

## Start-ups and innovative entrepreneurship

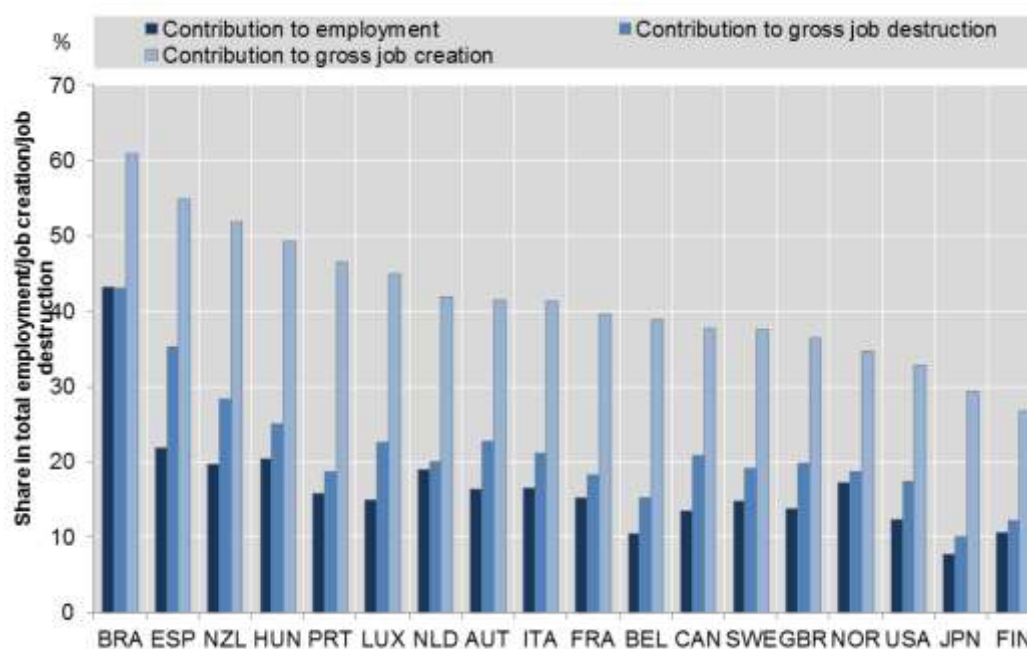
### Rationale and objectives

Entrepreneurship is a major driver of innovation, productivity growth and job creation. Innovative start-ups bring new ideas into the market, in some cases tapping into knowledge generated but not commercialised by existing firms (Acs *et al.*, 2013), generate high-wage employment and wield competitive pressure on existing enterprises, forcing them to stay abreast of market developments or exit the market. This process, which Schumpeter called “creative destruction”, contributes to productivity growth by improving resource allocation in the economy. There is also evidence of a positive empirical relationship between the rate of business entry and exit and productivity growth in an economy (Bartelsman *et al.*, 2009; Erken *et al.*, 2014).

New OECD evidence indicates that most new jobs are created in young small and medium-sized enterprises (SMEs) (see Figure 1). Young firms less than five years old have only represented about 20% of non-financial business sector employment over the last decade but have generated nearly half of all new jobs (Criscuolo *et al.*, 2014). This disproportionate impact partly reflects “up or out” dynamics typical of young businesses: most start-ups exit within 5 years (OECD, 2015a), but those that survive grow faster than the average and add more than proportionally to employment and productivity growth (Decker *et al.*, 2013).


**Figure 1.** Young SMEs contribute disproportionately to job creation

Employment, gross job creation and gross job destruction by young small and medium sized firms, 2001-11



Source: Criscuolo, C., P. Gal and C. Menon (2014), “The Dynamics of Employment Growth: New Evidence from 18 Countries”, OECD Science, Technology and Industry Policy Papers no. 14, OECD Publishing, <http://dx.doi.org/10.1787/5jz417hj6hg6-en>.

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However, start-ups and young firms face obstacles to their development, including regulatory barriers, administrative burdens, lack of finance and skills, which can be especially severe for innovative entrants, owing to market and technological uncertainty. The regulatory protection of incumbents, the complexity of regulatory procedures (e.g. a tangled business license and permit system) and an inefficient bankruptcy regime can represent major barriers to market entry, experimentation and exit, when needed. In the seed and early stages of the business, information asymmetries, lack of collateral and track record typically limit the ability of new entrepreneurs to access external sources of funding. Managerial skills deficiencies often represent an obstacle for new entrepreneurs to leverage their own, cumulated, context-specific knowledge with external sources of ideas and paths to market. Furthermore, because of the knowledge spill-overs involved in entrepreneurship, entrepreneurs may not seize the whole returns of their business creation, i.e. social returns can be higher than private returns. This may lead to underinvestment in entrepreneurship. These market failures and institutional barriers provide a case for policy makers' support of entrepreneurship.

At the same time, there are also those who caution against public policies which encourage more people to become entrepreneurs. The main argument is that public policies such as tax incentives aimed widely at entrepreneurs in general largely reward those already intent on becoming entrepreneurs and mostly generate micro-enterprises with low growth intentions, for example by reducing the pre-tax rate of return that entrepreneurs require to launch a new venture (Acs *et al.*, 2016; Shane, 2009; Parker, 2007). If entrepreneurship policies have limited additionality and limited impact on growth then they will represent ineffective public spending. On the other hand, policy evaluation literature points to positive results on firm performance and job creation from many specific business support intervention that address real market and institutional failures, such as training and technical assistance, access to credit and innovation support (Cravo and Piza, 2016).

## Major aspects and instruments

Start-up and innovative entrepreneurship policies have the objective of improving the business environment for or providing direct services and support to future, nascent and young entrepreneurs. They can be grouped in three categories:

- Policies that shape opportunity recognition: they include entrepreneurship promotion (e.g. awareness-raising campaigns, awards programmes and entrepreneurship events), entrepreneurship education (i.e. from primary to tertiary education, including vocational and educational training), and information and advice on business creation (e.g. mentoring and coaching, including through business incubation). More indirectly, they also encompass employment protection legislation and the extent to which this affects the career choice between wage employment and self-employment (*i.e.* the opportunity cost of entrepreneurship).
- Policies that influence market entry: they primarily involve competition policy (e.g. anti-trust laws), business regulations (e.g. licences and fees required of new firms, bankruptcy legislation), the extent to which tax policy favours new business creation (e.g. different income tax treatment between young/small firms and established/large firms), and whether intellectual property legislation supports research commercialisation and knowledge-based start-ups.
- Policies that affect early business growth: they include policies affecting technology development (e.g. whether R&D tax breaks do not penalise young firms with little taxable income), public procurement (e.g. whether it is accessible to young and small enterprises), the availability of a broad range of financing instruments, particularly equity finance (e.g. through favourable capital gains taxation), and business management advisory services. Finally, start-up policies increasingly target certain segments of the population, on the assumption that there is an entrepreneurial gap in some groups of the population such as women, youth or immigrants (OECD/EC, 2015), or that some people are more likely than others to form companies that generate value (e.g. faculty and students in the case of university spinoffs or former employees in the case of corporate spin-offs). Targeted entrepreneurship policies tend to combine different elements of the three above-mentioned categories.

**Table 1.** Financing start-ups and innovative entrepreneurship: typology of policy instruments and some country examples

Financing Instruments		Key Features	Policy Examples 2016
Direct financing	Grants, Subsidies	Used as seed and early stage funding for innovative start-ups and SMEs in most countries, filling financing gap between innovators and investors. Provide relatively small amount of money for feasibility study, proof of concept and prototype development. Awards are generally granted on an open and competitive basis.	ANR PDT (Argentina), Commercialisation Australia, Austrian Federal Promotional Bank's Seed Financing programme (Austria), Young Innovative Company Funding (Finland), Partnership Funds (Ireland), Repayable Grants for Start-ups (New Zealand)
	Venture Capital	Public venture capital (PVC) provides strategic funds especially designed for accelerating entrepreneurial activities at the seed & early stage. In contrast, private venture capital provides equity finance targeting at later, less risky stages. Public venture capital funds are often managed by private fund managers. Exits can be made in M&A or IPO (initial public offering). Corporate venture is another exit channel.	INOVAR (BRA), Innofund (China), Venture Capital Programme (Colombia), National Innovation Fund (Czech Rep.), Tekes Venture Capital Activities for Start-ups (Finland), Italia Venture I (Italy), R&D Support Programme for Corporate Growth (Korea), Dutch Venture Initiatives (Netherlands)
	Loan/Loan guarantee	Used as one of the most common tools for access to finance for entrepreneurial companies during the entire technology life cycle. Loans must be paid back with the principal and interest. Governments can either offer reduced interest rate loans (soft loans) or make loans repayable only on the condition of success. Governments often provide loan guarantees for start-ups and SMEs due to the lack of collateral or track record.	Loan Service for R&I (EU), Micro Loan Support Programme (Latvia), Vaekstfonden (Denmark), Startup Peru (Peru), Loan Fund for Start-ups (Poland)
	Public procurement	Help start-ups bridge the pre-commercialisation gap for their products and services by awarding contracts for pre-commercial innovations (i.e. first sales of technology), help them achieve the critical mass needed to bring prices down and be competitive, and contribute to making access to private third-party funding easier.	Entrepreneur Growth Strategy (Estonia), Small Business Innovation Research (Netherlands), Strategy for Public Procurement (Sweden)
Indirect financing	Tax incentives	Used as a useful instrument combined with direct government finance in most countries. Provide a broad range of tax incentives such as exemption of personal or corporate income tax, or capital gains tax depending on the nature of intended policy objective, focusing on stimulating private investment in R&D and innovative, entrepreneurial activities.	Early Stage Venture Capital Limited Partnerships (Australia), Seed Capital Scheme (Ireland), Tax Incentive for Investment in SMEs (Iceland)
Third Party financing	Crowdfunding	Used as a collective fund-raising tool via the internet enabled by advances in ICT and social networks. It is growing rapidly and allows even novice entrepreneurs to get access to finance; it engages people with science & innovation. However, it requires regulatory regime such as increased scientific integrity, largely due to the possibility of cyber fraud.	Over 2000 platforms under operation globally, i.e. AngelList, Early Shares, CircleUp (USA) and CrowdCube, Seedrs (UK). Policy examples include the Law on alternative financing and crowdinvesting ("Alternativfinanzierungsgesetz") (Austria), StartUpGreece, and Precipita (Spain).

*Note:* This table draws upon recent analytical works on the innovation policy mix carried out for the OECD STI Outlook under the aegis of the OECD Committee for Scientific and Technological Policy. Country information is drawn from the EC/OECD International Science, Technology and Innovation Policy (STIP) Database, edition 2016, <https://www.innovationpolicyplatform.org/topic-menu/sti-policy-database>.

*Source:* based on Kergroach et al. (forthcoming-a) and EC/OECD (forthcoming). Recent policy trends As to encourage innovative entrepreneurship, governments have particularly focused efforts over the past two years on improving their capital of entrepreneurial skills and developing a culture of innovation and entrepreneurship (see the policy profiles *Strengthening education and skills for innovation* and *Building a science and innovation culture*). Improving access of SMEs to international knowledge networks has also be a substantial area of change (Figure 2).

Entrepreneurship education is most often delivered through ad-hoc local initiatives. However, some countries have started to formally introduce it in their national curricula. Finland has been a pioneer in this field, making entrepreneurship education part of the national curricula of primary and secondary schools, while more recently Spain passed in 2014 the Organic Law for the Improvement of the Quality of Education in which one of the seven core competences to be prioritised throughout primary and secondary education is “sense of initiative and entrepreneurship”. In the area of information and advice, Israel launched in 2013 the MAOF small business centres with a budget of USD 48 million (NIS 195 million) over the period 2013-15. These centres have made an effort to rationalise and standardise the offer of government-supported business advisory services (OECD, 2016a, forthcoming).





## Recent policy trends

A common trend is observed in the OECD area towards easing business creation and expansion such as by reducing the level of fees, minimum capital requirement and time to register a business and start commercial operation, and simplifying the licensing procedures. In Chile, a law entered into force in May 2013, which allows the creation of a firm in one day, with a single-step, minimal red-tape and at zero cost through a virtual one-stop shop. In Peru, the 2014 National Plan for Production Diversification plans a better adequation of regulations and a simplification of administrative procedures with public entities, with a view of improving the investment climate (EC/OECD, 2016). In several countries, reforms in bankruptcy regulation have been introduced to improve efficiency of bankruptcy procedures and favour a second chance for honest entrepreneurs. These include, for instance, reduction in the time for discharge (i.e. the time between liquidation and formal cancellation of debt), which decreases the administrative burden imposed on entrepreneurs in the course of bankruptcy procedures, and makes the whole discharge process smoother. For instance, in Austria, discharge takes place automatically at the payment of the quota agreed upon in the enterprise insolvency proceeding (Ecorys, 2014). Access to financing is crucial for creating and growing an innovative business, in particular at the seed and early stages. Most OECD countries apply a single statutory corporate income tax rate (CIT) to taxable profits of incorporated businesses, regardless of their size or age. However, twelve OECD countries have small business CIT rates, which apply to SME income under a certain threshold (OECD, 2015). The most generous small business CIT rates, based on the difference between this rate and the standard CIT rate, are found in Canada, Hungary, France and Korea. Other countries have made the tax system easier for small business by facilitating tax compliance. In Denmark, the software EasySME enables small business owners to obtain a fiscal overview of the situation of their business, thereby making it easier to comply with tax legislation (OECD, 2015).

Some countries have adopted a more targeted approach. Various types of financial support are provided to new technology-based firms or young firms engaged in R&D activities.

- Italy has reduced taxation, social contributions and registration fees for R&D-based start-ups via the “innovative start-up legislation” (OECD, 2014a). In Belgium, the fiscal aid for young innovative companies that foresaw a reduction of 50% on the advance tax payment for all research and technical staff has been raised to 75% (EC/OECD, 2016). France has implemented in 2014 an Innovation Tax Credit that focuses specifically on pre-industrialisation expenditure (e.g. development of prototypes) and that complements its R&D tax credit scheme. In addition the Young Innovative Firm scheme has been revised as to make the full exemption of social security contributions on wages paid to research employees more perennial.
- The Netherlands targets young firms through its Challenger Facility programme and provides credit for innovative but risky projects that do not fit in its other innovation programmes.
- In 2014 Peru has implemented a public funded programme for start-ups in order to provide seed finance for technological ideas and projects and create a start-up market. Turkey has entered the final phase of its Individual Entrepreneurship Support Programme that aims to encourage technological and academic entrepreneurship and to increase the survival rate of new technology based firms by providing seed capital, as well as mentorship and relevant business courses.

Targeted approach toward non-technological innovation is less common. As part of its plan “A new deal for innovation”, launched in 2014, France provides financial support to entrepreneurs for the maturation of non-technological innovation projects, and for facilitating their market entry.

New institutional investors and sovereign wealth funds can also be sources of innovation financing. The Internet is providing new channels for financing small ventures through crowdfunding. In the United States, new legislation on crowdfunding (the JOBS Act in 2012) has drawn growing attention to this phenomenon, both in that country and elsewhere. Crowdfunding is rapidly emerging as a complementary source of funding (OECD, 2014b). Although it is still in its infancy, there are already more than 700 crowdfunding platforms worldwide. Besides providing research and seed funding, crowdfunding also plays a role in linking and engaging citizens with science.

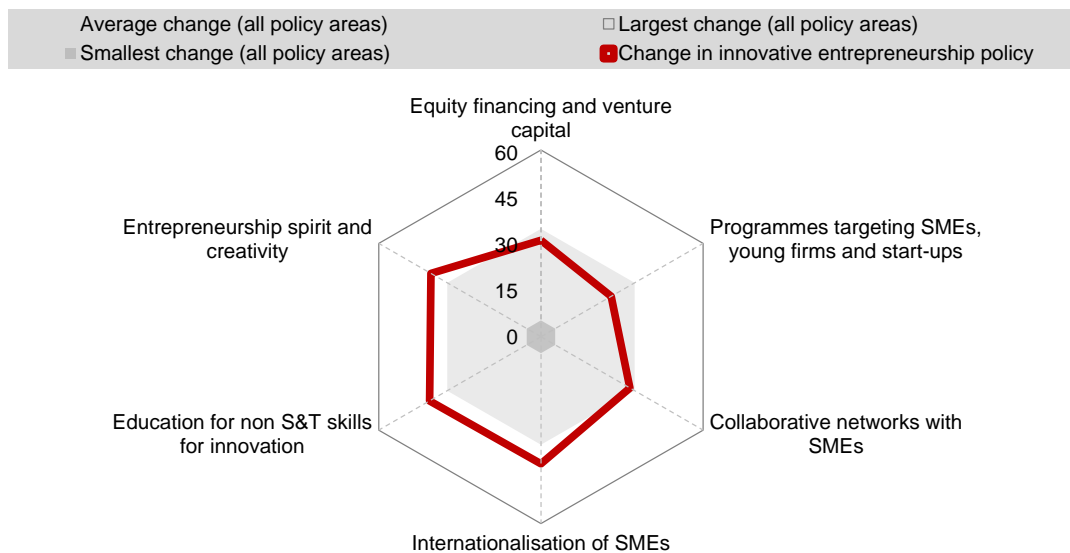
Many OECD countries have introduced small-scale business accelerator programmes with the aim to support growth-oriented innovative firms (OECD, 2013). Business accelerators tend to address at once some of the main challenges that face high-growth firms, such as the improvement of managerial competences, the development of professional networks, and the provision of equity finance. In Finland, for example, the Vigo Accelerator programme supports the creation of a national network of business accelerator teams

which raise and invest their own funds to take equity stakes in new business ventures. Public funds are mostly provided only for coordination activities, although other public sector agencies, notably Tekes and Finnvera, are committed to fast-tracking applications for innovation funding from Vigo-backed firms.

Finally, entrepreneurship support programmes that target specific population groups have gained in importance since the 2008 global recession. Greece, for example, launched in December 2013 a scheme budgeted with USD 32.5 million PPP (EUR 20 million) to support the creation of innovative businesses by young unemployed people. The scheme provides funding (a grant of EUR 10 000) and training to this target group, also based on the level of innovation of the business proposals (OECD/European Commission, 2015). Canada announced in 2015 the Action Plan for Women Entrepreneurs. The Action Plan includes measures to foster networking, encourage mentorship, enhance access to international markets through trade missions and provide finance through USD 574 million PPP (CAD 700 million) earmarked over 3 years by the Business Development Bank of Canada for women-owned businesses (OECD 2016b, forthcoming).

**Figure 2. Innovative entrepreneurship policies among other areas of STI policy change, 2014-16**

Percentage of policy initiatives that have been newly introduced, revised or repealed over the period



*Note:* The EC/OECD STI Policy survey 2016 aims to review major changes in national policy portfolio and governance arrangements for STI. The survey builds on the conceptual work carried on under the aegis of the OECD Committee for Scientific and Technological Policy (CSTP) for mapping the policy mix for innovation and therefore covers a broad range of policy areas (Kergroach et al., forthcoming-a). 52 economies participated in 2016, including OECD countries, key emerging economies (e.g. Argentina, Brazil, the People’s Republic of China, Colombia, Costa Rica, Egypt, India, Indonesia, Malaysia, Peru, the Russian Federation, South Africa and Thailand), non-OECD EU Member States, and the European Commission. Taken together, the countries covered in the STIP survey 2016 account for an estimated 98% of global R&D. The responses are provided by CSTP Delegates and European Research and Innovation Committee (ERAC) Delegates for EU non-OECD countries.

This is an experimental indicator that accounts for the number of major policy initiatives implemented, repealed or substantially revised during 2014-16 as a share of total policy initiatives active at the beginning of the period. Although simple counts do not account for the magnitude and impact of policy changes, this ratio reflects STI policy focus and activity in specific policy areas and over specific periods of time. The chart above shows the intensity of changes in the policy area(s) under review as compared to the whole policy mix for innovation. Changes in the whole mapping are represented by the smallest, the largest and the average changes observed in all policy areas taken together.

*Source:* Based on EC/OECD (forthcoming), International Database on STI Policies (STIP); and Kergroach et al. (forthcoming-b).

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