences in the time horizons and/or objectives pursued; available resources; need for accountability; the difficulty to look at the broader picture and to identify key actors and mechanisms, as well as complementarities and substitutabilities; and differences in the definition of what represents a successful outcome contribute to explain why encompassing and effective policies are hard to devise.

Also, it should be acknowledged (with a bit of a 'mea culpa') that economists frequently reply to any question, both policy relevant and not, with a 'it depends'. This evidently does not help stakeholders, who may be less knowledgeable or informed about the phenomenon with respect to which they seek expert

advice, form a clear picture about what to do and what to avoid.

Clear-cut, empirically robust, internationally comparable and policy-relevant evidence is as precious as scarce. This makes the efforts of journals like Small Business Economics to publish such type of evidence commendable as well as societal welfare enhancing. While the general public easily understands that bad health care may lead people to die and bad engineering may result in bridges falling or dams breaking, few realise the full extent to which lack of robust economic evidence may lead to unsuccessful-at best, if not distortive-policies. These may ultimately mean less jobs, worse firm and economic performance, more inequality and, more generally, less of all that is welfare enhancing. This is true in the short as well as in the medium to long term, with the additional 'curse' that negative trends may be difficult to revert, as the recent crisis has made clear.

It is well aware of these challenges, and of the usefulness and importance of studies like the ones contained in this special issue, that I wish all a good read.

References

- Brynjolfsson, E., & McAfee, A. (2014). The second machine age: Work, progress, and prosperity in a time of brilliant technologies. New York: W. W. Norton & Company.
- Gordon, R. J. (2012). Is U.S. economic growth over? Faltering innovation confronts the six headwinds. NBER Working Paper No. 18315 August.
- OECD. (2013). Supporting investment in knowledge capital, growth and innovation. Paris: OECD Publishing. doi:10. 1787/9789264193307-en.