

## Policy rationales and objectives for innovative entrepreneurship

Innovative entrepreneurship can play a critical role in the economy and society by supporting economic growth, employment, and poverty reduction, by contributing to solutions to social challenges, and by formalizing the informal sector. Policy may aim at correcting for market failures (e.g. failures arising from informational imperfections and positive externalities of knowledge creation) that negatively affect the performance of innovative entrepreneurs. Yet public intervention can be subject to policy failures. Therefore, the soundness of government intervention's foundations and achievements need to be scrutinized ex ante and ex post. Specific rationales pertain to policy interventions that address various conditions for innovative entrepreneurship: i.e. access to labour, entrepreneurial capabilities and culture, administrative framework, access to knowledge, access to finance, and market development and access.

### Importance of innovative entrepreneurship to economic growth and social welfare

Innovative entrepreneurship is a driver of economic growth and an important basis for developing solutions to economic and social challenges, such as climate change, ageing societies and poverty (OECD, 2010a). Innovative entrepreneurs can play a critical role by supporting a) **economic growth**, b) **employment**, c) **poverty reduction**, d) **contributions to social challenges**, e) **formalizing the informal sector**. To name but a few examples, new firm entry can contribute to upgrading the aggregate productivity of the economy by displacing firms with lower productivity and placing incumbents under competitive threat. New spin-off ventures enable the commercialisation of knowledge created by large firms, universities and research organizations, which would otherwise remain unused. New and small firms are also key players not just as knowledge exploiters but also as knowledge sources, often playing a fundamental role in breakthrough innovations.

### Approaches to public policies

#### Market failures requiring policy intervention

Policy might be implemented to correct for a set of market failures that negatively affect the performance of innovative entrepreneurs. A major underlying justification for public intervention is that the market will otherwise invest in entrepreneurial and innovative activities at less than the socially desirable level (Nelson, 1959; Arrow, 1962). The main reasons why this might occur include:

- **Imperfect appropriability of knowledge creation due to positive externalities.** Due to the non-rivalry nature of many knowledge creations (i.e. the fact that the use of one piece of knowledge does not prevent its simultaneous use by another party), knowledge can generate spillovers: not only does the innovator benefit but also other agents, such as competitors and follow-on innovators. Unless otherwise compensated (e.g. by monopoly rights created by the IP system or grants for conducting innovation), this means that the social rate of return for knowledge production may exceed the private rate of return and, therefore, investment in the production of new knowledge would be below the socially optimal level. The issue of imperfect appropriability of knowledge creation is likely to be even greater for innovative entrepreneurs, since they may lack assets to protect their innovations from imitation (e.g. small firms are often disadvantaged when it comes to enforcing their IP rights due to the fixed costs involved).
- **Informational imperfections.** Information asymmetries occur when one party to a transaction has access to relevant information that the other party does not. These information asymmetries may discourage agents from conducting market transactions despite the higher value that could consequently be created. The extent of information

asymmetry associated with investments in innovation is typically larger than that associated with other investments, such as those in physical capital (e.g. property, plant, and equipment). This is because i) innovative investments are relatively unique and their value is often, by nature, uncertain, and ii) because the imperfect appropriability of innovation typically deters innovative firms from disclosing information about their innovative activities and knowledge. Certain institutions, such as the patent system, may help to mitigate this asymmetry by providing some guarantee to suppliers of knowledge that disclosing knowledge will not undermine their ability to consent to the transfer or sharing of knowledge.

- **Multiple other market failures** can hinder the success of innovative entrepreneurs. For instance, there might be a lack of access to finance for innovation or a lack of a suitable support infrastructure (e.g. research institutions with the capacity to support firms in their innovation). Small innovative firms may be disadvantaged, since they are more likely to be exposed to some of these market failures or, unlike larger firms, lack the assets that could help overcome them (e.g. limited resources to build internal research capabilities). The costs required to address some of these shortcomings (notably those related to infrastructure) might not be affordable for individual entrepreneurs, even if there are clear benefits for all. Therefore, market failures require collective intervention to avoid co-ordination failures in addressing them.

### System failures requiring policy interventions

The challenges facing innovative entrepreneurs can be identified from a systems failure perspective:

- **Network failures.** These deal with problems in the interaction among actors in the innovation system. They relate to such phenomena as weak links between system actors, lock-in/path dependency failures (which refer to the inability of complete [social] systems to adapt to new technological paradigms) and transition failures (the inability of firms to adapt to new technological developments).
- **Institutional failures.** These include the failure to configure public institutions, such as universities and research institutes, so that they work effectively within the innovation system. This also relates to institutional failures in the governance of innovation systems themselves. These challenges might be addressed by specific measures but also sound a note of caution for ambitious policy interventions.
- **Framework failures.** These refer to deficiencies in regulatory frameworks (e.g. health and safety rules) and in other background conditions (e.g. culture and social values) that can have a negative effect on innovation and economic performance.

### Limitations of policy interventions

Not all potential failures in innovation systems make government intervention required or even desirable. There is no guarantee that government policy can address each market or systemic failure in a way that effectively improves the outcome (in welfare terms, for instance). Furthermore, governments' means and scope of action can be very limited. Even when governments may potentially improve welfare, they do not always have the means to do so in practice (Dixit, 1996).

Besides, policy failure (i.e. the failure of a policy to achieve its goals) may arise from a wide range of factors, such as inadequate policy design, implementation, and governance failure. These policy failures may be due to contradictory goals, limited capabilities and information constraints that may limit governments' ability to intervene effectively. Indeed, government is subject to sometimes even more stringent informational constraints than are private actors. These policy failures imply that government interventions can be counterproductive. Therefore, the soundness of the foundations and the achievements of government intervention need to be scrutinized ex ante and ex post. The choice of policy instrument should also reflect potential constraints (e.g. research grants require a more knowledge-based approach by governments than IP support).

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## Specific rationales for public policies

### Access to finance

Beyond the market failure affecting R&D investment associated with R&D spillovers, the main rationale for public support regarding access to finance is the possibility that investments in innovative and entrepreneurial activities are liquidity constrained due to capital market imperfections. Capital markets can be inefficient and potentially profitable projects might not be financed. Small and innovative ventures may be particularly affected by these market imperfections, since they typically lack collateral and a track record, are involved in an innovation process whose outcomes are uncertain, deal with a public good (knowledge) whose returns on investment are not perfectly appropriable, and own assets whose nature may be intangible and difficult to measure (e.g. patents and copyrights) (Auerswald, 2007).

One of the main reasons for capital market imperfections is the risk arising from information asymmetries between lenders/investors and entrepreneurs, and higher transaction costs. Lenders are not easily able to separate potentially successful businesses from less successful ones, and therefore may provide less funding than the company needs and require a higher interest rate. This, in turn, can increase the risk of the borrowers and create a greater share of higher risk firms in the pool of borrowers (adverse selection). On the other hand, lenders can't be sure that once the funds are loaned, entrepreneurs will not take excessive risks or misuse the funds (moral hazard). One way for lenders to overcome the problems associated with information asymmetries is by requiring collateral. However, providing collateral might not be possible for entrepreneurs and young innovative firms, especially if their main assets are intangible. Therefore, these firms are likely to be credit constrained, despite their project quality and growth potential.

In this context of market imperfections, public policies can facilitate access to finance through a wide range of instruments, including the provision of public grants. Yet crowding out can occur, if diminishing marginal returns from R&D cause grant holders to reduce their own funding for R&D expenditures one-for-one with public funds. For some firms, government funding may just be a cheaper source of finance than funding raised from capital markets (Lach, 2002).

### Access to knowledge

One of the key drivers of innovative entrepreneurship is knowledge exchange between and among explorers and exploiters, particularly for the exploitation of new, science-based knowledge. Yet several system failures may affect this knowledge exchange and the consequent interactive learning (Potter, 2005). These system failures include a lack of infrastructure for knowledge generation and transfer (e.g. universities and science parks), a lack of capability in firms to absorb external knowledge (e.g. workforce skills for identifying and collaborating with partners, and using external information about promising markets and technologies), a lack of complementarity between the knowledge exploration and exploitation sub-systems (e.g. lack of fit between university research and the specialties of firms), and a lack of intellectual property protection, leading to a high risk of involuntary knowledge leakage during technological collaboration between firms.

These system failures imply the need for policy attention to knowledge transfers and networking problems in innovation systems. Examples of policy approaches include facilitating knowledge exploitation through licenses, patents and university spin-offs, encouraging mobility of staff between universities and industry, and supporting technological collaborations between firms.

### Access to labour

A lack of skilled labour and a mismatch in supply and demand for skills can hinder innovative

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entrepreneurship.

Policy objectives can include enlarging the size of the highly skilled workforce, facilitating its mobility in order to optimize the use of human resources, facilitating the cross-fertilisation of ideas and learning, and addressing structural mismatches in supply and demand for skills.

#### **Entrepreneurial capabilities and culture**

A lack of entrepreneurial skills and a negative attitude toward entrepreneurial activity within a society (e.g. when an entrepreneur's failure is seen as critical and something to fear) can affect the creation and success of innovative new ventures. Policies can address these systemic failures by developing education and training systems to foster a positive attitude towards entrepreneurial risk taking and the acceptance of failure.

In addition, markets may fail to supply adequate services and advice to entrepreneurs. Policy can rectify this situation by providing business support infrastructure (e.g. business incubators, science parks).

#### **Market development and access**

The rationale for demand-side innovation policies based on public procurement, standards and regulations is linked in general terms to the need to stimulate innovation in areas where societal needs are pressing (e.g. health, environment) and where government action can complement market mechanisms with, ideally, minimal financial outlays. But specific rationales pertain to individual demand-side instruments. For example, innovation-oriented public procurement can be designed to help counter gaps in the supply of risk finance for small, early stage ventures. Such procurement can also be structured to help offset biases against SMEs in public procurement. Procurement processes can also help accelerate the emergence of technologies for which there is an urgent, time-bound societal need. By contrast, the rationale for government action in the area of technical standards is somewhat different, corresponding to public-good characteristics possessed by such standards. The development of standards is likely to experience some degree of market failure. By itself, the market may provide too few standards. Creating standards entails fixed costs, while the gains may not be appropriable by the individual firm.

#### **Regulatory Framework**

Framework failures, including deficiencies in regulatory frameworks (e.g. administrative framework for entry and growth, taxation regime), can have a negative effect on innovative entrepreneurship. For instance, unbalanced taxes on company profits and losses, and high average tax rates on SMEs relative to large firms, can diminish SME and entrepreneurship activity (OECD, 2009).

Policies may limit these barriers to innovative entrepreneurship by establishing appropriate taxation regimes and promoting administrative simplification.

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