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**POLICIES FOR SEED AND EARLY STAGE FINANCE: SUMMARY OF THE 2012 OECD
FINANCING QUESTIONNAIRE**

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This paper provides a summary of the results of the 2012 OECD Financing Questionnaire, a joint initiative between STI and ECO. The majority of the OECD member countries completed the questionnaire (32 out of 34) as well as the more detailed follow-up questionnaires on financing instruments. The questionnaires can be found in a separate annex (DSTI/IND(2013)5/ANN).

CIIE delegates are invited to comment on the paper and discuss the following questions:

- Support for seed and early stage financing instruments in OECD countries has grown over the past five years. How are the outcomes of these support programmes being measured?*
- To date, few of the tax and equity programmes have been evaluated. Is further evaluation warranted? What type of evaluation would be most effective?*
- What is the appropriate policy mix to foster seed and early stage financing?*
- What other analysis should be undertaken on the basis of the questionnaire?*

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POLICIES FOR SEED AND EARLY STAGE FINANCE: SUMMARY OF THE 2012 OECD FINANCING QUESTIONNAIRE

Executive Summary

1. Young innovative firms face many difficulties accessing seed and early stage finance and these have increased over the past five years. Banks have been less willing than normal to provide loans to start-ups as a result of the financial crisis. Meanwhile venture capital firms have become more risk adverse due to pressures on the industry and have focused on later stage investments. Angel investors have become more visible and active through groups, syndicates and networks but also face difficulties. As a result, governments in many OECD countries have sought to address the financing gap and perceived market failures by supporting the seed and early stage market.

2. In 2012, the OECD sent a questionnaire on seed and early stage financing to the 34 OECD member countries, which was answered by 32 countries. The financing questionnaire sought to identify the set of policy interventions which OECD member countries have in place and how these have changed over time. While the questionnaire focused on collecting details about supply side measures, it also included sections on regulatory barriers and demand side actions:

- ***Supply side interventions***
 - Grants, loans, guarantees
 - Tax incentives (YIC, front and back-end incentives)
 - Equity instruments (direct public funds, fund-of-funds, co-investment funds)
- ***Regulatory and administrative barriers***
 - Framework conditions and exit markets
 - Restrictions on investment in the seed and early stage
- ***Demand side interventions***
 - Human capital development (for entrepreneurs and investors)
 - Social capital development (facilitating links between entrepreneurs and investors)

3. Financing for innovative start-ups is complex as different financing instruments are needed for various stages of the firm's development. Policy makers in a number of OECD countries have sought to address the prevailing seed and early stage financing gaps by intervening in multiple areas simultaneously. Therefore policy interventions should not be seen in isolation but as a set of interacting policies. Evaluation and periodic adjustment of the specific policy instruments as well as the full policy mix would be optimal but is challenging in practice.

4. A number of countries have begun streamlining their growing set of seed and early stage policies, in some cases putting them under one umbrella. However, changes in policies might be driven not only by market conditions but also by the political cycle. Consistent, long-term policies are important to provide the appropriate incentives to invest in seed and early stage firms.

5. The questionnaire results showed that supply side policy interventions have increased in the past five years in many OECD countries. In fact, policy interventions in seed and early stage finance seem to focus heavily on supply side measures which may be perceived as being more visible and direct.

6. The majority of OECD countries have had grants, loans and/or guarantee schemes in place for many years. The questionnaire showed that support for these programmes has increased over the past five years. Work by the WPSMEE has shown that this increase is a direct result of the recent financial crisis.

7. The questionnaire also showed some increases in tax incentive programmes in some OECD countries, including young innovative company schemes (YIC) as well as “front-end” (incentives for investments in start-ups) and “back-end” (capital gains tax provisions, rollover and carry-forward of gains or losses) tax incentives. To date, there have only been a few evaluations of these programmes.

8. In terms of equity instruments, the questionnaire showed an increase, particularly in co-investments funds and fund-of-funds which seem to leverage private investment. Earlier experience from direct government funds indicated that those models were not effective. Despite the growth of equity programmes, there is little evidence of the impact of these instruments and whether or not they crowd out private investors. Only a small portion of the equity programmes in OECD countries have been formally evaluated and empirical analysis of the outcomes of these programmes has also been scarce, in part due to challenges with seed and early stage data.

9. The demand side is often overlooked in favour of supply side actions, however, developing human capabilities is critical to success in early stage financing. There is also increasing evidence of the importance of social capital, both local and global, as high growth firms need to grow beyond national borders and networks are often critical in facilitating that growth. The questionnaire showed growth in demand side programmes such as incubators, accelerators, business angel networks and matchmaking services in many OECD countries. The results also highlighted programmes to help entrepreneurs present to investors. However, a gap was noted in the training and development of investors themselves, an important element of building the market. Initiatives to create a more entrepreneurial culture are also vital as in many countries the fear of failure is higher than perceived opportunities.

10. The questionnaire also sought to identify some of the regulatory and administrative barriers to seed and early stage investment, particularly as they affect institutional investors, venture capital funds, angel investors and high growth firms. Exit markets play a critical role as well as bankruptcy regulations, labour market restrictions and other framework conditions. Securities legislations and increasing restrictions on institutions investors can also be barriers to investment in seed and early stage companies. Reforms such as Basel III, to the extent that they make banking safer and more stable, can be helpful. However, these more stringent capital requirements could reduce the supply of investment in venture capital from banks, pension funds and insurance companies, traditionally three of the largest types of private institutional investors.

11. Given the increasing amount of resources that OECD countries are putting into seed and early stage financing programmes, further work on the policy mix as well as the evaluation and assessment of the impact of these policy instruments is important. The results of this financing questionnaire will feed into on-going projects at the OECD, including the work of the CIIE Expert Group on Evaluation of Industrial Policy, which is looking into capital market interventions. In addition, OECD member countries have been hosting a series of financing policy workshops to further discuss policy rationale, the link between policy objectives and outcomes and the extent to which the design and incentive structures help countries achieve these goals.

1. Background

12. There has been increasing concern from policy makers around the world about the growing financing gap for high growth firms, particularly in the seed and early stage. Following the financial crisis, banks are less willing to loan to start-ups, that often have no or very little collateral. Venture capital firms have mostly left the seed and early stage to focus on later stage investments.

13. Recent OECD work has highlighted the importance of seed and early stage finance (OECD, 2011) as well as the importance of high-growth firms for job creation (Bravo-Biosca *et al*, 2012) and the role that financial development and other policies play in business dynamics and the growth of such firms. Further work at the OECD looks at the role that business dynamics plays in an economy characterised by growing investment in knowledge based capital (Andrews and Criscuolo, 2013).

14. OECD member countries have expressed an interest in further research looking at the mix of seed and early stage policy instruments as well as evaluations and outcomes of these policies. The Secretariat has conducted further work on financing which includes several components. The first component consists of a mapping of existing policies in OECD countries with information collected via a questionnaire. This was supplemented by further research and a more detailed follow-up questionnaire to those people in each country responsible for each of the identified programmes. Both questionnaires can be found in a separate annex ([DSTI/IND\(2013\)5/ANN](#)). The findings from the questionnaire are described in this paper with a list of the current policy instruments indicated by OECD member countries in Annex 1 (with links to the relevant websites).

15. The detailed information on policy financing instruments has also been used for empirical analysis to examine the link between policies and equity financing using commercial micro-data (Da Rin *et al*, 2013). This work exploits information at the deal level from the ThomsonOne database and uses a panel econometric specification to explore the extent to which policies are correlated with: *i*) the volume of seed and early stage financing; and *ii*) indicators of the structure of seed and early stage financing (e.g. the age at which the firm receives financing).

16. The second component consists of policy workshops to further examine the experiences of various countries with existing policy instruments. Norway hosted a workshop in Oslo in September 2012 for an in-depth discussion on public sector equity funds. Ten member countries were invited to attend and all participants found this closed-door discussion very useful. Switzerland hosted a workshop in April 2013, attended by experts from eight member countries, which focused on linking policy objectives with outcomes, evaluation and the financing policy mix. Further workshops will be held to include more countries and facilitate on-going sharing of experiences on policies for seed and early stage financing.

17. The project was undertaken jointly between the Economics Department and the Directorate for Science, Technology and Industry as part of the OECD work on Knowledge Based Capital and under the framework of the New Sources of Growth initiative. The work aimed to assess the links between seed and early stage policy interventions, the regulatory and administrative environment, and the outcomes in terms of seed and early stage investment. The questionnaire also included several questions related to a mezzanine finance project for the WPSMEE¹.

18. The CIIE work on financing feeds into on-going work across the OECD including in the work on knowledge-based capital, a range of projects in the Directorate for Science, Technology and Industry on financing, innovation, entrepreneurship, high growth firms, productivity and firm dynamics as well as the Innovation Policy Platform and work by the WPSMEE on the Financing Scoreboard.

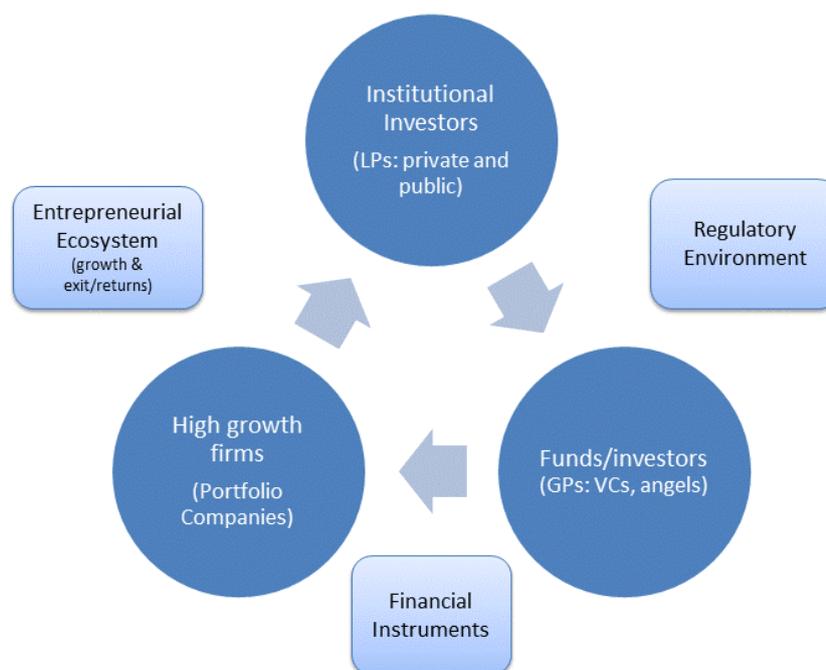
¹ For further information see “Alternative Financing Instruments for SMEs and Entrepreneurs: The Case of Mezzanine Finance” [[CFE/SME\(2012\)9/FINAL](#)].

1.1 OECD Financing Questionnaire framework

19. The OECD financing questionnaire looked at each of the key players in the entrepreneurial finance ecosystem: the institutional investors (or limited partners – LPs), the intermediary funds (or general partners – GPs) and the high growth firms (portfolio companies – PCs) and the regulatory environment affecting these players.

20. Venture capital is invested through funds (in the industry, these venture capital funds are called “General Partners” or GPs) which are provided by institutional investors (called “Limited Partners” or LPs). The VC funds (GPs) collect management fees (normally 1-2% of the capital committed) from the LPs which covers the operating costs of the team, enabling the VC firm to hire a group of professionals (angel investors often need to conduct this work on their own). These funds are then invested directly in entrepreneurial ventures (called “Portfolio Companies” or PCs). Institutional investors consist of pension funds, endowments, fund of funds, banks, insurance companies and can also include high net worth individuals and family offices. Institutional investment allows the pooling of money for investing in private companies and the delegation of the investment process to experienced fund managers with both the experience and incentives to invest in and support high growth companies (EVCA, 2010).

Figure 1: Seed and Early Stage Financing Cycle



21. The questionnaire looked at three main areas of public policy impacting the seed and early stage financing cycle between institutional investors, funds/investors and high growth firms: 1) financing instruments 2) regulatory and administrative barriers 3) policies to develop the entrepreneurial ecosystem.

1.1.1 Financing instruments

22. The supply side interventions were classified into three main areas 1) grants, loans and guarantees, 2) tax incentives and 3) equity instruments. Table 1 summarizes the results from this section of the questionnaire. The results are covered in more depth in Sections 4-6 of the paper.

Table 1: Summary of Results of Section I of Financing Questionnaire:
 Financing Instruments
 (32 out of 34 Member Countries Responding)

Type of Instrument	Number of OECD Countries	Change in Support (last 5 years)
Grants, Loans and Guarantees	30	Increased in 25 countries
Tax: YIC	9	New in 3 countries
Tax Incentives: Front-end	15	Increased or new in 9 countries
Tax Incentives: Back-end	12	Unchanged in most
Equity Funds: Public	14	Increased in 7 and new in 3 countries
Equity : Fund-of-Funds	21	Increased in 8 and new in 8 countries
Equity Funds: Co-Investment	21	Increased in 11 and new in 6 countries

1.1.2 Regulatory and administrative barriers

23. In terms of regulatory and administrative barriers, the questionnaire focused on specific data on barriers for investors (institutional, venture capital firms and angel investors) in the seed and early stage market. This included restrictions for institutional investors investing in the private equity asset class, barriers to cross border investing and securities legislation. The responses to the questionnaire as well as broader regulatory and administrative barriers and exit markets are addressed in Section 7.

1.1.3 Entrepreneurial ecosystem

24. On the demand side, the questionnaire focused on activities supporting the connection between entrepreneurs and investors. In particular, it included investor readiness and investor training as well as incubators, accelerators, business angel networks and other matchmaking services. This section highlights the importance of human and social capital as key components of a vibrant entrepreneurial ecosystem. These topics are covered in Section 8.

1.2 Questionnaire response rate

25. The response rate to the questionnaire was high with 32 out of 34 member countries completing the questionnaire.² The OECD is extremely grateful to all of the OECD member countries for the time spent on completing the questionnaires as well as providing all of the requested follow up information.

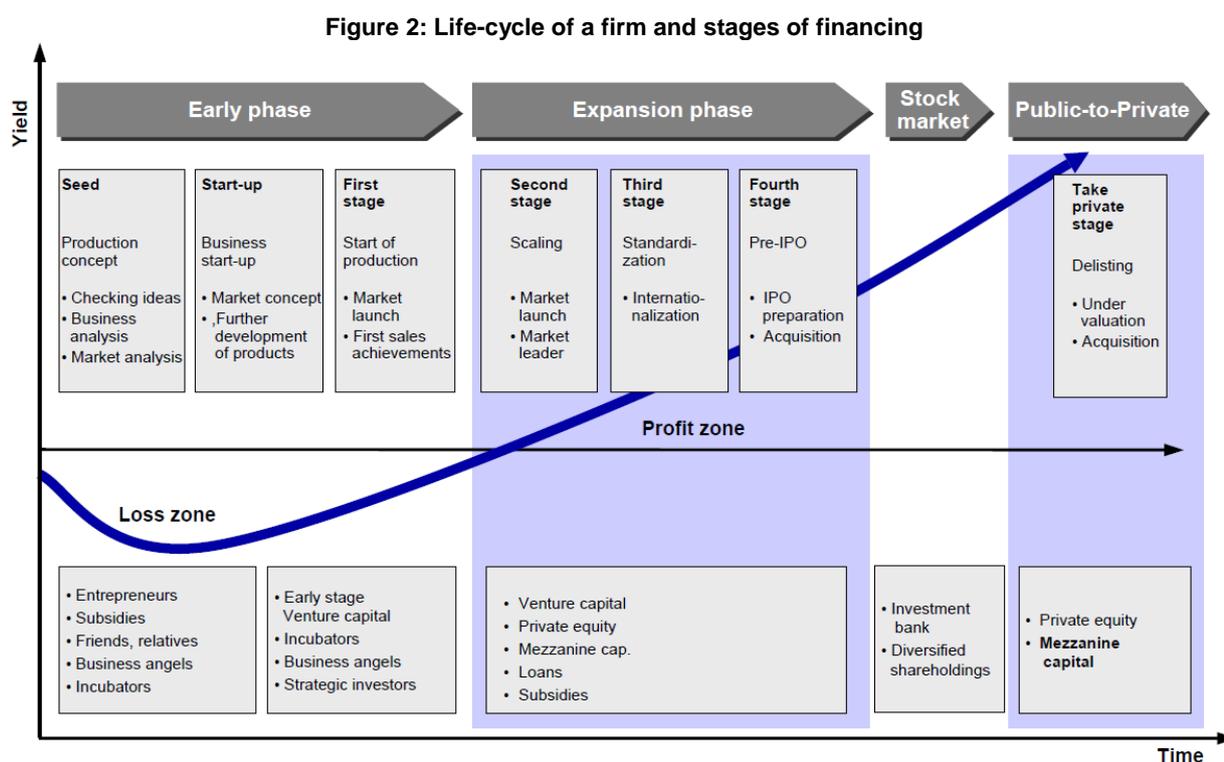
26. Member countries were asked to refer to current policies and regulations issued or accepted by the national government. Federal countries based their answers on the federal level. Information on institutions prevailing in the most representative sub-national entities or a subset of regions that may characterise best each country's institutional settings could be submitted in separate responses.

² Only Iceland and Luxembourg were unable to return completed questionnaires.

2. Seed and Early Stage Equity Investment

27. Often entrepreneurs start their ventures with their own funds and those of friends and family. Depending on the size and scope of the venture, entrepreneurs may need other external sources of seed capital, including debt or equity (angel investment or venture capital). Typically equity investments are focused on innovative high growth firms.

28. Different types of financing instruments may be more appropriate for different stages of the development of a firm. Figure 2 illustrates a typical life-cycle along with the various stages of financing and types of financing instruments. The figure below highlights the complexity of seed and early stage financing and the need for a mix of instruments to address the various growth phases of a venture.



Source: Natusch (2003); OECD (2013d).

29. Venture capital firms focus on investing in companies in markets characterised by new technologies that are rapidly developing. Venture capital firms invest in a portfolio of companies, knowing that some will succeed, some will fail and the majority will have average or sub-par performance. On average 65% of a VC investment portfolio generates 3.8% of the returns, while 4% of the portfolio generates more than 60% of the returns (Nanda, 2010). Venture capital is commonly assumed to be the main source of seed and early stage financing but, in reality, the majority of venture capital firms have moved to later stage investments leaving the seed and early stage market to “informal” investors (OECD, 2011).

30. Angel investors, who are often experienced entrepreneurs or business people, have become increasingly recognised as an important source of equity capital at the seed and early stage of company formation (Harrison and Mason, 2010). They operate in a segment which falls in between informal founders, friends and family financing, and formal venture capital investors (Freear and Wetzel, 1990;

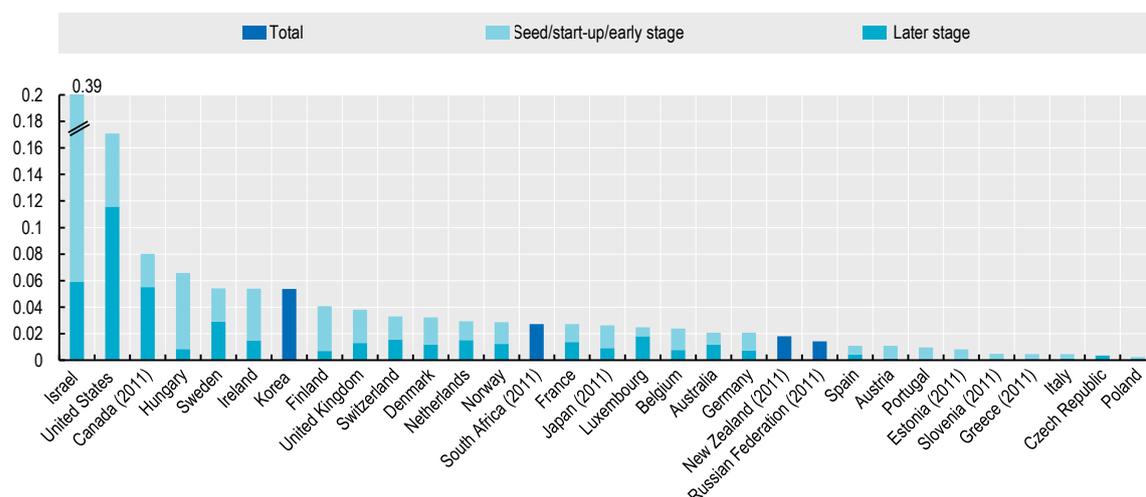
Sohl, 1999). Venture capital involves “formal” or “professional” equity, in the form of a fund run by general partners, aimed at investing in early to expansion stages of high growth firms.

Table 2: Equity investors at the seed, early and later stage of firm growth

INFORMAL INVESTORS		FORMAL INVESTORS	
Founders, Friends and Family	Angel Investors (typical investment size: 25-500K USD)	Venture Capital Funds (typical investment size: 3-5M USD)	
<i>Seed Stage investments</i>		<i>Early Stage Investments</i>	<i>Later Stage Investments</i>

31. Seed and early stage investment can vary greatly across countries, both in terms of volume and approach. In terms of venture capital as a percentage of GDP, Israel and the United States have the highest ratio (Figure 3). It should also be noted that the definitions of stages (seed, early and later stage) vary across countries although the OECD has a methodology for standardizing them which was used in the chart below.

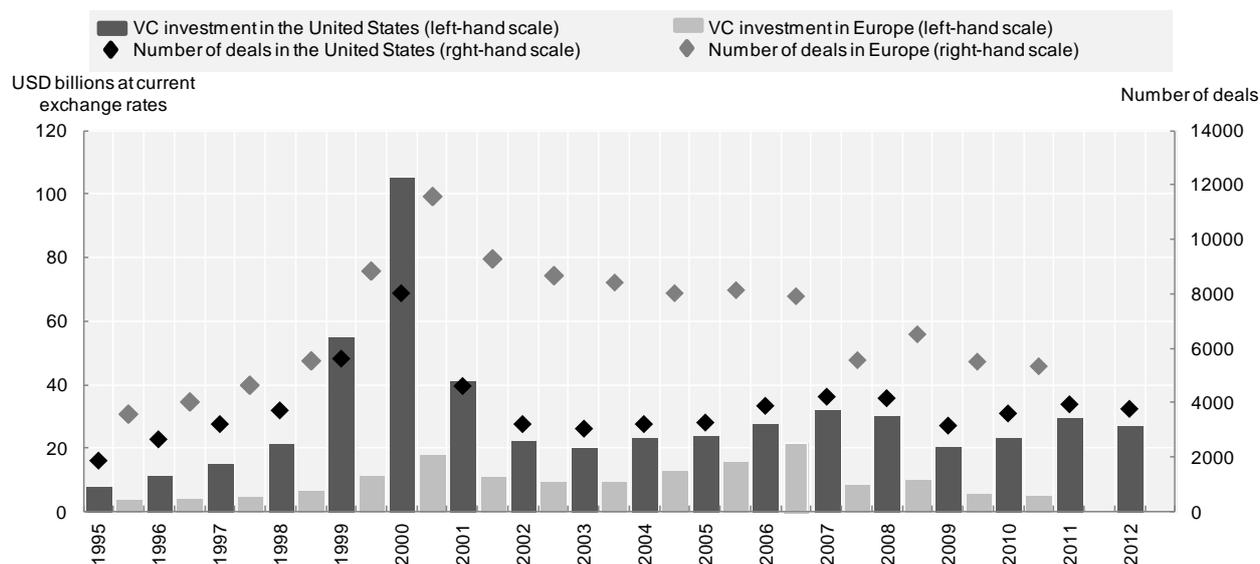
Figure 3: Venture capital investment as a percentage of GDP (USD current prices), 2012



Source: OECD (2013e), Entrepreneurship at a Glance 2013, OECD publishing.

Note: Market statistics, except for Australia, Korea and Japan (industry statistics). Please refer to OECD (2013e) for the statistical definitions of investment stages.

32. The relative size of venture capital investments is shown in Figure 4 below. Between 1995 and 2010, European venture capital investment has been, on average, approximately one-third the size of investment in United States. However, the number of venture capital deals in Europe is higher than in the United States, showing that VCs are dispersing funds more broadly through smaller deals. In fact, according the data below, deals in the U.S have been on average almost double the size of European deals.

Figure 4: Venture capital investment in the United States (1995-2012) and in Europe (1995-2010)³

Source: OECD (2013), *Science, Technology and Industry Scoreboard 2013*, calculations based on PwCMoneyTree, EVCA/Thomson Reuters/PwC and EVCA/PEREP_Analytics.

Note: Data for the United States refer to market statistics, data for Europe refer to industry statistics.

33. Research comparing returns on investment demonstrate that the US VC market outperforms the European market on average, although the top funds have more comparable returns (Lerner *et al.*, 2011). This suggests that both experience and size of fund have an impact on VC returns. A VC fund needs sufficient scale to be able to support portfolio companies through multiple financing rounds. However, recent evidence has shown that if funds become too large, returns may also start to decline (Lerner *et al.*, 2012).

34. In terms of angel investment data, the majority of angel investments are made individually and therefore not captured in national or commercial databases. A growing number of angel investors are investing through groups, networks and syndicates. This data is collected by national angel associations in some countries and by voluntary reporting and therefore provides a window on what is termed the “visible” part of the market (Harrison and Mason, 2010). The United States and Europe, where the angel markets are most developed, are the most active but other markets are developing rapidly.

35. While methods of estimating the invisible market, and therefore the full angel market size are currently more art than science, various studies suggest that total angel investment is likely greater than VC investment in developed angel markets such as the United States and some countries in Europe.

36. Venture capital firms tend to invest in high technology sectors such as ICT, biotech and clean tech. Angel investors tend to invest in a broader range of sectors than VCs, although the bulk of investment is also typically in ICT, biotech and health related technologies (OECD, 2011). Companies in the ICT sector often have a lower capital intensity and shorter route to exit (Ries, 2011), making them attractive to investors (see section 8.2.6).

³ Europe includes here Austria, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Former Yugoslav Republic of Macedonia, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Spain, Slovak Republic, Slovenia, Sweden, Switzerland, Ukraine and United Kingdom.

3. Policy Rationales for Intervention in Seed and Early Stage Finance

37. A substantial body of literature has suggested that financing plays a significant role in firm creation and growth (Aghion *et al.*, 2007) and notes that entrepreneurs face significant financing barriers (Evans and Jovanovic, 1989; Gartner *et al.*, 2012). In the seed and early stage financing market there is an increasing financing gap due of the fact that banks are less willing to loan to start-ups and venture capital firms have moved to later investment stages (OECD, 2011). While a financing gap is not necessarily a “market failure” (not all firms seeking funds necessarily merit them), the funding gap has been persistent and has grown over time, triggering greater attention from policy makers. The main policy rationales are discussed below.

3.1 Market failures

38. The argument of a “market failure” in firm financing due to imperfect information is not new. Financial market imperfections arise mostly due to information asymmetries. These include adverse selection (Akerlof, 1970; Meyers and Majluf, 1984; Stiglitz and Weiss, 1981) and agency problems (Jensen and Meckling, 1976; Townsend, 1979; Bernanke *et al.*, 1996). Venture capital firms partly reduce the information asymmetry problems, but may lead to additional principal agent problems and significant monitoring costs in the form of GP fees (Kaplan and Stromberg, 2004).

39. There is a well-documented information asymmetry in the seed and early stage between entrepreneurs and investors (Denis 2004.), which is particularly pronounced for young technology-based firms (Mason, 2009). Financing constraints tend to be more acute for young firms to the extent they have limited internal funds and lack a track record to signal their “ability” to investors. Indeed, when asymmetric information problems are large, a “missing markets” problem may emerge where many of the innovations associated with young start-up firms may never be commercialised. In addition, seed and early stage financing requires long-term investments, which implies that lenders\investors will require an additional premium, which poses difficulties in devising the appropriate contract (von Thadden, 1995). This financing gap is partly bridged by venture capitalists or business angels, who address informational asymmetries by intensively scrutinising firms before providing capital and monitoring them afterwards (Hall and Lerner, 2010; OECD, 2011).

40. Information asymmetries can be further amplified by the lack of collateral and extremely risky nature of new innovative ventures (Hall and Lerner, 2010). Insufficient collateral may particularly limit access to external financing for firms that are heavily reliant on investments in knowledge-based capital (KBC), such as R&D, design or business models. Traditional debt and equity markets are primarily designed to fund tangible assets that have well defined market prices and can serve as collateral. In contrast, KBC assets are less easy to define and collateralisation is often affected by such assets being non-separable and non-transferable – two impediments to the mobility of any single asset across parties and the realisation of full salvage value in the event of firm bankruptcy.⁴

41. Devising the appropriate contracts for debt (Albuquerque and Hopenhayn, 2004) or equity instruments (Gilson, 2003; Kaplan and Stomberg, 2004) partly addresses the informational problem and promotes and enforces the alignment of incentives and appropriate monitoring. However, this can be

⁴ Difficulties in collateralising KBC also arise from the uncertainty and perceptions of risk that characterises KBC. Moreover, the uncertainty surrounding the treatment of intangibles during bankruptcy is likely to accentuate financing difficulties, partly because the value of intangible assets are more prone to erosion during asset fire sales given the greater tendency of intangible assets to generate firm-specific value (e.g., growth opportunities, managerial firm-specific human capital and operating synergies whose value depends on the firm’s assets being kept together; see Hotchkiss *et al.*, 2008; Gilson *et al.*, 1990).

difficult due to the different ways instruments are structured to address different stages, goals and purposes, as well as due to the triple problems of uncertainty, information asymmetry, and opportunism (Gilson, 2003).

3.2 *Spill-over effects and externalities*

42. Another potential argument for government intervention relates to the potential spill-over effects of angel and venture capital investment, in terms of their contribution to greater economic growth and job creation. Studies in the U.S. and Europe have indicated that companies backed by angel investors and venture capitalists have been important contributors to job growth (EVCA, 2005b, Kerr *et al.*, 2010).

43. There is strong evidence of the benefits of venture capital for firm growth (Peneder, 2010) and the role it plays in the selection process of high growth and innovative firms (Engel and Keilbach, 2007). Recent evidence using micro-level data for a number of selected EU countries (VICO) suggests that venture capital firms are an important driver behind post-first venture funding round productivity growth (Croce *et al.*, 2013)

44. Policy makers in a number of countries highlight these potential economic benefits as the main justification for implementing programmes focused on seed and early stage investment. Some countries also note that these programmes form an important part of a broader economic development strategy focused on high growth and technology backed firms.

45. If there is a well-functioning entrepreneurial and financial ecosystem, the actions of any one group are likely to have positive spill-over effects for their peers (Lerner, 2010). Government intervention can play a catalytic role both in facilitating the functioning of the ecosystem and targeting actions to trigger its further development. However, these actions should provide incentives for the engagement, not the replacement, of the private sector and should be conducted in a manner conducive to the market (EVCA, 2010).

3.3 *Policy Mix*

46. Policy makers in a number of countries have sought to address the prevailing seed and early stage financing gaps by intervening in multiple areas simultaneously. Therefore financing instruments should not be seen in isolation but as a set of interacting policies. A number of countries have begun streamlining their growing set of seed and early stage policies, in some cases putting them under one umbrella. However, changes in policies might be driven not only by market conditions but also by the political cycle. Consistent, long-term policies are important to provide the appropriate incentives to invest in seed and early stage firms.

47. Sections 4 to 6 provide further information about the financing instruments (supply side) which OECD member countries had in place in 2012 and how support for those programmes had changed over the past five years. While there has been an increase for support of seed and early stage financing policies overall, a shift was noted from direct to indirect interventions.

48. The questionnaire results demonstrated the focus policy makers have had on supply side measures in seed and early stage finance. However, the full policy mix needs to be taken into account, including the demand side and framework conditions. For example, sometimes a supply-side instrument may have been introduced in a setting of suboptimal framework conditions, which might constitute a second-best policy choice. In fact, some analysts argue that these framework conditions are more important for governments to address than trying to “catalyse” the seed and early stage market through financing instruments. Section 7 looks at the regulatory and administrative barriers to seed and early stage investment.

49. Demand side policies for seed and early stage finance are often overlooked in favour of more visible supply side measures. However, as public funding has increased, there is a growing concern regarding the shortage of innovative entrepreneurs, a lack of entrepreneurial skills and capabilities and low quality of investment projects (Murray *et al.*, 2012). Developing the capabilities of investors is also important. Demand side interventions will be discussed further in Section 8.

50. Regardless of the rationale or type of intervention, it is important that the objectives of the programmes are clear and the results are measured accordingly. This is described further in Section 9. Given the complexity and interactions between policies for seed and early stage finance, more work is needed on the full policy mix including how and why it changes over time.

4. Grants, Loans and Guarantee Schemes

4.1 *Policy rationale for intervention*

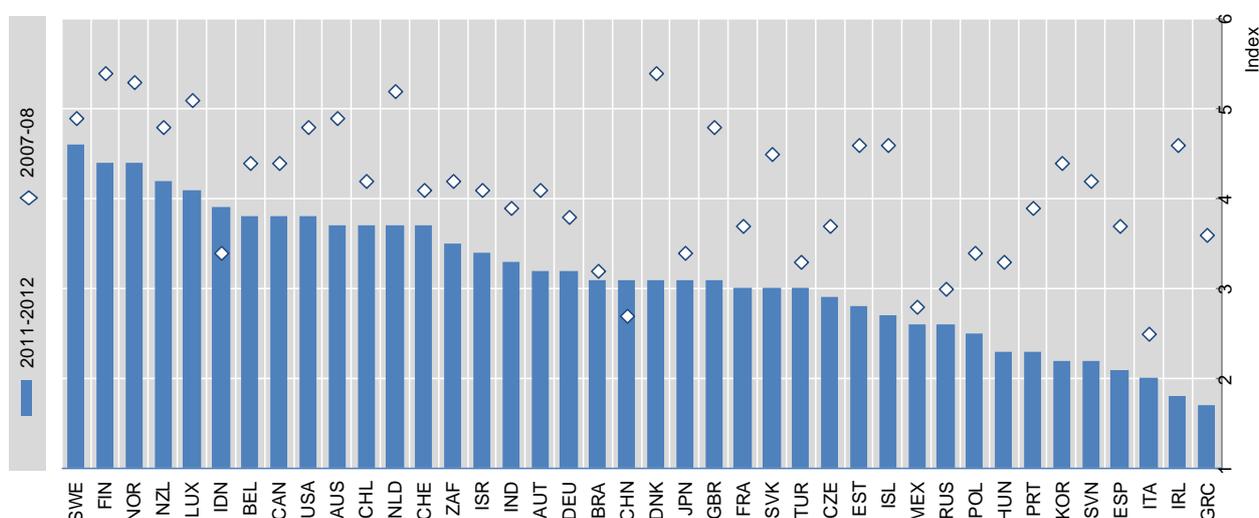
51. Debt financing is the most common source of external financing for small, young firms, including innovative ones, although innovative and high-growth firms seek equity financing more than other types of small firms (OECD, 2010). Debt financing involves the acquisition of resources with an obligation of repayment; i.e. the investor does not receive an equity stake. It includes a wide variety of financing schemes: loans from individuals, banks or other financial institutions; selling bonds, notes or other debt instruments; and other forms of credit such as leasing or credit cards (OECD, 2009).

52. For young firms, and in particular innovative high growth oriented firms, access to credit is particularly difficult due to their lack of tangible assets, and therefore collateral, and their higher risk profiles. Credit constraints for small firms are also due to risks arising from information asymmetries between lenders and borrowers 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 result in a greater share of higher risk firms in the pool of borrowers (adverse selection).

53. On the other hand, it is hard for lenders to 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 requiring collateral. However, for entrepreneurs and young innovative firms providing collateral might not be possible especially if their main assets are intangible or knowledge-based. Therefore these firms are likely to be credit constrained, independently of their project quality and growth potential.

54. The recent financial crisis has increased the difficulty for all firms, and particularly small and young innovative firms, to gain access to capital. Figure 5 below shows the decrease in the ease of access to loans from 2007-08 to 2009-10.

Figure 5: Ease of access to loans, 2007-08 and 2011-12



Note: Scale from 1 to 7 from hardest to easiest, weighted averages.

Source: World Economic Forum (2012), The Global Competitiveness Report 2012-2013 and World Economic Forum (2008), The Global Competitiveness Report 2008-2009, World Economic Forum, Geneva.

4.2 Public policy interventions

55. Government programmes in some countries have tried to help overcome these funding gaps in different ways. One way in which government has intervened is by providing direct funding to credit constrained small, young and innovative firms through loans or grants. Governments sometimes act as guarantors for loans through loan guarantees programmes targeted to firms below a certain age or size.

56. According to the OECD financing questionnaire, most OECD countries have at least one grant, loan or guarantee schemes in place (30 out of 32 countries answering the questionnaire). In addition, the majority of the countries with these programmes (25 out of 32) indicated that support has increased over the past five years. The majority of countries indicated that they have conducted some form of evaluation of these programmes.

Table 3: Government support using grants, loans and guarantee schemes

	Grants, loans and guarantee schemes
Australia	▲
Austria	○
Belgium	▲
Wallonia	▲
Flanders	▲
Federal*	
Canada	▲
Chile	▲
Czech Republic	▲
Denmark	▲
Estonia	▲

Finland	○
France	▲
Germany	▲
Greece	▲
Hungary	▲
Ireland	▲
Israel	○
Italy	▲
Japan*	
Korea	▲
Mexico	▲
Netherlands	△
New Zealand	✓
Norway	▲
Poland	
Portugal	▲
Slovak Republic	▲
Slovenia	▲
Spain	▲
Sweden	▲
Switzerland	○
Turkey	▲
United Kingdom	▲
United States	▲

*Note: The following countries/regions did not respond to the question on grants, loans and guarantee schemes: Belgium-Federal level; Japan. Belgium provided information at the regional level which is included. Iceland and Luxembourg did not complete questionnaires and therefore are not included in the table.

✓: Country has corresponding programme ▲: Increased ▼: Decreased
 ○: Remained unchanged △: Started in the last 5 years ▽: Ceased during the last 5 years

57. The OECD Scoreboard on Financing SMEs and Entrepreneurs confirms this finding and links the increase directly to the impact of the recent financial crisis (see Box 1 below). According to the questionnaire, 21 of the OECD countries indicated that they have evaluated these programmes.

Box 1. OECD Scoreboard on Financing SMEs and Entrepreneurs

Ensuring that SMEs and start-up entrepreneurs have access to adequate financing is a key policy objective in many countries. Indeed, this has been identified as a recurrent, structural problem in OECD and non-OECD countries alike. However, governments run up against a major and longstanding obstacle to policy making in this area: lack of hard data on the current state of financing available and used by SMEs and insufficient evidence on the effectiveness of policy measures.

Financing SMEs and Entrepreneurs 2013: An OECD Scoreboard provides unique insights on the impact of the global financial crisis and subsequent recession on SMEs' and entrepreneurs' access to finance. It includes data on 13 core indicators of debt, equity and framework conditions for SME and entrepreneurship finance covering the period 2007-2011, as well as information on the main government responses to restore business access to finance.

In most countries, business loans and SME loans declined markedly during the recent recession and, while they recovered somewhat in 2010, conditions to access finance in 2011 remained tight. Overall, SMEs faced more severe credit conditions than did large enterprises, in the form of higher interest rates, shortened maturities and increased requests for collateral, suggesting that smaller firms were considered to be higher-risk companies due to their poorer

business prospects. The Scoreboard also highlights a sharp decline in venture capital and growth capital between 2008 and 2009. By 2011, half of the countries had not recovered to 2007 levels.

Governments responded to the increasing difficulties faced by SMEs in accessing finance with a variety of instruments. In particular, loan guarantee programmes expanded substantially. Other emergency responses included: direct lending; deferring tax payments temporarily; capping interest rates; rolling over SME loans; converting short-term loans into long-term loans or overdrafts into loans; refraining from declaring loans non-performing; setting up credit mediation systems, and, more recently, establishing lending targets and codes of conduct for banks. Some governments also intervened in the private equity market.

The 2013 Scoreboard contains detailed profiles for 25 countries: Canada, Chile, the Czech Republic, Denmark, Finland, France, Hungary, Ireland, Italy, Korea, the Netherlands, New Zealand, Norway, Portugal, the Russian Federation, Serbia, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Thailand, Turkey, the United Kingdom and the United States. It also contains a thematic chapter on credit guarantees, statistical resources and a discussion of methodological issues, including recommendations for data improvements.

The OECD has taken the lead in developing data and statistical information on SMEs' and entrepreneurs' access to finance. The OECD Working Party on SMEs and Entrepreneurship (WPSMEE)'s *Financing SMEs and Entrepreneurs: An OECD Scoreboard* provides an original framework to monitor trends in SMEs' and entrepreneurs' access to finance – at the country level and internationally – and a tool to support the formulation and evaluation of policies. The Scoreboard also provides an important contribution to the G20's work on SME finance, through the G20 Global Partnership for Financial Inclusion and its SME Finance Forum.

Source: OECD (2013a), *Financing SMEs and Entrepreneurs 2013: An OECD Scoreboard*, OECD Publishing.

58. As firms move from seed and early stage to later stages of development, the investment risks decline. The firm has a more established track record and therefore the information asymmetries are reduced. Later stage firms also are more likely to have collateral. However, there are also potential market failures at the later stages of a company's development and a number of countries have programmes addressing the growth and expansion stages.

59. The WPSMEE recently conducted a project on mezzanine finance to look into this area further. According to the recent OECD financing questionnaire, only a handful of countries currently have public programmes in this area, however, interest appears to be growing. This topic is covered in a recent WPSMEE paper "Alternative Financing Instruments for SMEs and Entrepreneurs: The Case of Mezzanine Finance" [[CFE/SME\(2012\)9](#)] and will therefore not be discussed at length in this paper.

5. Fiscal/tax Incentives

5.1 Policy rationale for intervention

60. Increasingly, tax incentives are being used as a way to address asymmetries in the treatment of profit and losses (Poterba, 1989, Gendron 2001, Cullen and Gordon, 2007) which can help in removing barriers and encouraging more investment in start-ups (Crisuolo and Wilson, 2013). These include young innovative company schemes, tax credits on investment, reduced capital gains taxes for investors in start-ups and/or provisions for rollover or carry forward of capital gains or losses.

61. Capital gains tax is an important factor that shapes the seed and early stage equity market (Da Rin *et al.*, 2006) as tax will influence the investment and exit decisions by angel investors and venture capitalists. Recent evidence suggests that, despite a flight to quality selection effect, higher capital gains tax rates reduce both the number of VC-backed and successful companies (Achleitner *et al.*, 2012). Beyond the arguments that increased taxation reduces the incentives to invest in seed and early stage ventures, capital gains taxes have also been argued to work as a barrier to entrepreneurial activity and creation of new firms (Poterba, 1989; Keuschnigg and Nielsen, 2004).

5.2 *Public policy interventions*

62. Table 4 provides an overview of the answers provided by member countries to the OECD financing questionnaire. The first column indicates countries that have fiscal incentives for “young innovative companies” and how these incentives have changed over the past five years. The second column indicates which countries have “front-end” tax incentives or tax deductions for investment in seed and early stage ventures. The third column indicates which countries have “back-end” tax relief on capital gains, including rollover or carry forward of capital gains or losses.

63. As highlighted during the OECD policy workshop on seed and early stage financing held in Norway in September 2012, the general tax levels in the country – personal income, corporate and capital gains taxes, need to be taken into account when assessing fiscal incentives. In countries with no capital gains tax, such as New Zealand and Switzerland, “back-end” tax incentives are not relevant. The final column in the chart below therefore shows the long-term capital gains tax rate as a reference point.

Table 4: Fiscal/tax incentives (summary of results from OECD Questionnaire)

	YIC	“Front-end” tax incentives	“Back-end” tax incentives	Top long-term capital gains tax rate (2011) ⁺
Australia			○	22.5
Austria		▽	▽	0
Belgium*				0
Wallonia				
Flanders		▲	○	
Federal	▲	▲	▽	
Canada	○	○	▲	22.5
Chile				20
Czech Republic				0
Denmark			▲	42
Estonia				21
Finland				28
France	▽	▽	○	31.3
Germany				25
Greece				0
Hungary				16
Ireland	△	▲		25
Israel	△	△	△	20
Italy	△	△	△	44.5
Japan		▲		10
Korea	▲	▲		0
Mexico				0
Netherlands				0
New Zealand				0
Norway				28
Poland				19
Portugal		▽		46.5
Slovak Republic	✓	✓		19
Slovenia			△	0
Spain				21
Sweden				30
Switzerland		▽		0
Turkey	○	△	○	0
United Kingdom		▲	▲	28
United States*				19.1

*Note: The United States only has seed and early stage fiscal/tax incentives at the state level which are not included in the chart above. Belgium provided information at the regional level only, which is included. Iceland and Luxembourg did not complete questionnaires and therefore are not included in the table.

*Source: Ernst & Young (2012). Top long-term individual capital gains tax rates on corporate equities. Weighted average based on each country's GDP. Includes both central government and sub-national tax rates.

✓: Country has corresponding programme
○: Remained unchanged

▲: Increased
△: Started in the last 5 years

▽: Decreased
▽: Ceased during the last 5 years

64. It should be noted that tax incentives can be a “blunt” instrument (i.e. difficult to target effectively) so careful design, monitoring, evaluation and adjustment is necessary to ensure the intended results are achieved (OECD, 2011).

5.2.1 Young Innovative Company Programmes

65. Young innovative company programmes typically provide tax relief and a reduction in social charges for young firms which have a demonstrated innovation focus. This is often specified by a commitment of resources to research and development. The rationale behind these programmes is to address the lack of funding during the first years of a firm’s development as well as a weak investment rate in innovation by young firms. Policies that provide tax relief during the early years of a start-up help to increase cash flow and encourage investment (Lerner & Sahlman, 2012).

66. According to the questionnaire responses, only 9 out of 32 OECD countries answering the questionnaire have YIC programmes in place, with three countries indicating these programmes started in the last five years. Moreover, only a few countries have indicated that they have conducted evaluations of these programmes.

67. France, which is one of the countries often referenced for these types of programmes, indicated that government support for these programmes has decreased in the past 5 years. The following box highlights the key elements of the programme.

Box 2. Jeune Entreprise Innovante (JEI)			
France			
Classification:	Tax: YIC		Year launched: 2004
Size:	EU definition	Geographic scope: France	
Age/Stage:	<8 years	Sector: All	
Overview			
The Jeune Entreprise Innovante (JEI) scheme for YIC allows a tax relief as well as a reduction in social charges for young, highly innovative SMEs.			
Approach			
Companies eligible for the JEI status benefit from a range of tax reliefs including:			
<ul style="list-style-type: none"> • Corporate tax: full tax exemption from corporate tax in the first year of profit and a 50% relief in the second. • Annual tax: full exemption of fixed annual tax throughout the period for which it retains the JEI status. • Local taxes: upon decision by local authorities, exemption from territorial contribution and tax on developed property for 7 years. • Social charges: a JEI is also exempt from employer charges and social security contributions applicable to employees engaged in R&D activity. Full exemption from social security contributions cannot be combined with other exemptions of employer contributions or employment State aid. 			
These tax incentives cannot exceed the <i>de minimis</i> ceiling set by the European Commission.			
Criteria			
To be eligible for the JEI scheme, a firm must:			
<ul style="list-style-type: none"> • Have a minimum amount of R&D expenses (15% total tax deductible expenses in the corresponding year); • Be independent and not result from a merger, restructuring or extension\recovery of existing activity. 			
Source: http://www.enseignementsup-recherche.gouv.fr/cid5738/le-statut-de-la-jeune-entreprise-innovante-jei.html			

68. The Ministère de l’Economie et des Finances, Service des études et des statistiques industrielles (SESSI) conducted an evaluation of the JEI in 2008. The scheme was found to have a joint positive impact

on the employment of qualified personnel and total payroll (excluding social contributions). Even though a positive effect upon firm creation could not be disentangled, the JEI was associated with a significant slowdown in the closure of young firms belonging to high-tech services (the majority of firms that applied to the scheme were in ICT and life sciences). The scheme was modified in 2011 to reduce the social allowances allowed.

69. The Ministry for Economic Regeneration conducted another evaluation of the scheme in 2012 (DGCIS - Hallépée et Garcia, 2012) to take into account mid and long term impacts on the YIC. It showed that the YIC in the scheme have strongly increased employment and turnover but less than half of the firms made a profit. It also showed that the scheme improves the survival rate of the YIC. The evaluation concludes that the increase in R&D investment by the firm benefiting from the scheme was higher than the budget cost of the scheme.

5.2.2 *Front-end or Back-end tax incentives*

70. Front-end tax incentives are tax deductions on investments in seed and early stage ventures. A number of countries have these in place, particularly to encourage investors to invest in young innovative firms. Back-end tax relief is related to capital gains and losses, including rollover or carry forward. Back-end tax relief often aims to encourage investors not only to invest, but also to reinvest, in seed and early stage firms.

71. Many countries indicated that they have “front-end” or “back-end” tax incentives in place for seed and early stage investment. 13 out of 32 OECD countries indicated that they have “front-end” tax incentives in place and in the majority of cases support has increased for these programmes. 11 out of 32 OECD countries have “back-end” tax incentives with support increasing in half of the cases and remaining mostly unchanged in the remainder. Again, relatively few countries indicated that they have evaluated these programmes.

72. Enterprise Investment Scheme (EIS) was introduced by the British government to encourage equity investment in small and medium companies (Box 3). EIS has been in place since 1994 and is the most often cited example of an investor tax incentive programme. Currently, there is income tax relief available to investors at 30% on the amount invested through EIS, as well as two capital gains tax reliefs.

Box 3. Enterprise Investment Scheme (EIS)

United Kingdom

Classification: Tax: Front-end & Back-end	Year launched: 1994
Size: 250 employees; £15m gross assets	Geographic scope: UK
Age/Stage: All	Sector: Only qualifying activities, as defined by HMRC

Overview

There are three tax reliefs available to potential investors, designed to encourage investment into companies which otherwise may struggle to secure equity funding.

Approach

Front-end: The maximum investment on which tax relief is available for individual investors, is GBP 1 000 000. Investors receive 30% of the amount invested as a deduction from their tax liability.

Back-end: There is also scope to defer tax liability on existing capital gains reinvested into EIS-qualifying shares. If the EIS shares are disposed of at a gain, there is no capital gains tax to pay. The tax reliefs are all contingent upon the investor holding the shares for at least three years from date of issue.

Criteria

In order to qualify for investment via the scheme, a company (or the group of which it is the parent) must meet certain conditions, the most significant of which are as follows:

- It must not be quoted on a recognised stock exchange
- It must not be controlled by another company
- Its activities must be qualifying ones, as defined by HMRC.

Other restrictions apply, to ensure that the scheme is appropriately targeted and is not misused.

Source: HM Revenue & Customs: <http://www.hmrc.gov.uk/eis/index.htm>.

73. Earlier evaluations of EIS, mostly conducted by outside experts/academics, were positive and suggested significant additionality in terms of the amount of money invested (over 50%) as well as a positive impact on the companies in which they invested (Mason, 2009).

5.2.3 *Regional tax incentives*

74. Some countries provide tax incentives at the regional, not the national level. These include the U.S., in which tax incentives are implemented at the state level and Canada, in which tax incentives are at the provincial level, as well as some other countries.

6. **Government Equity Financing Instruments**

6.1 *Policy rationale for intervention*

75. As discussed earlier, the rationale for specific government intervention through equity instruments may be based on various arguments. First, and stemming from the “market failure” and “financing gap” arguments mentioned in section 3.1, intervention in an underdeveloped seed and early stage market may be seen as a way to provide critical mass and signal the merits of seed and early stage investments to private sector investors (Leleux and Surlemont, 2003). According to this “seeding hypothesis”, public intervention is seen as a way to facilitate the creation of a private seed and early stage market.

76. Second, public intervention may be based on considerations beyond pure financial returns (social returns, national strategic interests) which can play an important role in deciding to intervene in the market (Lerner 2009, Murray *et al.*, 2012). Examples of these broader objectives can be efforts to create jobs and economic growth in specific regions or sectors. Nevertheless, caution is necessary in designing such programmes as they can underperform commercially oriented funds (Murray, 1998).

77. The ability of the public sector to pick winners is typically regarded with some skepticism (Avinimelech and Teubal, 2006). In addition, government must strive to avoid crowding out effects (Cumming and MacIntosh, 2006) and structure instruments effectively to address the specific policy goals (Murray *et al.*, 2012).

78. In EU countries, government interventions have to comply with state aid rules. In the case of measures to promote risk capital investment, the EU has specific guidelines (Box 4). Even though the EC does not see evidence of a general risk capital market failure, it recognizes the existence of market gaps for some types of investments at certain stages. State aid is defined as an *advantage in any form whatsoever conferred on a selective basis to undertakings by national public authorities*. However, public intervention in the form of risk capital investments may also be designed in a market-conform manner, i.e. which does not entail state aid.⁵

⁵ Subsidies granted to individuals or general measures open to all enterprises are not covered by Article 107 of the Treaty on the Functioning of the European Union and do not constitute State aid. For further information on State aid, please visit http://ec.europa.eu/competition/state_aid/overview/index_en.html

Box 4. Rules on State aid to promote risk capital investment in SMEs in the EU

Overview

Article 107 (1) of the *Treaty on the Functioning of the European Union* (TFEU) determines the conditions under which aid granted by an EU "Member State or through State resources in any form whatsoever" is incompatible with the common market. The *Community Guidelines on State aid to promote risk capital investments in small and medium-sized enterprises* (RCG; EC, 2006) set out the conditions under which a risk capital measure can be accepted, should be analysed in detail by the EC or is not compatible with EU law.

Types of instruments

Even though the choice of aid measures is left to individual Member States, the assessment of each measure by the EC is based on whether i) "they encourage market investors to provide risk capital" and ii) "investment decisions [are] taken on a commercial basis". The following measures would fall into such category:

- Constitution of venture capital funds with participation by the State (even if on less advantageous terms)
- Guarantees to risk capital investors/funds, up to 50% of potential underlying losses
- Fiscal incentives to funds (and/or managers) or to investors to undertake investments
- Other financial instruments in favour of risk capital funds/investors to provide extra capital for investment

Conditions for compatibility

As a general principle, and in accordance with existing frameworks, guidelines and regulations, risk capital instruments shall not target i) firms in difficulties nor ii) firms in the shipbuilding, coal or steel industries. Within RCG, additional exclusions apply in terms of export-related activities, buy-outs and listed companies.

With respect to risk capital aid, the EC considers the incentive effect, necessity and proportionality of aid and the overall balance of the measure as positive if State aid measures comply with the following conditions:

- Investment tranches not exceeding EUR 1.5 million per SME, per 12 months
- For small companies, restriction to seed, start-up phases and expansion phases; for medium-size companies, seed and start-up phases and expansion phase only allowed in "assisted areas"
- Prevalence of equity and quasi-equity instruments (at least 70% of total budget)
- Participation by private investors of at least 50% (30% in "assisted areas")
- Decisions to invest in companies are profit-driven and fund management is made on a commercial basis
- Sectoral focus for risk capital measures may be accepted if within the general sector scope.

Measures not complying with one of the above mentioned conditions are subject to a detailed assessment by the EC, under the guidelines set out in Section 5 RCG and may eventually be authorised.

Other regulation

Additional regulation sets out the rules under which risk capital instruments are also allowed.

- a) Under Article 29 of the General Block Exemption Regulation, the provision of risk capital state aid is allowed in lower amounts and in more limited situations (EUR 1.5 million per final beneficiary SME). Such schemes are exempted from prior notification to the EC.
- b) Risk capital state aid may also be given under the *de minimis* regulation. *De minimis* allows max. EUR 200 000 per company per 3 years, without need for notification laid down in Article 108(3) TFEU.
- c) Schemes designed in a market-conform manner may not entail state aid in the light of Article 107 TFEU.

Given that the resources provided by the EIF are not considered State resources in the light of Article 107 (1) TFEU, EIF funding (see Box10) is considered to be provided by private investors (OJ C 194, 18.8.2006, p. 10).

Revision of the Guidelines

In 2010, the EC noted that i) VC markets had not recovered to pre-crisis levels and ii) the pool of equity investors had decreased. The EC temporarily amended the RCG, increasing the investment thresholds from EUR 1.5 million to EUR 2.5 million and reducing private participation limits. The guidelines are currently under revision and modifications might include a permanent increase in the investment threshold to EUR 2.5 million. Changes could also relate to limitations on expansion investments in "non-assisted areas", scouting costs, cumulation rules, types of equity instrument and commercial management.⁶ The current RCG applies until 31st December, 2013.

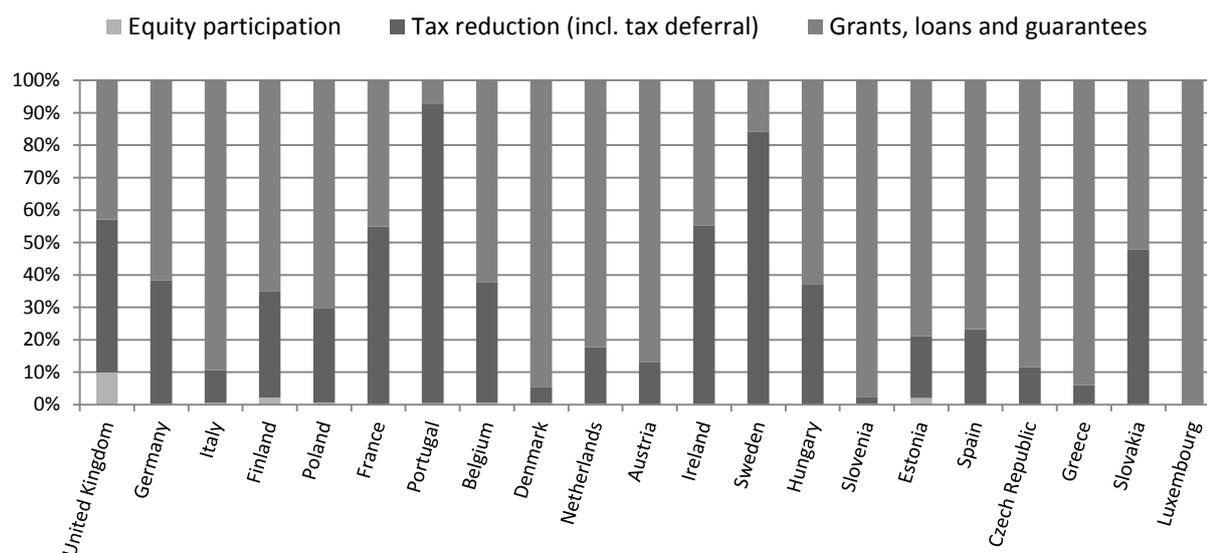
Source: EC (2006) and information available at http://ec.europa.eu/competition/state_aid/overview/index_en.html

⁶ Information at http://ec.europa.eu/competition/consultations/2010_temporary_measures/index.html

79. As Figure 6 illustrates, tax instruments as well as grants, loans and guarantees are the most common type of state aid instruments amongst EU member countries. Equity instruments usually account for a small share and are most predominant in the United Kingdom (9.9%), Finland (2.1%) and Estonia (2.0%). These figures only include non-crisis State aid measures and cover all stages of company development.

Figure 6: Non-crisis aid to industry and services by aid instrument

Annual average (2009-2011)



Source: DG Competition. Available at: http://ec.europa.eu/competition/state_aid/studies_reports/ws5_1.xls

6.2 Public policy interventions

80. According to the questionnaire, most OECD countries have some type of government equity programme (Table 5). These programmes vary across countries but typically fall into three main categories: direct investment through government funds, fund-of-funds and public/private co-investment funds. Many of these programmes have been focused on venture capital, although programmes targeting angel investment have also grown.

Table 5: Types of government supported equity funds in countries who responded to questionnaire

	Public Equity Funds	Fund of Funds	Co-investment Funds
Australia			▲
Austria		△	
Belgium*			
Wallonia	△	△	△
Flanders	▲	△	
Federal			
Canada	▲	▲	
Chile			○
Czech Republic			△
Denmark	▲	▲	
Estonia	▼		
Finland	○	○	▲

France	▲	▲	▲
Germany		▲	○
Greece		○	▲
Hungary	○		▲
Ireland	△	△	▲
Israel			△
Italy	△	△	△
Japan			
Korea		▲	
Mexico	▲	△	○
Netherlands			▲
New Zealand		○	○
Norway	▲	▲	▲
Poland		○	
Portugal		▲	▲
Slovak Republic	○	▲	
Slovenia		△	△
Spain			
Sweden	▲	○	▲
Switzerland			
Turkey		△	△
United Kingdom		▲	▲
United States*			

*Note: The United States only has seed and early stage equity programmes at the state level which are not included. Belgium provided information at the regional level only which is included. Iceland and Luxembourg did not complete questionnaires and therefore are not included in the table.

✓: Country has corresponding programme
○: Remained unchanged

▲: Increased
△: Started in the last 5 years

▼: Decreased
▽: Ceased during the last 5 years

81. These programmes have been increasing in the past five years, especially fund of funds and co-investment funds (table 5 and figure 7). In the questionnaire, 13 out of 32 OECD countries indicated that they have direct public equity funds with support for these programmes primarily increasing in the past five years. In addition, 21 out of 32 OECD countries have fund of fund programmes in place and noted an increase over the past five years, including 8 countries with new programmes. Finally, 21 out of 32 OECD countries have co-investment funds in place with support increasing in 17 countries over the past five years. However, less than 11 countries indicated that they have evaluated any of these equity programmes.

82. The detailed data from the follow-up questionnaires on these instruments shows that under half (45%) of the programmes have sector requirements (some targeting specific sectors). Of those that have requirements, ICT, biotech and clean tech are most often the broad sectors targeted. Half of the instruments have a specific stage focus, which is often seed (83%) and/or early stage (79%). Only a few have age requirements (27%), but size requirements are common (66%).⁷ Only in 48% of cases are firms required not to be part of a group.

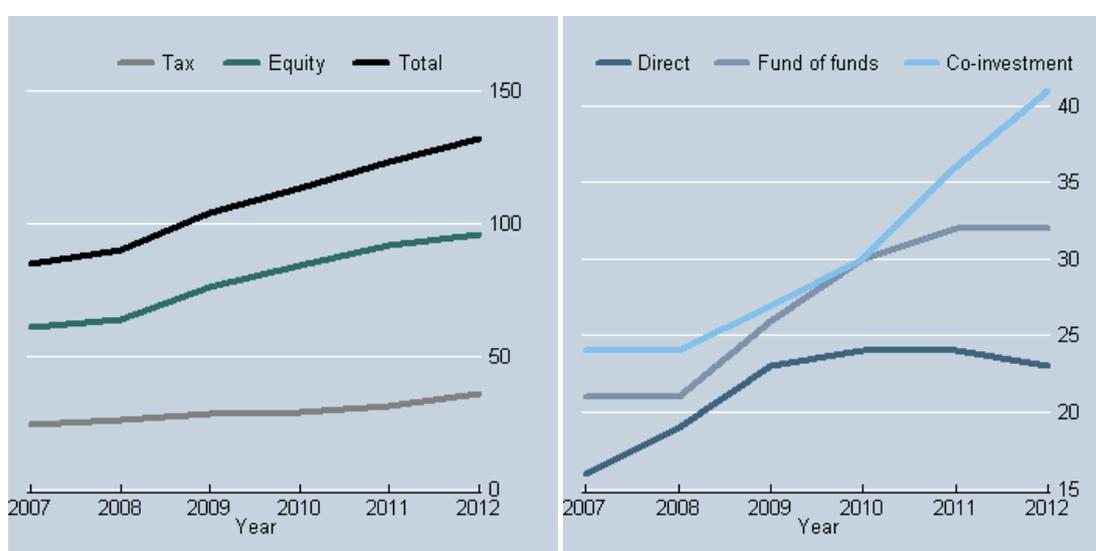
83. Among direct and co-investment programmes, follow-on funding rounds are usually eligible for further support (93%). The majority of publically-backed funds require that the investee firm is

⁷ Size requirements are maximum number of employees, turnover and/or total assets required for a firm to qualify for the government equity programme.

headquartered in the country (58%), but in some cases investments can be made abroad (34%). Some programmes only allow investments in firms located in a given region with the home country (37%).

84. As seen in the figure below, the total number of equity instruments in OECD countries has grown dramatically over the past five years, in particular relative to tax instruments. Co-investment funds have grown the most but there has also been an increase in the number of fund-of-fund programmes. Meanwhile, the number of direct public funds has been reduced. In terms of volume, from a subsample of 29 programmes covering both tax and equity instruments, for which data on the amount of the programmes was available, there was a 98% increase in government spending.⁸ Experience suggests that co-investment funds and fund-of-funds, both of which seek to leverage private sector investment, might be more effective than direct public equity funds. However there is limited evidence to date although it is clear that the design, management and incentive structures of these instruments play a determining role.

Figure 7: Number of tax and equity instruments in OECD Member Countries⁹



Source: Elaboration by the Secretariat, based on OECD Financing Questionnaire ([DSTI/IND\(2013\)5/ANN](#)) and additional research.

85. For the subset of instruments for which we have precise data, we can see that, on average, the amounts of these programmes have almost doubled over the past five years. In co-investment programmes, *pari passu* (on the same terms) is the most common investment approach (83%) and investors usually need to be pre-approved (72%). For the direct and fund-of-fund programmes surveyed, only 40% indicated there was a private manager of the fund or fund-of-funds.

6.2.1 Direct Public Funds

86. These are public venture capital funds which invest directly in start-up firms. The rationale behind many of these programmes has been to facilitate the development of a venture capital within the country. A number of these have had a regional focus. Many early efforts to support venture capital

⁸ The subsample includes detailed information on tax and equity programmes from the OECD follow-up questionnaire (see [DSTI/IND\(2013\)5/ANN](#)) in place in the following countries: Belgium, Canada, Chile, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Netherlands, New Zealand, Norway, Poland, Portugal, Sweden and Turkey.

⁹ Please note that these statistics do not reflect amounts committed or invested through the programmes.

followed this approach, however, for the most part, the results have not been positive. Issues such as crowding out, lack of proper incentives, lack of skills and experience to invest often prevented these funds from achieving their goals (Lerner, 2009).

87. As a result, many of these programmes have been modified to include a co-investment from private sector investors, such as the example below (Box 5).

Box 5. Almi Invest			
Sweden			
Classification:	Equity: Direct/Co-investment	Year launched:	2009
Size:	250 employees	Geographic scope	Specific regions in Sweden
Age/Stage:	Early stage	Sector:	All
Overview			
Almi Invest is a public venture capital company currently managing a total of 1100 million SEK available for investments in Swedish companies. It consists of seven, regionally based venture capital funds, all with local offices and experienced local investment managers. The direct investment programme is expected to run until 2014.			
Model and structure			
Almi <i>invests and co-invests</i> together with one or more investors and can take a maximum of 50% of a share issue. Co-investors are: a) other venture capital firms; b) angel investors; and c) other investors in un-listed companies.			
<ul style="list-style-type: none"> • A first-round investment from Almi Invest is usually in the region of 2-4 million SEK. • During the lifetime of an investment in a company, investments can reach up to approx. 10 million SEK. • In each investment round, there must be a co-investor investing at least as much as Almi Invest. • Almi Invest also provides investees with knowledge, experience and access to their network. • Investments are made on the same terms as an investment partner. • Almi Invest works as an evergreen fund. 			
Source: http://www.almiinvest.se/en/			

88. Similar to a number of other public equity funds in Europe, half of Almi's capital comes from European Union structural funds, which amounts to SEK 500 million. The other 50% comes from regional public investors (such as local authorities, county councils and regional associations) and Almi Företagspartner (funding from Swedish government). Almi can invest in a wide range of businesses across sectors, but investments must be made in specific regions within Sweden.

6.2.2 Fund of Funds

89. A "fund of funds" is an investment strategy consisting of holding a portfolio of other investment funds rather than investing directly in companies. Instead of investing directly in start-up firms, public fund of funds invest in private venture capital firms, often with the requirement that other private institutional investors also invest (see next section on co-investment). This approach has become more prevalent over the past 5 years.

90. An example of a fund of funds is Argentum in Norway (Box 6). The funding for Argentum increased from 3.7 billion NOK in 2007 to 6.5 billion NOK in 2012. Argentum not only acts as a fund of funds but also co-invests at the firm level. Additionally, and perhaps less common, Argentum also invests in the secondary market in order to free up private investors' resources for new investments. The rationale is that offering liquidity for investors who wish to exit private equity funds can be important in order to ensure that the asset class remains attractive to a wider universe of investors over the long term.

Box 6. Argentum Fondsinvesteringer AS**Norway**

Classification:	Equity: Fund of funds	Year launched:	2001
Size:	250 employees	Geographic scope:	Nordic countries
Age/Stage:	All	Sector:	All

Overview

Argentum was established with the purpose of developing the Nordic private equity industry, increasing high-growth firms' access to capital by co-investing with private investors and providing high returns from investments in Nordic private equity funds.

Model and structure

Argentum has two different programmes tailored for: *i*) institutional investors; *ii*) smaller investors. Through these programmes, partners can invest in three different types of equity programmes:

- **Nordic Private Equity Programme (2008):** primary investments in Nordic private equity funds. Argentum has invested in over 65 funds and, through these funds, invested in more than 500 portfolio companies.
- **Argentum Secondary (2009):** secondary investments within private equity. Argentum started investing in the private equity secondary market in 2009 through its dedicated subsidiary Argentum Secondary AS.
- **Additional Funding Programme (2012):** co-investments with Argentum's partner fund managers. Direct co-investments are made alongside and in the same terms of private equity funds. Argentum will invest and divest at the same time as private equity funds. Such investments are managed by a General Partner (GP).

Argentum leads and represents the investors throughout the due diligence process and when negotiating terms with potential investee funds and their managers. Investments and divestments take place at same time and on the same terms as the fund which the co-investment is pegged to. The investments will be managed by the fund manager.

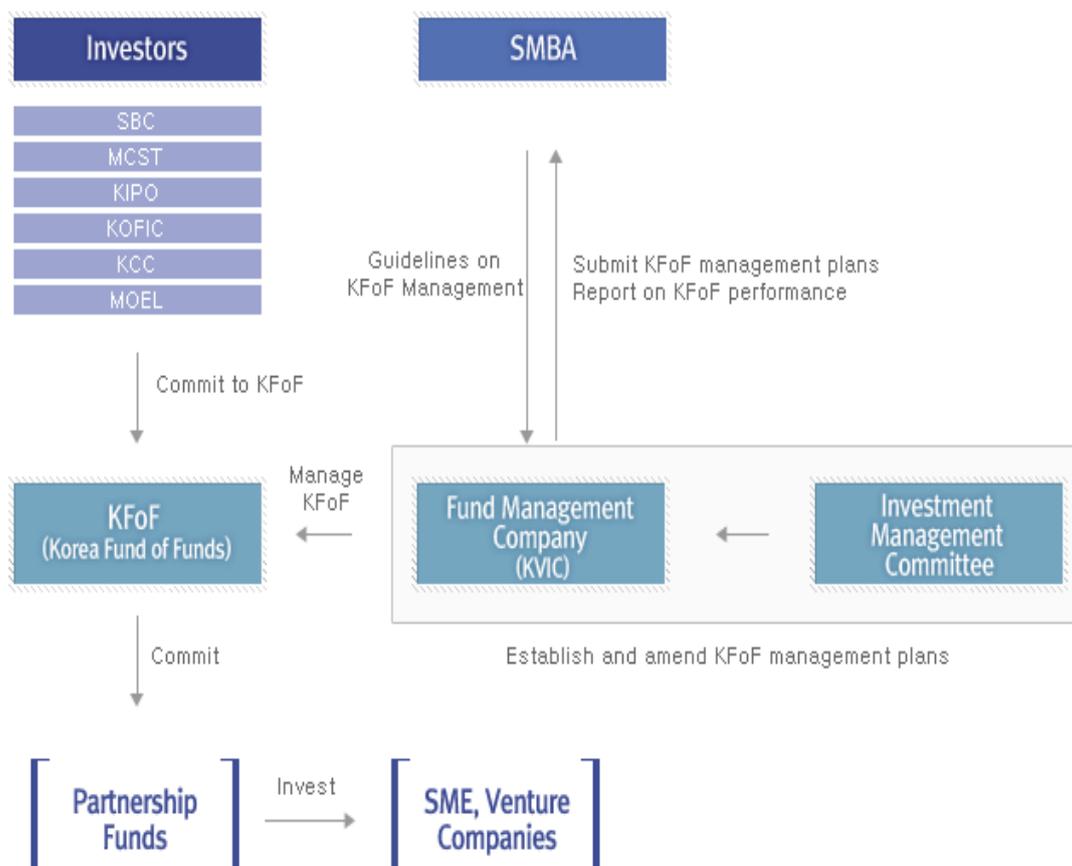
Source: <http://www.argentum.no/>

91. Argentum provides a flexible framework for fund managers. It imposes no special regional investment requirements and part of the funds may be invested abroad (although only in Nordic countries). There are no particular requirements on firm size, age, sector or stage of development. The flexibility of the fund may be very attractive for private investors which can help meet the government's policy objective of developing the private VC industry.

92. Another example of a fund of funds can be found in Korea. The Korea Fund of Funds (KFoF), was established for the purpose of providing a stable capital source for venture investment. KFoF manages 1.8 trillion KRW in commitments to 251 funds (as of January 2013) and is expected to operate until 2035. Approximately 30 new funds have been created each year, with maturities ranging from 5 to 7 years.

93. One of the interesting features of the Korea Fund of Fund is that it combines the interests of different government agencies with distinct policy objectives. The management is handled by a specialist manager (KVIC) that, keeping the commitments of each agency in separate accounts, co-invests in the creation of new funds, each of which meet the terms initially set by the corresponding government agency. Within that framework, there is flexibility to provide the right incentives for the private sector to participate. The structure of the Korea Fund of Funds is outlined below (Figure 8).

Figure 8: Structure of Korea's Fund of Funds



Source: <http://www.k-vic.co.kr/eng/>

94. As seen in the previous two examples, fund of funds can be structured and implemented in many different ways. Yet another example is the Istanbul Venture Capital Initiative (iVCi), described in Box 7 below. The main goal of iVCi is to be a catalyst for the development of the venture capital industry in Turkey through investments in independently-managed funds and co-investments. The iVCi does not target specific sectors and it was designed to invest beyond the seed and early stages. The EIF, as an external advisor, plays a significant role in the investment process. Nonetheless, the final investment decision is of the responsibility of the iVCi Investment Committee. iVCi seeks to bring together Turkish institutional investors and experienced international fund managers. It also allows for networking within the Turkish venture capital and industrialist environment through the iVCi Strategic Network, contributing to the development of the entrepreneurial ecosystems (see Section 8).

Box 7. Istanbul Venture Capital Initiative (iVCi)

Turkey

Classification: Equity: Fund of funds
Size: NA
Age/Stage: All

Geographic scope: Only Turkish entities
Sector: All

Year launched: 2007

Overview

The Istanbul Venture Capital Initiative (iVCi) is a 144 million EUR joint initiative between the Turkish governmental agencies and the EIF, along with private institutional investors. The iVCi, is a dedicated fund of funds investing into

funds managed by private sector independent fund managers.

Model and structure

The co-investment at the fund of funds level results from bringing private institutional investors to commit funds to the iVCi. The investors in iVCi are: *i*) Small and Medium Enterprises Development Organisation of Turkey (KOSGEB); *ii*) Technology Development Foundation of Turkey (TTGV); *iii*) Development Bank of Turkey (TKB); *iv*) Garanti Bank; *v*) National Bank of Greece Group (NBG); and *vi*) European Investment Fund (EIF), also advisor to the iVCi.

The iVCi co-invests both in: *i*) intermediary funds and *ii*) firms (up to 50% of iVCi fund)

a) Intermediary funds (only private VC funds qualify):

- **First Time Funds:** managed by a team with no prior joint track record in managing a VC fund;
- **Established Funds:** managed by a team with prior track record but no experience in Turkey, or a joint operation between a first time fund in Turkey and a team with previous track record acquired abroad;
- **Experienced Funds:** managed by a team with a prior joint track record in managing a VC fund in Turkey.

b) Direct co-investment partners: qualified, credible, with extensive experience in the deal and reputation at stake.

The iVCi has a four year investment period that can be extended twice by one year and can commit up to 20% of its total fund size to any particular investment.

Source: <http://www.ivci.com.tr/>

6.2.3 Co-investment Funds

95. Co-investment funds use public money to match private investment. Typically these programmes work by matching public funds with those of private investors, who are approved under the scheme. Co-investment schemes are often seen not only as a way to leverage private money but also a driver in building, growing and professionalising the seed and early stage investment market by providing a more structured investment process. Co-investments schemes can also be an effective way to attract foreign investors, providing the regulatory environment permits (see section XII).

96. Co-investment funds can be structured in many different ways. The majority of co-investment funds are *pari-passu* (on the same terms).¹⁰ However, some funds are structured to provide either upside leverage or downside protection to the private investors. Asymmetric funding schemes allocate a higher proportion of the returns to the private sector investors and a greater part of the losses to the public sector investors. This provides a premium to private sector investors to compensate for the risk and long term nature of seed and early stage investments. Earlier work showed that these programmes provided the appropriate incentives, without creating unintended disincentives, and resulted in a positive impact on returns when the fund is managed by a private sector manager (Murray, 1999). Interest in asymmetric funding schemes has grown recently warranting further evaluation of these types of measures.

97. Co-investment funds have become increasingly popular in recent years, due in part to the perceived success of existing programmes. New Zealand has had co-investment funds in place for a number of years. Initially, they set up a co-investment fund for venture capital investment (VIF in 2002) and later created one focused on angel investment (SCIF in 2005, see Box 8 below for further details) which was modelled on the Scottish Co-investment Fund (see box below). The rationale was based on the financing difficulties of start-ups with high growth potential (innovative, technology-based firms) at the seed and early stages.

¹⁰ According to the questionnaire, this structure is used in 83% of the co-investment programmes surveyed.

Box 8. The New Zealand Seed Co-Investment Fund (SCIF)**New Zealand**

Classification:	Equity: Co-investment	Year launched:	2005
Size:	Preference for SMEs	Geographic scope:	New Zealand businesses
Age/Stage:	Seed and Early stages	Sector:	All (restrictions apply*)

Overview

SCIF is an equity investment fund aimed businesses at the seed and start-up stage of development that have strong potential for high growth. SCIF provides NZD 40 million of matched seed funding. It is expected to operate for a period of 12 years in total, with an expected investment period of 5-6 years.

Model and structure

SCIF invests in seed and early stage firms alongside selected Seed Co-Investment Partners. These "approved co-investors" are private investor groups, usually BA groups or syndicates (currently there are 14 approved co-investors);

SCIF can invest a total of NZD 4 million per co-investment partner. Investments through the Fund would be limited to a maximum investment of NZD 250 000 in any one company or group of companies; with the possibility of another NZD 250 000 in follow-on capital at the discretion of NZVIF.

For SCIF to invest, it requires a 50/50 matching private investment and acts as a direct investor on the same terms as the co-investment partner. Follow-on funding rounds are eligible for further co-investment. SCIF invests in line with industry standard terms and takes an active role in tracking investment performance.

*Sectors excluded (except technology/innovation activities): Farming; Forestry; Banking; Infrastructure; Retail.

Source: www.nzvif.co.nz/seed-co-investment-overview.html

98. The overall policy objective of the New Zealand Seed Co-investment Fund (SCIF) is to support the development of the angel equity finance market in the country, by developing a greater professional capacity in the market for intermediating funds between investors and technology-based start-ups, increasing the depth of specialist skills needed to assess and manage early stage investments, increasing the scale and enhancing networks for early stage investment, catalysing investments that would have not have been made without the programme, minimising fiscal risk and covering costs. An impact evaluation is currently underway and should be finalized in 2013. This will include an evaluation of the outcomes of the programme, the level of additionality associated with the outcomes of the programme and the unintended consequences, both positive and negative.

6.2.4 Regional Programmes

99. The Scottish Co-Investment Fund (SCF) was one of the first co-investment funds targeting seed and early stage investment and has been a model for the development of other programmes around the world (Box 9). SCF focuses on angel and VC investment in Scotland and has led to the creation of a vibrant entrepreneurial ecosystem in the region. SCF also allows partners from the rest of the United Kingdom and/or Europe.

Box 9. Scottish Co-Investment Fund (SCF)

Classification:	Equity: Co-investment	Year launched:	2003
Size:	250 employees; £16m net assets	Geographic scope:	Scotland
Age/Stage:	Angel and VC investment	Sector:	All (restrictions apply*)

Overview

The Scottish Co-Investment Fund (SCF) is a 72 million equity investment fund, partly funded by the European Regional Development Fund (ERDF).

Model and structure

SCF is part of a portfolio of funds managed by Scottish Enterprise:

- SCF: invests between GBP 100 000-1 million in deals up from GBP 500 000-1 million. The SCF invested GBP 12.3m in 63 deals during 2009/10.
- Scottish Seed Fund: invests up to GBP 100 000 in deal sizes up to GBP 500 000. The Scottish Seed Fund invested GBP 1.7 million in 21 deals during 2009/10.
- Scottish Venture Fund: invests GBP 500 000-2 million in deals between GBP 2-10 million. The Scottish Venture Fund invested GBP 16.7 million in 18 deals during 2009/10.

Partners

SCF is a pari passu investor alongside private sector investors. No public sector investment in a managed partner fund. SCF does not find and fund its own deals. It forms contractual relationships with: *i*) business angel syndicates *ii*) VC fund managers from the private sector. Partners find the opportunities, conduct the due diligence, negotiate the terms of the deal and commit their own resources. SCF automatically matches all qualifying investments from registered partners subject to eligibility.

Investments

SCF can invest up to GBP 1 million in any one company, either in tranches or multiple rounds and total deal size must not exceed GBP 2 million. The investment must be matched by the partner on an equal basis. SE can't own more than 29.9% of the voting rights of the company and public money can't be more than 50% of the total risk capital funding.

Conditions

SCF funds are not placed in a Limited Partner agreement with the partners. Instead the agreed funding is legally guaranteed by SCF and funds are only drawn down once an investment has been legally concluded and subject to meeting all of the criteria. Partners are paid a flat fee of 2.5% of the SCF funds invested and are awarded partnership status with SCF for three years (with funds drawn down over that time period, reviewed every 6 months and with an annual partner review).

Principle

SCF operates at minimum cost to the public finances on a fully commercial basis (and therefore with no subordination of the public funds).

*Sectors excluded: Real estate/property development; Social and personal services; Pubs, clubs and restaurants; Local services; Banking and insurance; Motor vehicles; Nuclear; Professional services; Retail.

Source: Mason 2009, Scottish Enterprise 2010 and www.scottish-enterprise.com

100. A Scottish Enterprise commission evaluation showed that over half of SCF investee companies felt their chances of raising capital would not have been possible without SCF and 78% stated that the fund was vital to their survival (Harrison, 2009). This study also showed that SCF has had a positive economic impact on the companies they have supported in terms of turnover, gross value added and employment.

6.2.5 Cross-country programmes

101. In Europe, the European Investment Fund (EIF) is an active financial institution in the private equity market. EIF invests in venture and growth capital, from the very earliest stages of intellectual properties development into technology transfer, to more mature phases of development (see Box 10).

Box 10. The European Investment Fund

EIF delivers a wide range of innovative risk financing solutions for SMEs which comprise equity, guarantees, credit enhancement and microfinance, and are delivered through financial intermediaries (including venture and growth capital funds). EIF has a unique tripartite shareholding structure combining public and private investors: the European Investment Bank (EIB) 62.1%, the European Union through the European Commission (EC), 30%, and 24 public and private financial institutions, 7.9%.

Equity instruments

EIF's equity activity is principally backed by resources from its main shareholders, the EIB and the EC.

Technology Transfer, Venture Capital, Growth and Mezzanine: EIF covers most of the equity financing value chain for SMEs, from the earliest stages of intellectual property development through to the venture and seed capital and mid- later growth stages. At end 2012, EIF's total net equity commitments amounted to EUR 7bn, mobilising close to EUR 38bn of additional capital from other sources.

European Angels Fund: This pilot initiative, launched initially in Germany, provides equity to Business Angels and other non-institutional investors for the financing of innovative companies in the form of co-investments. The initiative is currently being rolled out in other countries.

Corporate Innovation Platform: This new initiative developed by EIF offers corporate investors efficient access to the European venture capital and innovation space and facilitates cooperation between SMEs, investors and corporates.

Joint ventures and specific programmes involving equity investments

Funds of funds: EIF advises and manages a number of funds of funds for third party investors including national and regional governments as well private and strategic investors. The goal is to support EC policy objectives and provide financial solutions to complement national schemes.

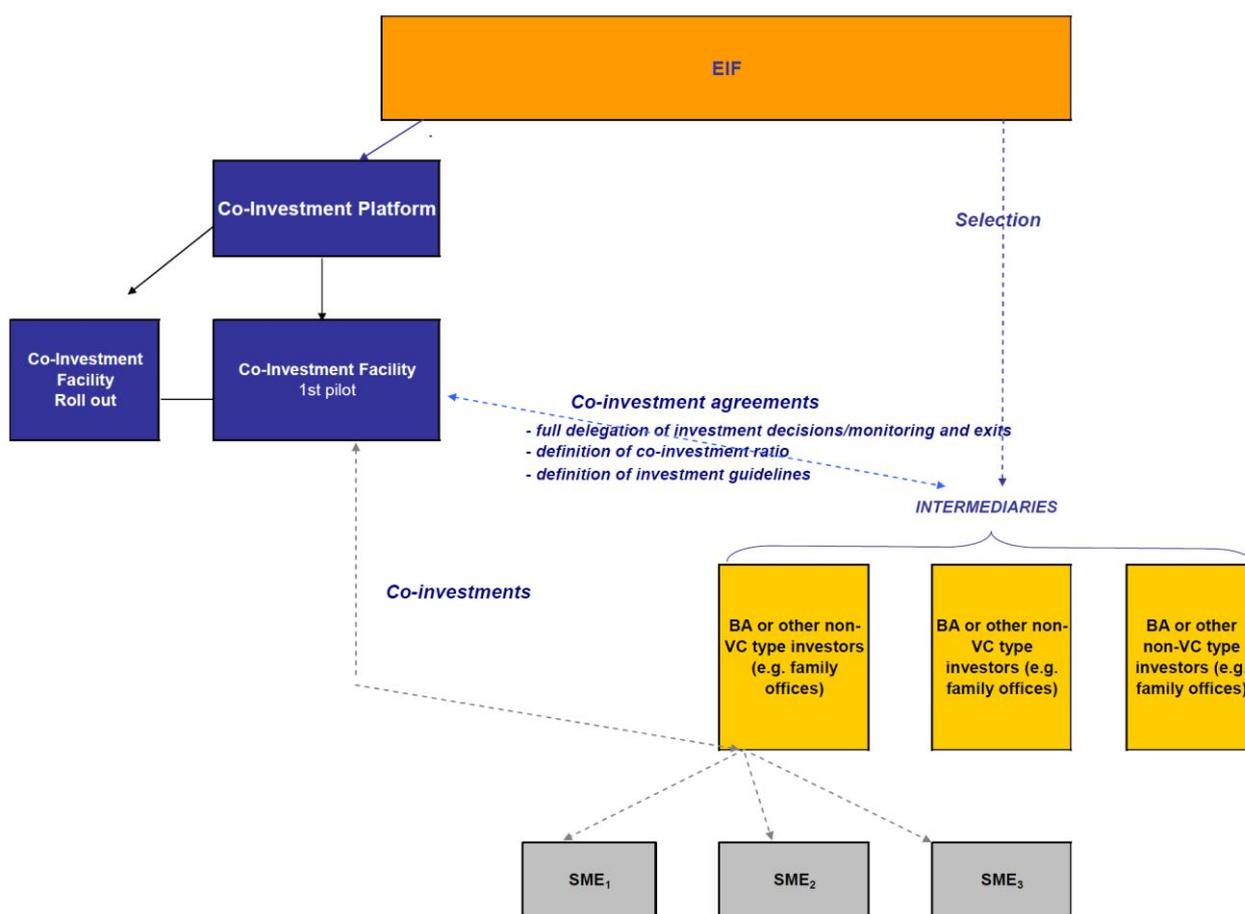
Joint European Resources for Micro to Medium Enterprises (JEREMIE): JEREMIE is a joint initiative of the EC, EIF and EIB to promote SME access to finance and deliver financial engineering using European regions' Structural Funds. EIF manages 14 JEREMIE Holding Funds and is essential in developing know how transfer and capacity building at the local level.

Examples of the EIF joint Equity fund of funds programmes include: Istanbul Venture Capital Initiative (iVCi, see Box 7), ERP-EIF Dachfonds, LfA-EIF Facility, UK Future Technologies Fund, and Baltic Innovation Fund. Examples of supported Venture Capital funds in countries and regions where EIF manages JEREMIE Holding funds include: Practica Seed Fund (Lithuania), Eleven Fund (Bulgaria), and Piraeus Equity Advisors (Greece).¹¹

102. Most recently, the EIF has launched a pilot angel co-investment programme in Germany and Spain. While most co-investment funds are structured to invest alongside angel groups, networks or syndicates, this pilot provides co-investment with approved individual angel investors. If successful, the program will be rolled out to other countries across Europe. The structure is highlighted below (Figure 9).

¹¹ From the list in Annex 1, the following funds are managed by the EIF: *i*) ERP-EIF Dachfonds (Germany); *ii*) Early Stage ICT Venture Capital Fund (Greece); *iii*) New Szechenyi Risk Capital Programme (Hungary); *iv*) JEREMIE Holding Fund (Slovakia).

Figure 9: Structure of EIF European Angels Fund



Source: Pelly and Kraemer-Eis (2012).

6.3 The balance between public and private sector investment

103. Recent evidence from Buzzacchi *et al.* (2013) suggests that higher public stakes in equity instruments can result in increased private venture capital risk aversion and longer investment periods. In addition, evidence suggests that VC-backed firms perform better if the amount invested by the public sector is smaller, and under control of a private fund manager, than if the amounts are larger (Brander *et al.*, 2010). This reinforces the argument that the size of the public intervention must be appropriate—i.e. large enough that it makes a difference, but not so large that it affects the alignment of incentives and objectives leading to relative underperformance of VC-backed firms (Lerner, 2009). A commonly held view is that the public co-investment should not exceed 50% of the total investment (EVCA, 2005a).

104. In Europe, there has been a significant change in the mix of institutional investors in venture capital over the past five years with the share of government agencies increasing from 14% in 2007 to 40% in 2012 (Figure 10)¹². Even though, there was a corresponding 57% drop in the total amount of funds raised during that period, including a 47% drop in seed and early stage venture capital, the amount of

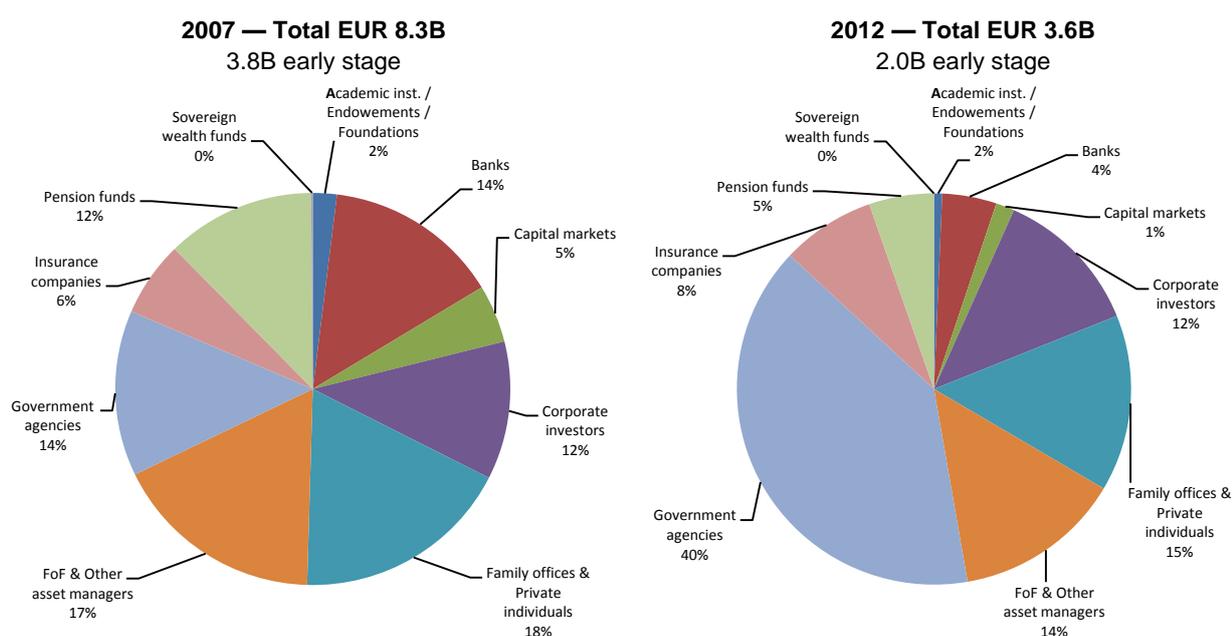
¹² Please note that the relative importance of different institutional investors varies greatly between countries. The differences in sources of funding have also been associated with greater focus on different investment stages (Mayer *et al.*, 2005).

funding from government agencies increased by 85.4% between 2007 and 2012. While the increase in government agency funding is a response to the financial crisis, it shows a growing reliance on public sector funds in the European venture capital market, particularly the EIF (EVCA, 2012). It is important that public support is leveraged by private investment and does not inadvertently serve to crowd it out (Lerner, 2009).

Figure 10: Venture Funds Raised in Europe by Type of Investor¹³

2007 vs 2012

(Incremental amount raised during the year as a percentage of total amount)



Source: EVCA PEREP_Analytics.

105. Research has shown that public funds should only be utilised where a tangible or imminent market failure in the private sector is evident. These vehicles should be designed in line with the market needs. When public funds are deployed, it is most efficient to channel these through existing market-based systems, namely private funds, and to shape them with a clear market approach to yield the intended results (Lerner, 2010). In addition, public contributions should strive to encourage private funding from both individual and institutional investors (EVCA, 2010).

106. Furthermore, in order to assess their accuracy and efficacy, a periodic review is important to help make adjustments as needed (see section 9 which focuses on evaluation). At the same time, it is important to focus on development of the market, rather than solely on a provision of financing. This requires creating the proper incentives and supporting the development of the necessary quality, skills and experience in the venture firms and angel investors to match international norms (Lerner, 2009).

¹³

Europe includes here Austria, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Former Yugoslav Republic of Macedonia, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Spain, Slovak Republic, Slovenia, Sweden, Switzerland, Ukraine and United Kingdom.

7. Regulatory and Administrative Barriers

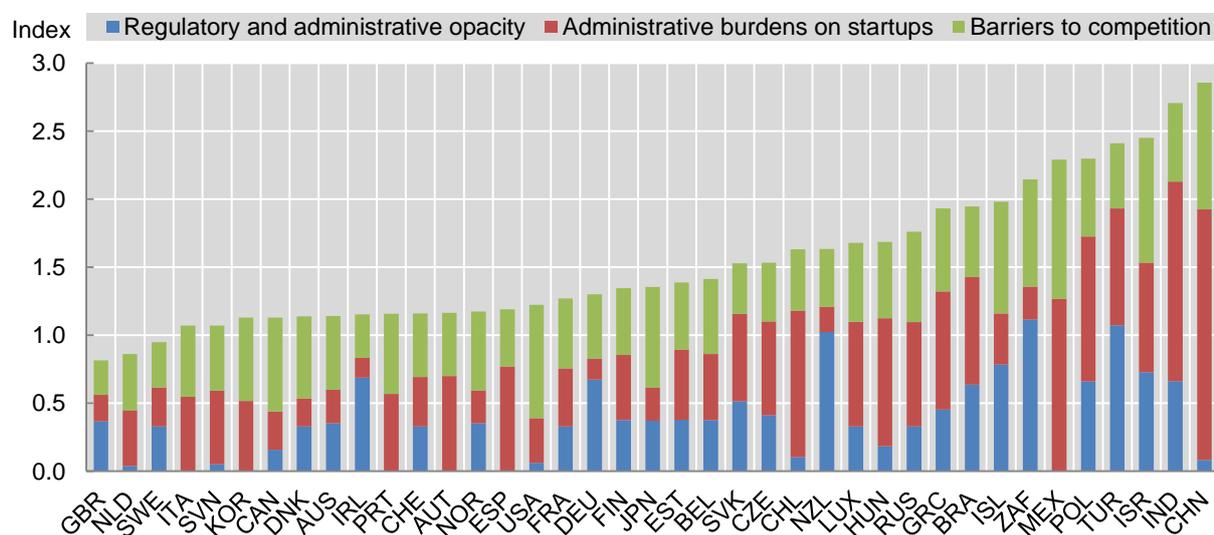
107. The financial system has a central role in fostering innovation and growth. Policies and reforms of financial institutions and markets can facilitate financing of entrepreneurial firms. Evidence shows that start-up, small and medium sized companies are more constrained by financing and other institutional obstacles than large enterprises (Beck, 2007). Often the regulatory system is complex and/or has hidden disincentives for young innovative firms and/or investors.

108. To facilitate the creation of new high growth and innovative firms, it is important to simplify the complicated and costly administrative requirements involved in the creation of a business. Legal and regulatory barriers to entry include: administrative burdens to open a business; legal barriers to entry; bankruptcy laws; property rights protection; investors' protection and labour market regulations (OECD, 2008a). The administrative burdens and costs of growing and internationalizing firms also need to be addressed. Evidence shows that an appropriate regulatory and legal system can promote the development of the venture capital industry (Armour and Cumming, 2006; Bonini and Alkan, 2012).

7.1 Overview of regulatory barriers on seed and early stage investment

109. As shown in Figure 11 below there are large differences across countries on the extent of these barriers, although they have been generally decreasing over the last ten years.¹⁴ Recent micro-econometric cross-country evidence confirms that tough regulatory and legal environments, in both the labour and the product market, have a negative impact on business entry because they dampen the positive effects of social networks and business skills on entrepreneurship while amplifying the role of attitudes towards risk (Criscuolo and Wilson, 2013).

Figure 11: Barriers to Entrepreneurship 2008



Note: Scale from 0 to 6 from least to most restrictive.

Source: OECD, Product Market Regulation Database, May 2011.

110. Recent OECD works shows that financial markets which are more developed, and therefore enable the reallocation of resources, facilitate innovation in firms (Andrews and Criscuolo, 2013). A

¹⁴ Further reforms have been undertaken since 2008 in many OECD countries.

number of other policy areas are also important including tax policy, bankruptcy rules and employment protection legislation. High corporate, individual and/or capital gains taxes may discourage entrepreneurs from establishing a business. Stringent bankruptcy regimes, with high costs or penalties for failed entrepreneurs, can also provide disincentives for entrepreneurs to create high growth (and higher risk) firms (Armour and Cumming, 2006). In addition, restrictive labour market regulations can impact the creation and growth of firms as well as the supply of venture capital (Da Rin *et al.*, 2005).

111. Other regulatory barriers which might directly impact seed and early stage finance include the ease with which venture capitalists and business angels can organise themselves as limited liability entities (OECD, 2013b). In addition, regulations governing the types of institutions that can invest in seed and early stage venture capital, such as banks, pension funds (venture capital activity in the United States increased significantly following the removal of restrictions on pension fund investments in 1979) and insurance companies impact the amount of capital available for venture capital. On the other hand, rules affecting stock markets, including secondary exchanges and initial public offerings (IPOs) are important factors for seed and early stage investment decisions. These are discussed in further detail below.

7.2 *The role of exit markets*

112. An effective integrated market for financial services is necessary to provide more capital for investment, including equity sources such as angel investment and venture capital. Efficient legal investment structures and stock markets are necessary to recycle and redeploy financial wealth (Criscuolo and Wilson, 2013). Financial returns from venture capital, angel and other private equity investments are predicated on (positive) exits, in the form of trade sales (mergers and acquisitions) or initial public offerings (IPOs) on stock markets. Sometimes the exit involves a sale to another investor. In reality, the majority of exits are negative – failure or bankruptcy of the firm given the risks of investing in early stage companies (see figure 14). Investors therefore take a diversified approach to their portfolio to spread their risk.

113. IPOs or trade sales (M&A) are critical for high growth entrepreneurship. These types of exits provide an opportunity for investors to realize returns from their investment and therefore potentially frees up funding for further investment in innovative young firms. If investors are not able to capitalise their returns, through an IPO or trade sale (merger or acquisition), then they will not have funds to recycle into new investments (Michelacci and Suarez, 2004; Schwienbacher, 2009). In difficult financial markets, such as those of the past several years, the lack of exits creates a serious issue for both the angel and the venture capital markets and will impact the future pipeline of investors.

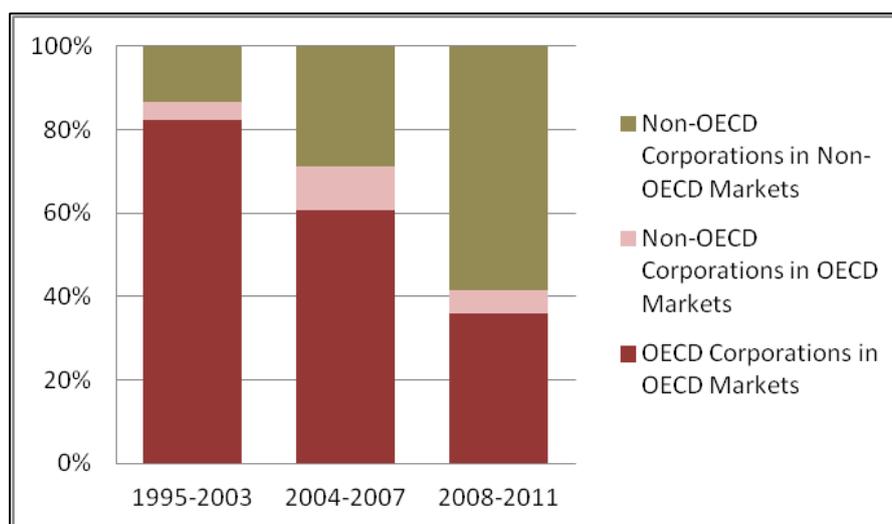
114. In addition, both trade sales and IPOs often attract positive attention for successful entrepreneurs, which in turn can inspire others. On the other hand, failures or bankruptcies can inhibit entrepreneurship in countries in which there is not a strong entrepreneurial culture or in which there is a stigma of failure, or in fact, a real penalty for bankruptcy in terms of stringent bankruptcy legislation which do not allow entrepreneurs to redeploy assets (Andrews and Criscuolo, 2013).

115. Financial and exit markets, and particularly IPOs, in many countries including the United States, have been heavily affected by the recent financial crisis and pose a real concern for private equity backed companies (Litan and Schramm, 2012). Recent OECD data shows that the number of new firms listed on stock exchanges in OECD countries in the past decade dropped by half as compared to the previous decade (OECD, 2012a). In addition, the amount of equity that companies raised decreased significantly. In terms of IPOs, the market has not yet recovered from the financial crisis. This is clearly the case in Europe and in the U.S. (see figure 13).

116. The importance of capital markets in non-OECD economies has also been rising over the years. Figure 12 shows the increase in relative shares of equity raised through IPOs in non-OECD equity markets. Additionally, non-OECD regions are increasingly active in terms of IPOs. Recent OECD figures (Isaksson and Celik, 2013) indicate that, in the period following the financial crisis (2008-2011), the share of total equity capital raised in the world by non-OECD companies amounted to about two thirds (63%) and that this equity was mostly raised in non-OECD markets (almost 60% of total IPO values). These figures contrast with much lower equity shares in the turn of the century (1995-2003), where non-OECD markets providing less than 20% of all new risk capital raised in the world.

Figure 12: Global shift in equity markets

The relative share of equity raised through initial public offerings by OECD and non-OECD corporations and its distribution between OECD and non-OECD equity markets



Note: OECD corporations' fundraising in non-OECD markets throughout the period was insignificant and are not included in the figure.

Source: Isaksson and Celik (2013), based on data from Thomson Reuters, Datastream, stock exchanges' and companies' websites.

117. In the U.S. States and Europe, the evolution of the number of IPOs and trade sales since 2007 has not, been positive in general (Figure13). The financial crisis has had a strong negative impact upon both trade sales and IPO. In 2008, the number of trade sales fell 23.5% in Europe and 13.5% in the U.S. The decrease in IPOs was more pronounced in the U.S. (92.4%) but the decline was also strongly felt in Europe (67.8%). Recovery to pre-crisis levels was only visible in the U.S. with respect to trade sales (in 2010 these were 11.8% higher than in 2007). In Europe, the market shows no sign of recovery, with trade sale (49.1%) and IPO (38.3%) activity more than halving during the period to 2012. These figures raise some concerns on the ability of venture capitalists to capitalise their returns and feed them into new investments.

Figure 13: Venture Capital Exits in the United States and Europe (2007-2012)

Index of the number of trade sales and IPOs (2007=100)

Europe
No. Trade sales 2007= 324
No. IPOs 2007= 128

United States
No. Trade sales 2007= 488
No. IPOs 2007= 92



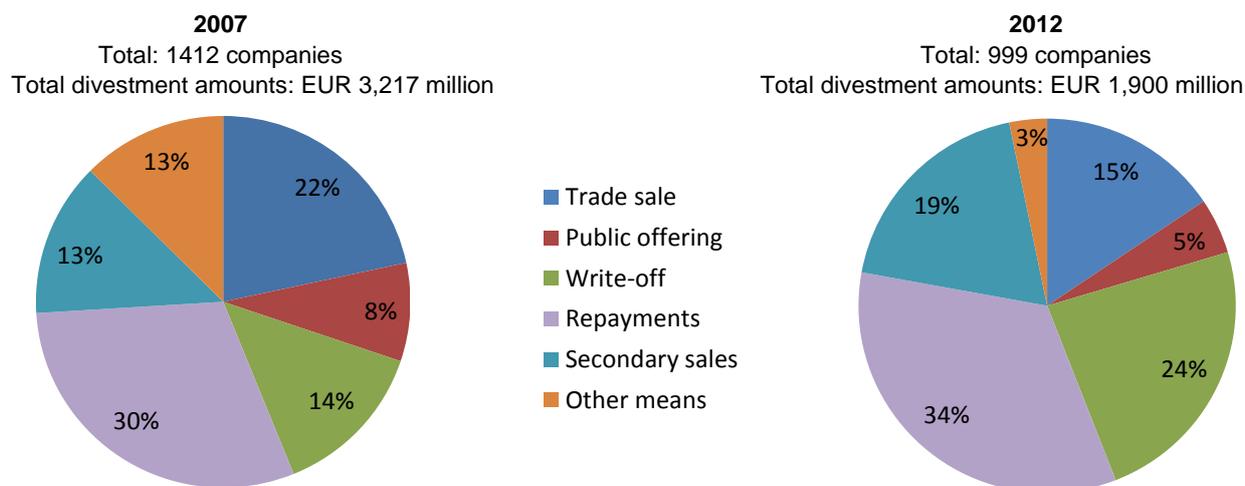
Note: The underlying information does not reflect trade sales and IPOs deal values (amounts of capital raised). The values refer to VC-backed deals only, thus it does not comprise information on broadly defined PE-backed deals.

Source: OECD based on industry statistics by EVCA/PEREP_Analytics and Thomson Reuters/National Venture Capital Association.

118. In Europe, according to EVCA data (see Figure 14 below), only 15% of venture capital exits in 2012 (in terms of number of companies) were through trade sales and even fewer, 5%, were IPOs. These numbers are clearly lower than pre-crisis (2007) figures that pointed to 22% of exits through trade sales and 8% through IPOs. Repayments and write-offs were and still are the most prevalent form of exit. Secondary sales also amount to a very significant percentage of total number of exits.

Figure 14: European Venture Capital Exits

2007 vs 2012 Percentage of number of companies



Note: This information does not reflect amounts of capital raised.

Source: OECD based on industry statistics by EVCA/PEREP_Analytics, 2013.

119. The importance of exits and exit markets is often not fully appreciated by policy makers. Venture funds are structured in a way that requires an exit within the life cycle of the fund, which is typically 10 years, to enable the investors to realize a gain (or loss) and to reinvest the proceeds in other ventures. For both venture capital and angel investors, knowing when to exit, and having the will to do so even in the case that the exit is negative, is as critical as making the initial investment decision (Schwienbacher, 2009). Exit plans should already be taken into consideration when the first investment is made as it takes time and strategic implementation to move towards positive exits. Without exits, private equity investors have no way of realizing returns on their investments and passing those returns to their institutional investors, enabling further investment.

120. While vibrant stock markets are critical for successful IPOs and the development of the venture capital market (Black and Gilson, 1998), the potential role of policy in this area is limited. However, there are some actions that can be taken. These include lowering the costs of going public (Ritter, 2013) as well as improving the rule of law and the legal system (Cumming et al, 2006, 2010)¹⁵.

121. Many high growth entrepreneurial firms are too small to meet the market capitalization requirements for listing on primary stock markets. Secondary markets, such as the NASDAQ which was created in the United States in 1971, have played a very important role for these firms as well as in the development of the venture capital industry (Kortum and Lerner, 2000). Recently, the London Stock Exchange launched a new platform to attract the growing number of U.K. technology firms (Financial Times, 2013). The new platform will operate in between the main LSE exchange and the Alternative Investment Market (AIM).

122. During the dot.com boom in the late 1990's, some countries developed secondary markets to allow entrepreneurial firms to list within their country although many high growth firms still prefer the U.S. stock exchanges for greater liquidity and visibility. In Europe, several countries have, in the past, unsuccessfully tried to create a secondary market for smaller companies. Intense competition over investors amongst exchanges and practices that prevented domestic companies to list abroad, are amongst some of the reasons for failure (Posner, 2009).¹⁶

123. Evidence shows that even in recent years, the average long run performance of IPOs in secondary markets is much lower than in main markets, although some of these secondary markets have been relatively successful in attracting IPOs (Vismara *et al.*, 2012). The relatively smaller size of individual economies adds to the difficulties in successfully creating and developing secondary markets and initiatives at a regional level driven by strong supranational political commitment are likely to be more successful (Posner, 2009).

124. Regulation such as the 2002 Sarbanes-Oxley Act in the U.S., on standards for public companies and other compliance costs, have been pointed out as some of causes for the declining trend in small company IPOs in the U.S. over the last decade. However, this is not undisputed and significant debate still exists. In the United States, a recent legislative initiative (2012 JOBS Act) aims at increasing *public capital markets for emerging growth companies*, by allowing “emerging growth companies” to benefit from reduced regulatory and reporting requirements up to five years from its IPO. Discussions on regulation in the U.K. are also underway (Kay Review). However, there is still significant debate on the implications of these initiatives. In summary, the role of policy in developing stock markets is not clear beyond the setting the appropriate framework conditions and some possible actions on the regulatory side¹⁷.

125. As noted earlier, the majority of positive exits, especially in today's environment, are through trade sales or merger and acquisitions (Figures 13 and 14). Trade sales have long been regarded as the most likely exit route (Cumming and MacIntosh, 2003), even though not necessarily the most profitable from

¹⁵ Other measures may also focus on aftermarket incentives such as setting the appropriate tick sizes (Weild *et al.*, 2013)

¹⁶ Please note that there are different segmentation models that can be adopted in the set up of secondary markets. A popular example can be found in the “exchange-regulated” Alternative Investment Market (AIM) that has been relatively successful in attracting IPOs. However, markets with this type of model have been shown to underperform, when compared to other secondary market set ups (Vismara *et al.*, 2012)

¹⁷ However, the effectiveness of some of these initiatives has been disputed. Recently authors have argued that even regulatory changes have minor impacts upon the levels of IPOs as compared to technological and structural shifts (Gao *et al.*, 2012)

the venture capitalist perspective.¹⁸ While IPOs usually occur within a given “incubation” time in order to maximise potential gains, trade sale exits tend to take more time and be less homogeneous in terms of returns (Giot and Schwienbacher, 2007; Achleitner *et al.*, 2012). In addition, some policies inadvertently set incentives for companies to remain small and independent when such companies would be better off growing or becoming part of a larger organization (Ritter, 2013).

126. Often, a larger technology or pharmaceutical or other sector specific company buys the start-up as a way to acquire the technology, expertise and perhaps also the intellectual property (Criscuolo and Menon, 2013). Sometimes two start-ups merge to combine forces. The prevalence of trade sales highlights the importance of networks and relationships between large and small firms. These relationships often don’t develop naturally and require concerted effort. Venture capital firms and other equity investors often help build these bridges as a way to secure an exit for the firms in which they have invested.

7.3 *Results from the OECD financing questionnaire*

127. This section focuses on restrictions on institutional investors and incentives for venture capital firms and angel investors to invest across borders based on answers provided by member countries in the recent OECD questionnaire. The results in this section should be read with caution as it is possible that some questions were misinterpreted.

7.3.1 *Restrictions on institutional investors*

128. In terms of restrictions on institutional investors investing in alternative assets, Table 6 summarises the responses given to the OECD questionnaire. It should be noted that alternative assets include not only private equity (of which venture capital and angel investment are a small percent), but also other alternative assets such as hedge funds, infrastructure, real estate, currency, commodities, structured products and others. Nevertheless, countries were also specifically asked if the different types of investors were allowed to invest in foreign venture capital firms.

129. According to the questionnaire, most countries do not have restrictions on institutional investors investing in alternative assets. In countries where restrictions apply, these are most often for banks, pension funds and insurance companies. This is significant since these are typically the largest institutional investors in the private equity market. In many countries institutional investors are allowed to invest in foreign venture capital firms.

130. The results also indicated that these restrictions have mostly remained unchanged over the past 5 years with the exception of Korea, Mexico and the U.S. These results are surprising given recent regulatory reforms at the global level (e.g. Basel II and upcoming Basel III for banks) as well as other regulations which are expected to be enforced in a number of OECD countries, most notably in Europe (Solvency II for insurance companies and possible amendments to the IORP directive for pension funds).

131. Other recent legislative initiatives may have a significant impact upon the seed and early stage market to the extent that they affect investors in alternative assets (including venture capital investors). Examples of these are the Dodd-Frank act in the U.S. and the Directive on Alternative Investment Fund Managers (AIFMD) in Europe.¹⁹ The motivation for the introduction of these rules stems from the

¹⁸ The commonly accepted view that IPOs are, in general, more profitable than trade sales (Chaplinsky and Gupta-Mukherjee, 2010; Giot and Schwienbacher, 2007) has been recently challenged (Achleitner *et al.*, 2012).

¹⁹ The Dodd Frank act can be found at: <http://www.sec.gov/about/laws/wallstreetreform-cpa.pdf>.

The AIM at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:174:0001:0073:EN:PDF>

financial crisis and based on the existence of a perceived “regulatory gap” for certain types of financial instruments. While the consequences of this new wave of legislation are yet to be seen, the industry has already expressed concerns that it can have unintended negative consequences upon venture capital financing (e.g. EVCA, 2011a).

132. However, as the question in the questionnaire applied to alternative assets overall, not only to VC investments, the responses may not reflect an expected increase in restrictions on riskier assets. This is particularly relevant for banks, pension funds and insurance companies, important investors in private equity and the ones which will be impacted most by the upcoming changes in regulations.

133. As it is shown in Figure 10 in section 6.3, the share of total amounts raised by VCs from banks (as institutional investors) in Europe during 2012 was 4% (down from 14% in 2007). Also, amounts raised by insurance companies also decreased in absolute amount by 20.6% from 2007 to 2012. Pension funds, another major institutional investor type, also reduced their contribution from 12% to 5 % of the total amounts of VC raised in 2007 and 2012, respectively²⁰.

134. In the aftermath of the financial crisis, significant regulatory changes at the global, regional or national level are being pushed forward with the objective of ensuring greater financial stability. For example, while reforms such as Basel III are likely to make banking safer and more stable, there is a risk that, in the short-term, the more stringent capital requirements could reduce the supply – or significantly increase the cost – of capital for risky business enterprises (Aghion *et al.*, 2013).

135. Prudential regulation may also affect the ability of insurance companies to invest in riskier assets - Solvency II Directive in the EU (EVCA, 2011b) and alter the risk assessment of asset classes held by pension funds - amendments have been proposed to the European IORP Directive that currently follows a non-risk based approach (EVCA, 2012). As a result, on-going regulatory changes might have a significant impact upon the equity amounts being channelled to seed and early stage firms.

²⁰ Please note that these figures do not yet reflect the effects of some of the new regulations that, although approved, have not already entered into force.

Table 6: Restrictions on investment in alternative assets (including private equity)

	Banks	Pension Funds	Insurance Companies	Government Agencies	Corporate Investors	Endowment funds	Family/private offices
Australia	●	●	●	●	●	●	●
Austria	●	✓	✓	●	●	●	●
Canada	✓	✓	✓	✓	✓	✓	●
Chile	●	✓	✓	✓	●	●	●
Denmark	○	○	○	○	○	○	○
Estonia	●	✓	✓	—	●	—	●
Finland	●	●	●	✓	●	○	●
France	○	—	○	○	○	○	○
Germany	●	○	✓	●	●	●	●
Greece	●	✓	●	✓	●	✓	●
Hungary	✓	✓	✓	—	●	—	—
Ireland	●	●	●	●	●	●	●
Israel	✓	✓	✓	●	●	—	●
Italy	○	○	○	○	○	○	○
Japan	●	—	●	—	—	—	—
Korea	✓	✓	✓	✓	✓	✓	✓
Mexico	✓	●	✓	✓	○	✓	○
Netherlands	✓	✓	✓	●	●	●	●
New Zealand	●	●	●	●	●	●	●
Norway	●	●	●	—	—	—	—
Poland	○	○	○	○	○	○	○
Portugal	●	●	●	●	●	●	●
Slovakia	✓	✓	✓	●	✓	—	—
Slovenia	✓	✓	✓	○	●	●	●
Switzerland	—	—	—	—	●	●	●
Turkey	—	✓	—	—	—	—	—
United Kingdom	○	○	○	✓	○	○	○
United States	✓	●	●	—	●	●	●

*Note: The following countries did not answer this section of the questionnaire: Belgium; Czech Republic; Spain; Sweden. Iceland and Luxembourg did not complete questionnaires.

✓: Country has corresponding restrictions

○: Country does not have corresponding restriction

●: Country does not have corresponding restriction and investments in foreign VCs are also allowed

—: Question not answered by country

7.3.2 Legal structures

136. Homogenisation of fund structures across countries is essential to reduce set up and transactions costs for foreign funds willing to commit investments (EVCA 2006, Cumming and Johan, 2007). With respect to the different legal structures that apply for venture capital firms and according to the results from the questionnaire (see Table 7 below), the majority of countries allow both limited liability partnerships and tax flow through (taxes levied on each investor rather than on the fund\partnership). However, venture capital firms in some countries operate within a general limited liability partnership structure that is sometimes argued to be too costly and complex for small venture capital funds to operate (OECD, 2013c). The questionnaire results only apply to venture capital firms, However, it should be noted that in some OECD economies limited liability partnerships are not allowed for small VC funds or business angels groups (in Sweden for example) which can also be a barrier for seed and early stage investment.

Table 7: Legal structures that apply for venture capital firms in OECD countries*

<u>Structure</u>	<u>Countries</u>
Limited liability partnerships	Australia; Austria; Canada; Denmark; Estonia; Finland; Germany; Greece; Ireland; Italy; Korea; Mexico; Netherlands; New Zealand; Norway; Poland; Portugal; Slovak Republic; Slovenia; Sweden; Switzerland; United Kingdom; United States
Tax flow through	Australia; Denmark; Finland; France; Germany; Greece; Hungary ; Ireland; Korea; New Zealand; Norway; Poland; Portugal; Sweden; Switzerland; Turkey; United States

*Note: The questionnaire only covered legal structures applying to venture capital firms and not business angels groups. The following countries did not answer this question: Belgium; Chile; Czech Republic; Israel; Spain. Iceland and Luxembourg did not complete the questionnaire.

137. Evidence shows that in several OECD countries, the lack of a legal form for angel or venture capital investment can be a barrier to seed and early stage investment. Even in countries in which a limited partnership structure exists, there can be barriers in terms of taxation which can make seed and early stage investing complex and costly (OECD, 2013c).

138. The Early Stage Venture Capital Limited Partnerships programme (ESVCLP) in Australia is an example of a fund structure which provides some tax incentives for investors (Box 11). The Venture Capital Limited Partnerships (VCLP) program was introduced in 2002 as part of an initiative to “provide Australia with a world’s best practice vehicle for venture capital”. The ESVCLP was introduced in 2007 as a result of a 2005 review of the Venture Capital Industry in Australia (AVCAL, 2005).

Box 11. Early Stage Venture Capital Limited Partnerships (ESVCLP)

Australia

Classification:	Tax: Back-end	Year launched:	2007
Company Size:	Less than AUD 50 million	Geographic scope	Australia*
Age/Stage:	Seed and Early stages	Sector:	All (except finance and real estate)

Overview

The Early Stage Venture Capital Limited Partnership (ESVCLP) scheme entitles a registered fund to flow-through tax treatment

Incentives

Investors (resident or non-resident) receive a complete tax exemption on their share of the fund's income (revenue and capital).

Limited partners in an ESVCLP have no tax liability on income or capital gains they receive from the ESVCLP.

General partners of an ESVCLP that operate as a Venture Capital Management Partnership can claim their carried interest on capital account rather than revenue account.

Criteria

Access is restricted to new venture capital funds structured as limited partnerships.

The limited partnership:

- Applicable to VC funds, angel groups or syndicates and foreign investors;
- Committed capital between USD10 million and USD100 million;
- Each investor is limited to contributing no more than 30% of a fund's total capital (with exceptions)
- Will remain in existence for between 5 to 15 years;
- Is stand-alone and not part of a bigger fund or attached to a unit trust.
- The investment:
 - The ESVCLP can acquire 100% of a company but can only allocate 30% of its capital to one investment;
 - Must be held for at least one year;
 - Is an acquisition of new shares or units (limited provision to acquire pre-owned).

* An ESVCLP may invest up to 20% of its committed capital in businesses that are not Australian residents

Source: <http://www.ausindustry.gov.au/programs/venture-capital/esvclp>

139. The review focused on the need to improve the attractiveness of the VCLP to global investors (the policy goal of the programme). Recommendations included an alignment with international LP structure, removal of some VCLP investment restrictions (e.g. investments only in Australian companies, investment limit, eligible activities, investments only in shares), broadening tax exemption and reducing some uncertainty on tax treatment as capital gains.

7.3.3 Cross-border investments

140. According to the questionnaire, no restrictions apply to privately held venture capital firms investing in a different country than that of its headquarters. However, some OECD countries apply restrictions²¹ on public-private VC firms and public VC firms.

141. Cross-border deals are only possible when the necessary relationships are in place, there is sufficient knowledge about the other market and the legal systems permit deals to be done under similar terms. As a result, on the angel investment front, only a tiny fraction of deals are cross-border. However, for venture capital, the ability to do cross-border deals is critical and restrictions can be a significant barrier to investment.

7.3.4 Attracting experienced foreign investors

142. According to the questionnaire, some OECD countries have programmes in place to attract foreign investors including venture capital and angel investors. These programmes include a mix of incentives including public matching or co-investment funds, tax incentives and/or facilitating access to

²¹ It should be noted that while many countries may have indicated that there are no restrictions investing outside of their country, they may have regional restrictions, as is the case for some of the Nordic countries.

networks. Despite of the success of programmes such as the Yozma Fund in Israel in the early to mid-1990's, which focused on attracting experienced venture capitalist to Israel to catalyze the development of the Israeli VC market, only a few OECD countries have structured programmes to attract foreign investors.

143. While some OECD countries do not have any specific policy or programme that aims to attract experienced foreign investors, some equity and tax programmes currently in place in such countries are open to foreign investors and aim at developing fund managers with expertise in the field. The questionnaire responses indicated that support in several countries has been increasing in this area.

Table 8: Government programmes to attract foreign investors in seed and early stage companies*

<u>Type of investors</u>	<u>Countries</u>
VC investors	Canada; Chile; Finland; Hungary; Ireland; Korea; New Zealand; Poland; Slovenia; United Kingdom; United States
Business Angel Networks	Canada; Hungary; Ireland; New Zealand; United States
Individual angels	Canada; Finland; Hungary; Ireland; New Zealand; United States
<u>Type of programme</u>	<u>Countries</u>
Co-investment	Hungary; Ireland; Korea; New Zealand; Poland
Tax	Australia; Chile; Ireland; Slovenia
Networks	Canada; Finland; Ireland; New Zealand; United Kingdom

*Note: The following countries did not answer this question: Belgium; Czech Republic; Japan; Spain. Iceland and Luxembourg did not complete the questionnaire.

7.3.5 *Securities legislation limiting private investment*

144. Private investment from seed and early stage investors is often limited by legislation to “qualified” investors, solicitation and advertising of investment opportunities, restrictions on alternative investment pools and/or international accounting and financial directives. In countries such as Germany, Mexico, Poland, United Kingdom and The United States all of these restrictions appear to apply based on the questionnaire results.

145. Requirements for qualified investors are common in a number of OECD economies. Typically informal and formal investors in start-ups must be accredited as sophisticated investors given the complex nature of investing in young firms although the strictness of the accreditation process can vary across countries. In Europe, a new legislative initiative to harmonise both requirements for qualified investors and legal structures has been recently adopted by the European Parliament.²²

146. The adoption of international accounting and financial standards in different countries increases the ability of investors to correctly assess and allocate funds according to profitable investment opportunities, increasing transparency and information between the manager and investors. Nevertheless it may impose additional burdens for investors in riskier assets, depending on how instruments are classified

²² Please refer to the Regulation “on European venture capital funds” available at <http://register.consilium.europa.eu/pdf/en/12/pe00/pe00073.en12.pdf>.

as “fair value”, according to standards set by the IASB. According to the questionnaire, international directives have been applied in Germany, Greece, Mexico, Poland, United Kingdom and the United States.

8. Entrepreneurial Ecosystem and the Demand Side

8.1 *Policy rationale for intervention*

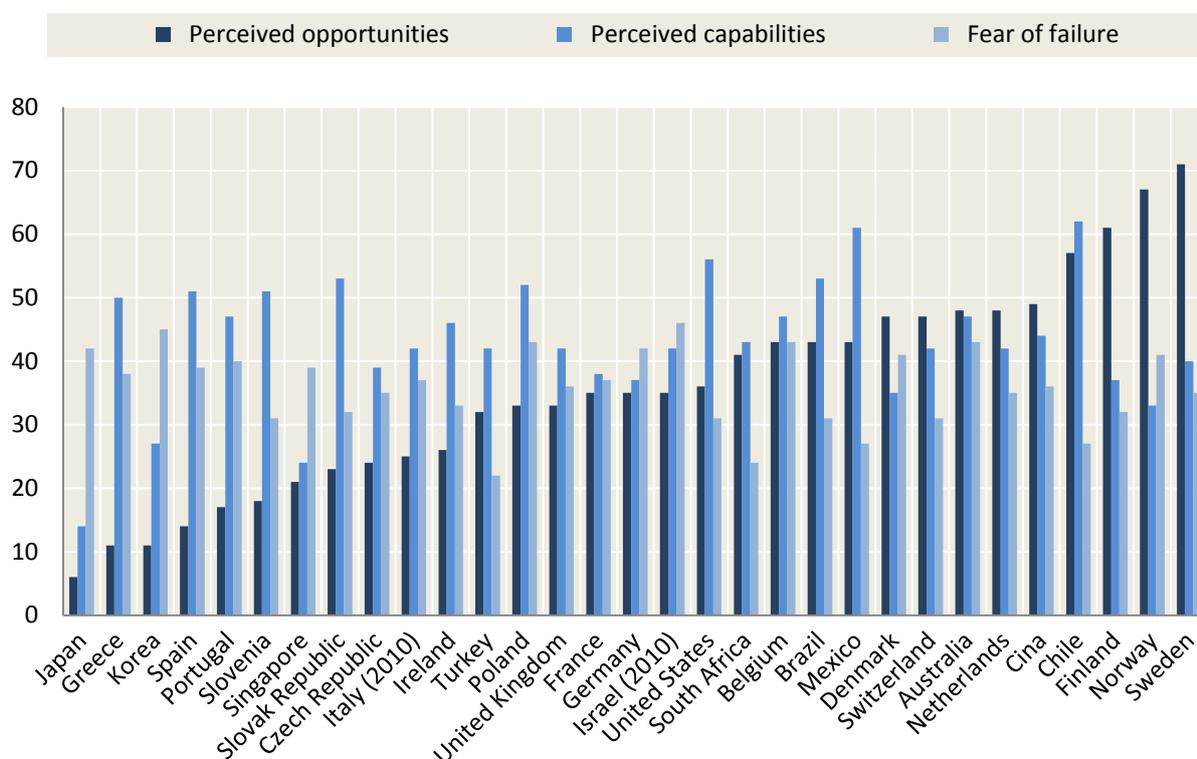
147. While many policies have focused on the supply side, other public and private activities have focused on demand-side actions which aim to increase the quality and sourcing of deals. The demand side is often overlooked in favour of supply side actions which may be perceived as being more visible and direct. Developing human capabilities, whether on the investor or the entrepreneur side, is important. There is also increasing evidence of the importance of social capital and networks – both local and global (Shukla, 2012), as high growth firms need to grow beyond national borders and networks are often critical in facilitating that growth. However, there is limited evidence on the appropriate role of the public sector versus the private sector in some of these areas.

8.1.1 *Entrepreneurship culture*

148. Entrepreneurial culture and fear of failure are significant barriers to entrepreneurship. In many countries around the world, cultural traditions and the lack of exposure to entrepreneurship as a viable career option can be barriers to innovation and economic growth (World Economic Forum, 2009). By raising awareness and building the necessary skills, at all education levels, a new generation of entrepreneurially-minded people can be encouraged to create new jobs. However, the perceived image of entrepreneurship is, unfortunately, still negative in a number of countries. Culture and image are typically affected by a large number of factors, among them family, friends, the media and the school system. Evidence shows that the opinions and experiences of peers are likely to affect the decisions of individuals to become entrepreneurs (Autio, 2010).

149. According to the OECD (2012b), perceptions of entrepreneurial opportunities are relatively high across countries, although they have dropped slightly as a consequence of the economic crisis. However, the fear of failure may make people hesitate to start a business. This continues to be a key barrier for entrepreneurship as the fear, and in some cases the actual penalty, for failure in many countries is often higher than the perceived opportunities (see Figure 15). Meanwhile, in countries in which the perceived opportunity is higher than the fear of failure, such as in the Nordic Countries, the perception of capabilities is lower, also creating a barrier to entrepreneurship.

Figure 15: Entrepreneurial perceptions, 2011 or latest year



Source: OECD, *Entrepreneurship at a Glance 2012*

150. Although many countries have made progress in encouraging a more favourable culture and environment for entrepreneurship, much remains to be done to make this a reality. Changes in cultural attitudes will be a key driver in improving the entrepreneurial environment but this takes time. In that regard, the school systems play a critical role. Entrepreneurship in schools and universities, mentoring and role models can help change mindsets and encourage more young people to consider entrepreneurship as a future career path (World Economic Forum, 2009).

151. Universities play a key role as connectors in entrepreneurial ecosystems (EFER, 2006). They can be the engines that connect people and ideas as well as attract capital for new ventures. Universities attract talent, develop intellectual capital, conduct research and train generations of young people to work in a variety of fields. However, the gap between what is taught in universities and the needs of the job market is rapidly expanding. Universities need to transform themselves to meet the needs of the 21st century (OECD, 2008b). While a number of universities are becoming more global (Wildavsky, 2010), they must also become more entrepreneurial (Kauffman Foundation, 2008).

8.1.2 Entrepreneurial ecosystems

152. An entrepreneurial economy consists of individuals and institutions in an interconnected system (Schramm, 2006) in which multiple stakeholders play a role in facilitating entrepreneurship and innovation. This includes business (large and small firms as well as entrepreneurs), policy-makers (at the international, national, regional and local levels), and educational institutions (at all levels but particularly at higher education institutions).

153. However, even more important are the linkages between these institutions – the functioning of the entrepreneurial ecosystem. Too often these links, whether between universities and businesses or between entrepreneurial and large firms, do not function well and in some cases even become bottlenecks. The key to a vibrant entrepreneurial ecosystem is in facilitating better linkages between these actors. The links in the entrepreneurial ecosystem are primarily through personal networks or “social capital”. A growing body of research demonstrates the critical role that social capital plays in high-growth ventures (Stuart and Sorenson, 2007).

154. Governments can’t create ecosystems but can strengthen it by providing incentives or supporting demand-side oriented programs (see next section). As mentioned earlier in the paper, having the appropriate legal and regulatory framework in place and creating appropriate financial incentives can also contribute to a vibrant ecosystem. In addition, developing a well-educated population and having open borders to people (Guest, 2012), ideas and capital are also important. Initiatives such as “Startup Chile”, which provides incentives for successful entrepreneurial teams to move to Chile to build their firms, can help jump start high growth entrepreneurship as well as develop local talent.

8.2 *Public policy interventions*

155. A healthy entrepreneurial ecosystem is critical for successful seed and early stage investing. At all investment stages, entrepreneurs may have difficulties in understanding the financing options available as well as the expectations of potential investors. Investor readiness programmes help entrepreneurs anticipate the needs of investors and prepare for presenting to them. The OECD financing questionnaire showed that many countries have investor readiness programmes for entrepreneurs and, overall, support for these programmes has increased over the past five years (Table 9).

Table 9: Policies targeting human and social capital development for seed and early stage investment

	Entrepreneur Training			Investor Training				Social Networks				
	Financing Sources	Investor readiness	Change	LPs	VCs	BAs	Change	Incubators	Accelerators	BA Networks	Matchmaking services	Change
Australia		✓	▲									
Austria										✓		△
Belgium	✓	✓	○							✓		○
Wallonia												
Flanders	✓	✓	▲			✓	○	✓	✓	✓	✓	▲
Federal												
Canada	✓	✓	▲					✓	✓	✓	✓	▲
Chile	✓	✓	▲					✓	✓	✓	✓	▲
Czech Republic	✓	✓	△					✓	✓	✓		▲
Denmark	✓	✓	○									
Estonia	✓	✓	▲					✓	✓			▲
Finland	✓	✓	▲						✓			▲
France	✓	✓	▲					✓	✓	✓	✓	▲
Germany	✓	✓	▲					✓	✓	✓	✓	○
Greece	✓	✓	△					*	*	*	*	—
Hungary	✓	✓	▲									
Ireland	✓	✓	▲	✓		✓	△	✓	✓	✓	✓	▲
Israel	✓	✓	○					✓			✓	○
Italy	✓		○					✓				○
Japan	—	—	—	—	—	—	—	—	—	—	—	—
Korea	✓	✓	▲	✓	✓	✓	▲	✓	✓	✓	✓	▲
Mexico	✓	✓	▲					✓	✓	✓		▲
Netherlands	✓	✓	▲			✓	○	✓	✓	✓		○
New Zealand	✓	✓	△	✓	✓	✓	△	✓		✓	✓	▲
Norway								✓				○
Poland	✓	✓	○		✓		○	✓	✓		✓	○
Portugal	✓	✓	○					✓	✓	✓	✓	○
Slovak Republic		✓	○							✓		▲
Slovenia	✓	✓	▼	✓	✓		△	✓				▼
Spain	—	—	—	—	—	—	—	—	—	—	—	—
Sweden	✓	✓	○			✓	—	✓		✓	✓	—
Switzerland	✓	✓	○									
Turkey	✓	✓	△									
United Kingdom	✓	✓	▲					✓	✓			○
United States		✓	○									

*Note: Greece has policies or programmes to strengthen collaborative networks between seed and early stage firms and investors, but these were not discriminated in the Questionnaire. Please note that Iceland and Luxembourg did not complete questionnaires and therefore are not included in the table above

✓: Country has corresponding programme
○: Remained unchanged
—: Question not answered by country

▲: Increased
△: Started in the last 5 years

▼: Decreased
▽: Ceased during the last 5 years

8.2.1 *Entrepreneur Training*

156. Many entrepreneurs are unsuccessful in raising finance because they either are not familiar with the options for external sources of financing or they are not adequately prepared to present to investors (Mason & Harrison, 2004). Access to information about external sources of finance for start-ups can be helpful for enabling for entrepreneurs to access the right type of financing for their venture.

157. Investment readiness programmes for entrepreneurs is an area policy-makers have supported in a number of countries. These programmes typically focus on access to equity financing and focus on helping entrepreneurs understand the specific needs of these investors (European Commission, 2006). Programmes for entrepreneurs are typically focused on “pitching” the company and investor readiness but can also include some of the topics such as an overview about angel and venture capital investing and/or programmes on deal negotiations, term sheets, valuation and exits. In many countries, these programmes are run at universities, incubators/accelerators and/or by specialised agencies.

158. Many programmes, especially publically funded ones, focus solely on sources of finance and presentation skills, not on the more pertinent business issues which are the determining factors for whether or not investors are willing to provide funding (Mason & Harrison, 2004). Programmes which help entrepreneurs develop their business plans and presentations to a level which answer the most pertinent questions for investors – such as the vision, business model and skills balance within the team as well as business development and access to market plans, could be more helpful (Toschi and Murray, 2009). These programmes can help address the entrepreneur’s side of the information asymmetry issue by helping entrepreneurs better understand the expectations and needs of investors and prepare themselves accordingly, which in turn can result in greater success in securing funding.

159. The question is who is best placed to support and deliver these programmes and whether entrepreneurs will be motivated to participate in them. In Australia, data from CAUSEE²³ indicates that the majority of both nascent and young firms do not access these sources of information. However, it is unclear whether the low usage of these options is due to a lack of awareness or other reasons (eg. perceived usefulness). The most effective training programmes are often taught by experience entrepreneurs or investors (OECD, 2011).

8.2.2 *Investor training*

160. According to the questionnaire results, very few OECD countries have training programmes for investors, whether for institutional investors, venture capitalists or angel investors. Training of investors is often seen as important for professionalising the industry (Bottazzi *et al.*, 2004).

161. Because angel and venture capital investors are typically experienced business people, it is assumed that they also know how to invest. However, investing in start-ups differs greatly from being a financial investor or building a company in a particular sector. It requires a combination of both skill sets, as well as specific technical skills in terms of conducting due diligence and determining company valuations. Therefore training and mentoring, in which new investors can learn from experienced investors, is an important part of the process (OECD, 2011).

²³ The Comprehensive Australian Study of Entrepreneurial Emergence (CAUSEE) research project studies business start-ups and entrepreneurs over time, analysing the factors that influence the emergence and development of new, independent firms. Detailed information is available at: <http://www.qut.edu.au/research/research-projects/the-comprehensive-australian-study-of-entrepreneurial-emergence-causee>

162. In many countries, venture capital firms are smaller (Murray, 2010) and less experienced than those in the U.S. where the industry has been active for many decades. As seen in data in Section 2 of this paper, this often results in smaller deals and can have a negative impact on market performance (Lerner *et al.*, 2011). Programmes which attract foreign investors can play an important role in the training and development of local investors, as evidenced in the Yozma programme (Senor and Singer, 2009). As noted in the previous section, not many OECD countries have focused on this area and it may be warrant further consideration.

163. Training for institutional investors can also be important. Although the amounts that these investors provide to the venture capital industry are large, they are small in terms of the percentage of assets they under management (typically less than 2%). Therefore, it is often hard for institutional investors to devote the necessary time to understand and monitor venture capital investments and in many cases, they invest through intermediaries. More awareness raising and training about the private equity industry in general, and venture capital in particular, may help encourage institutional investors to devote more resources to the asset class. Trade associations such as the European Private Equity and Venture Capital Association (EVCA) provide training courses for institutional investors and fund managers to help develop the industry.

164. The OECD's Directorate for Financial and Enterprise Affairs has launched a number of training programmes focused on investors, including sophisticated investors as those described in this section.

8.2.3 *Network Development*

165. From Table 9 above, we can see that the majority of OECD countries have programmes in place for developing "social networks" (incubators, accelerators, business angel networks and matchmaking services) and policy support for those programmes has grown in the past five years. These programmes help link investors and entrepreneurs and, in many cases, provide additional support and mentoring services.

166. Network development is not only important at the early stages of firm creation but also for the growth and development of these firms (Kauffman Foundation, 2007). Building links between investors, entrepreneurs and larger companies can lead to more successful "exits" of ventures in the future by creating links with potential later stage investors and corporate partners.

167. With the current state of the financial markets, IPOs on stock exchanges are rare (Litan and Schramm, 2012). Therefore the only option for high growth entrepreneurs and their investors to realise the gains from the company is to sell or merge their firm with another company at the appropriate time. To that extent, programmes that help develop international networks or connections between start-ups and larger companies can be helpful.

8.2.4 *Business angel networks (BANs)*

168. Business angel networks (BANs) play a match-making function between angel investors and entrepreneurs - they do not invest directly themselves (EBAN, 2006). This role is structured to address the information gaps discussed earlier. BANs help to make the investment process more efficient by connecting angels wanting to invest with other players in the local ecosystem (incubators, VCs, development agencies, banks, stock exchanges and others) and, most importantly, with entrepreneurs looking for capital (EC, 2002). One of the most important and basic roles of BANs is to give visibility to the angel activity in a region, and therefore serving as "front door" for entrepreneurs looking for financing, without necessarily giving visibility to each individual angel, who often prefer to keep a low profile.

Box 4. Business Angel Networks in Europe

In Europe, the initial focus was on the creation of BANs, rather than angel Groups, to play a match-making role between potential angel investors and entrepreneurs addressing the information asymmetries in the market. EBAN was created in 1999, with European Commission support, as a federation of BANs across Europe. This was followed by national BANs or associations in several other countries including Italy in 1999, Germany in 2000, France in 2001 and the United Kingdom in 2004 as well as the growth of BANs within countries.

After initial support from the European Union and, in many cases, on-going support from national governments, the number of BANs in Europe grew dramatically but the success and investment activity of these BANs varies. BANs have broader membership criteria than angel groups, which consist only of angel investors. BANs often include service providers and others who are either not investors at all or who are financial, not angel, investors and therefore are unwilling and/or unable to provide the necessary assistance to entrepreneurs that normally accompanies angel investment. EBAN, the pan-European association for the industry, is working on developing a set of professional standards, including some type of criteria for determining the activity level of BANs, which can also serve as benchmarks for BANs.

Source: OECD 2011.

169. BANs can be national, regional or local. They can also focus on particular sectors. More recently, a growing number of “affinity” BANs have been created for groups of people with similar backgrounds, experiences, cultures or nationalities (i.e. alumni of universities, diaspora groups, etc.). The mode of operating, including the frequency of meetings and membership criteria can vary tremendously. BANs usually have one or more paid employees and normally operate as a non-profit (EC, 2002). BANs are much more prevalent in Europe (excluding the United Kingdom) than groups, which are more common in the Anglo-Saxon countries.

170. While angel networks can help to address the information asymmetry problem, evidence is still lacking in terms of the track record of individuals BANs. A study in Belgium showed that angel investors would not have known about 82% of the deals in which they invested had it not been for the business angel networks (Collewaert *et al.*, 2010). Sometimes the best investment opportunities are channelled to the better known angel investors who may not need or have an incentive to co-invest through BANs.

171. With less public money available due to tighter public budgets in countries around the world, angel associations, networks and groups have been seeking new operating models to ensure sustainability. Given their role in market development and data collection, in particular, it is important that these organisations find the necessary resources to continue their work. However, any public support should be linked to measures of intended outcomes.

8.2.5 *Incubators*

172. Despite the growing evidence that ecosystems are driven by people, many initiatives in the past decade have focused on infrastructure and, in particular, the creation of incubators (Hansen *et al.*, 2000). Many of the early incubator models focused on “infrastructure” (i.e. the provision of office space) supplemented with support services for entrepreneurship, often provided at a discounted rate. The goal of these incubators was to minimize the strategic, bureaucratic and organizational impediments for firms pursuing risky opportunities (Hansen *et al.*, 2000).

173. Evidence shows that the rigor of the screening process has a direct impact on the performance of incubators (Aerts *et al.*, 2007). Many incubators have not had effective screening processes (i.e. not looking at a balanced set of factors and/or not seeking adequate expert/private sector input) and therefore

have not been successful. In addition, many incubator models focus more on “infrastructure” rather than social networks, the latter of which have been shown to play the more important role (Rothschild and Darr, 2005).

8.2.6 *Accelerators*

174. More recently, focus has shifted to new accelerator models (Miller and Bound, 2010). These models are focused on entrepreneurial teams, selected on a highly competitive basis. Unlike incubators, which provide access to space and discounted services, accelerators provide tailored mentoring and support to the selected teams. In the ICT and internet related sectors, investments require smaller amounts of initial capital than more traditional technology and science sectors. These firms have been termed “lean start-ups” as they allow greater capital efficiency and more rapid testing and adjustment of products and/or business models (Ries, 2011).

175. A new phenomenon of private sector accelerators has been spreading around the world, based on these new “lean start-ups”. Many of these are following the successful models of Techstars and Y Combinator in the United States. Accelerators proactively select and focus on working with high potential teams for a defined period of time and differ from the approach of incubators, which are more focused on providing infrastructure and a broad set of services. Accelerators are playing an increasingly important role in boosting high growth start-ups and are becoming an increasingly important player in the entrepreneurial ecosystem for angel and VC investors (Kauffman Foundation, 2007).

176. Experience from these initiatives is indicating that a more focused approach and facilitating access to highly relevant networks play a key role in the successful growth of start-ups. However, further evaluation of these relatively new programmes is needed to provide concrete evidence.

177. Policy makers in Finland have sought to catalyse growth entrepreneurship as part of the ecosystem through an accelerator programme called Vigo²⁴. The programme was inspired by initiatives in Israel but developed for the market in Finland. The aim of the new accelerator programme is to attract more international talent from overseas, by offering an attractive financial upside, to help the companies successfully grow. There is strong representation from serial entrepreneurs, high level investors and other successful entrepreneurs on the board of Vigo and as mentors. Vigo is currently undergoing a mid-term evaluation, commissioned by the Ministry of Employment and Economy but conducted by outside experts.

8.2.7 *Online investment tools and crowdfunding*

178. Increasingly, angel investors are using online tools, such as Gust²⁵, to assist in the investment process. In addition, online angel networks or matching platforms have started to grow such as AngelList²⁶ in the United States. AngelList has attracted a number of high quality experienced angel investors and provides extended matching between investors registered in the system and entrepreneurs.

179. These online services can reduce information search costs for investors. However, online platforms do not replace the necessity for personal contact and face-to-face interactions which are necessary for building confidence and trust between investors and entrepreneurs. Online platforms often end up serving as vehicles for increasing the number of financial investments as opposed to the traditional

²⁴ For further information, see <http://www.vigo.fi>

²⁵ For further information, see <http://gust.com>

²⁶ For further information, see <http://angel.com>

model of angel investment, which would typically include hands-on support from the angel investor to the entrepreneur (OECD, 2011).

180. More recently, the concept of “crowdfunding” (using online platforms to enable lots of people to invest small amounts in new ventures) has also started making its way into the seed and early stage markets. While there is a growing hype about crowdfunding, there are also many misperceptions. Crowdfunding initially started for philanthropic projects (in the form of donations) and then spread to consumer products (in the form of pre-funding orders) and lending (De Buysere *et al.*, 2012). However, equity crowdfunding is relatively new.

181. A lot of attention has been given to the recent legislation in the United States which will allow equity crowdfunding (JOBS Act, approved in 2012 but will only come into effect in 2014), however, this is currently not legal in many countries. Currently there are active equity crowdfunding platforms in the Belgium, France, Germany, the Netherlands and the United Kingdom but many of these are new (a number of them only launched in 2012) so there is not yet much experience or evidence on how these are working (De Buysere, 2012).

182. According to industry estimates, crowdfunding doubled from USD 1.5 billion in 2011 to USD 3 billion in 2012 (. However, the majority of that funding is currently for donations, products or lending, not yet for equity. Proponents say that equity crowd funding will allow businesses to raise capital faster and more efficiently (Neiss, 2011). However, this would require changes in securities laws, specifically those related to issuing securities²⁷ (NESTA, 2012a). Equity crowdfunding will essentially allow unsophisticated investors to invest directly in young risky companies with the expectation of a financial return (NESTA, 2012b). There are many opportunities for all types of crowdfunding but also many challenges, particularly for equity crowdfunding (Isenberg, 2012).

9. Data and Evaluation

183. The experience and sequencing of policies and programmes in seed and early stage financing has varied greatly in countries around the world. Policies that have worked in one country may not necessarily work the same way, or be as successful, in another country. It is important to assess the local environment and existing policy mix to implement the relevant instruments in the appropriate timeframe. In addition, the level, sophistication and dynamics of seed and early stage investment can vary greatly across regions within countries and therefore policy makers must take this into account.

184. The most recent OECD policy workshop on seed and early stage financing²⁸ included a focus on evaluation. The workshop highlighted the fact that evaluation of SES market interventions entails significant data and methodological challenges. Having an ex-ante and well defined evaluation strategy is important. This includes having a well-defined policy objective and putting thought into the policy questions and evaluation design at the beginning of the process.

185. Evaluations should take into account the set of considerations related to the supply-side, demand-side and framework conditions. This can be challenging as it involves a mix of direct, indirect and external effects. In addition, quantitative evaluations need to be complemented with qualitative information.

²⁷ Those seeking equity investment must produce a prospectus approved by an authorised person and can only offer shares to sophisticated investors.

²⁸ Held in April 2013 in Switzerland and hosted by the State Secretariat for Economic Affairs SECO in the Federal Department of Economic Affairs, Education and Research (EAER).

186. Most evaluations focus on supply-side SES financing policies. Due to their “softer” nature, it is difficult to evaluate demand side policies. The impact of framework conditions is also difficult to assess. Challenges remain in identifying complementarities between the different policies and it was suggested at the workshop that further OECD work in this area would be useful. An understanding what other OECD countries are doing in terms of evaluation of financing policies is helpful in working towards developing better evaluation processes.

187. The awareness of the importance of evaluating policy interventions is rising. Recently, the HM Treasury published the Magenta book (HMT, 2011) with general guidelines for policy evaluation that, together with the GAO/CBO guidelines in the United States provide state of the art insights on policy evaluation design, implementation and common evaluation challenges (GAO, 2012). At the OECD, the CIEE Expert Group on the Evaluation of Industrial Policy has held a series of workshops over the past year.

188. There should be periodic evaluations and an effort to improve the quality of evaluations. Most importantly, the results of evaluations should feed back into the policy process to identifying areas for adjustment in the programme being evaluated. More and better evaluations are needed but trade-offs may exist between conducting good evaluations and delivering clear and timely policy messages.

9.1 *Evaluations of Financing Instruments*

189. Evaluation of policies is critical to ensure they are having the intended outcomes and to enable the necessary modifications to be made along the way. While policies targeting seed and early stage equity investment are being put in place in a growing number of countries, there have been few formal evaluations of these programmes to date. According to the information provided by member countries in the questionnaire, only 13 out of 32 OECD countries have evaluated their seed and early stage tax incentives and/or equity instruments (See Table 10 below).

190. It should be noted that many of these instruments have been launched in the past five to ten years which can be a factor in terms of the relatively limited number of evaluations conducted to date. Nonetheless, ex-ante and early assessments could be performed. Grants, loans and guarantee schemes, which in many cases have been in place longer, have been evaluated in 21 OECD countries (but these are not listed in the table below as these types of instruments are covered extensively in work by the WPSMEE).

191. There are many approaches to evaluation. Table 10 distinguishes between “internal” ones (those conducted by the implementing agency), external-government (those conducted by another government agency) and external-other (those conducted by outside experts/academics). For the full name of the instruments in the table below, please refer to Annex 1.

Table 10: Types of evaluations of tax and equity instruments for seed and early stage financing²⁹

	Programmes Evaluated	Internal	External-government	External-Other
Australia	✓			IIF ; PSF
Austria				
Belgium	✓		YIC	ARK
Canada	✓		SR&ED	
Chile				
Czech Republic				
Denmark	✓		VF	IM
Estonia				
Finland	✓			FII
France	✓	MEF ; CDC	JEI	
Germany	✓			HTG
Greece				
Hungary				
Ireland	✓	EII ; SCS		HPSU
Israel	✓			
Italy				
Japan				
Korea				
Mexico				
Netherlands	✓			BPSV
New Zealand	✓	VIF		
Norway	✓			NSCS
Poland				
Portugal				
Slovak Republic				
Slovenia				
Spain*				
Sweden	✓		Almi ; IF	
Switzerland*				
Turkey				
United Kingdom	✓			EIS ; UKIIF ; ECF&CfEL
United States				

*Note: The following countries do not have seed and early stage tax or equity policies at the national level: Spain Switzerland; United States. Iceland and Luxembourg did not complete questionnaires and therefore are not included in the table.

9.2 Types of Evaluations

192. The types of evaluations noted above vary between ex-ante to ex-post evaluations, from qualitative to quantitative approaches, and range in terms of the metrics (e.g. inputs, outputs, outcomes\impact). The type of evaluation might also depend on the purpose of evaluating a given programme and the questions that policymakers pose (HM Treasury, 2011). It might be of interest for policymakers to understand if the programme was carried out according to plans (process evaluation), to identify the main changes in the SES market that resulted from the programme (impact evaluation) and/or to weight the overall costs and benefits of the policy intervention (economic evaluation). Sometimes programmes or policies are simply benchmarked to other programmes, whether within the country or in others.

193. Most evaluations of risk capital policies in OECD countries to date seem to have been more qualitative than quantitative. The majority of evaluations have been conducted by outside experts and

²⁹ Please refer to the electronic version of this document for links to these evaluations.

academics. However, many evaluations have been conducted by the implementing agency. Some countries tend to conduct evaluations of these types of instruments more systematically than others but this might also be related to the length of time the programmes have been in place.

194. There are many challenges in evaluating these programmes, including what is evaluated – whether general policies or specific instruments and which levels are evaluated (implementing agency, programme or instrument level). In addition, there are many elements which can be evaluated including the design (was it structured correctly?), process (was it implemented according to plan?) and governance (was it managed properly?). Many other factors come into play as well, including the impact of the institutional setting, the policy mix and interaction of policies, and the level of intervention (local, regional or national).

9.3 *Design and implementation*

195. Evidence has shown that the design and implementation of these funds plays a key role in how well they meet the intended objectives (EC, 2012). The design of the programme needs to fit the local context, including the existing financial ecosystem. Also, the linkages between these programmes and other support schemes are very important. Often multiple financing programmes are managed by one organization. This could be for various stages (seed, early stage, growth or expansion) using different instruments (debt, equity and/or non-financial).

196. The agency or organisation responsible for management and implementation sometimes changes over time. This might be due to consolidation (as has recently been the trend) or for other reasons, including political ones. In many cases the names of the programmes also change over time making it difficult for those trying to follow these instruments (entrepreneurs, researchers and others). This has been one of the challenges in the pulling together information from the OECD Financing Questionnaire (Annex 1).

197. The way in which these programmes operate is critical to their success. This includes the outreach or awareness-raising with the targeted company population and the decision-making process. If the process is overly cumbersome or time-consuming, the more eligible companies might choose not to apply. The way in which the public and private collaboration is coordinated is also important as well as the relationship and interaction between the programme managers and the supported companies.

9.4 *Time lags and market cycles*

198. Getting the timing right for policy intervention is not simple. Policy makers need to know, not only when to start policies, but perhaps more importantly, when and how to end them. Also, market timing is important. Government's role as a catalyst in the market is more important during downturns than during market booms (Brander *et al.*, 2010).

199. It should be noted that a significant amount of time in planning (and, in many cases, securing the necessary approvals) is often necessary before programmes are launched. It can also take time for the full benefits of policies and programmes to have an effect, especially for SES investing which requires a long-term investment horizon (Lerner 2009). Policies that are stopped and started within short time frames often are not able to reach the intended results.

200. In addition, the scarcity of SES data (particularly angel investment) and the lumpiness of venture capital data (one large deal can distort the figures) further complicating that ability for policy makers to identify the right policy at the right time. More and timely data is therefore important. A better quantification of gaps is needed for policy makers to be able to distinguish between true “market failures”

versus the lack of a viable market. Policy interventions when there is no possibility of creating a self-sustaining market will end up being no more than an inefficient form of subsidy.

9.5 *Data challenges*

201. The lack of reliable data on seed and early stage financing can be a barrier to the effective evaluation of programmes in terms of overall impact in the economy. Firms receiving support are not always tracked accurately by the implementing agencies. Commercial databases focus on venture capital and only include some angel financed deals (those in which VCs were also involved). In addition, these databases do not accurately capture all of the relevant elements of equity financing deals, particularly those at the seed and early stage.

202. It is clear that further work is needed to improve methods and accuracy of data collection for seed and early stage investment in general. Surveys of firms and mappings of individual investments are perhaps the most effective but are time consuming, costly and difficult to implement effectively. In Norway, researchers have done a comprehensive study on the angel market through a mapping of all individual investments (Grünfeld *et al.*, 2010). Other countries have conducted surveys of firms to assess their financing needs and behaviour but it should be noted that these are usually subjective and qualitative self-assessments. The European Commission recently commissioned a study, called the VICO project, to study venture capital financing in selected European countries (Colombo, 2011). These efforts should be assessed more thoroughly to identify some methodologies which could be used more broadly.

203. While data is a key factor for a successful evaluation, it is also a major cost component. Therefore, a cost-benefit analysis of whether large scale evaluations are warranted for relatively small programmes is certainly a good practice. The resources employed in the evaluation should be in line with the risks, scale and profile of the policy (HM Treasury, 2011). In addition, evaluations in SES financing usually require a combination of different statistical methods. Common challenges include the identification of causality and indirect effects. A cost benefit analysis should be done in terms of whether a large scale evaluation is warranted for relatively small programmes.

204. Another key issue concerns definitions. The technical definition of venture capital, in terms of which investment stages should be included in the data collection, is defined differently in different countries. This can lead to inaccurate comparisons of venture capital, especially the seed and early stage component, across countries. The definitions of angel investors can also vary with the words “business angels”, “informal investor” and “informal venture capital” being used interchangeably. Angel investors, who do not have a personal connection to the entrepreneur prior to making an investment, are typically (but not always) differentiated from founders, family and friends. Some studies use total informal investment (founders, family and friends plus angel investment) and others use only angel investment. This complicates data analysis as angel investment measures used in one study might not be comparable to those in another.

205. In summary, evaluation of seed and early stage financing policies is complex for many of the reasons highlighted above. In addition, the time/cost benefit for evaluation of these relatively small (compared to others) programmes might not warrant an extensive evaluation process. Even when evaluations are conducted, it can at times be unclear what the final metrics actually mean and whether appropriate counterfactuals have been taken into account. The Secretariat will be conducting further work on evaluation of capital markets interventions as part of the on-going work of the CIIE Expert Group on Evaluation of Industrial Policy.

10. Conclusions and Possible Further Work

206. The OECD financing questionnaire highlighted the growing prevalence of financing policies, particularly for seed and early stage firms. Support for these programmes has increased in OECD countries over the past five years as the financial crisis has dried up traditional sources of financing at the seed and early stages. Despite the growth of these programmes, evidence on the impact of such financing instruments is not conclusive. Analysis should include both qualitative and quantitative measures and, to the extent possible, assess the broader policy mix and not just individual instruments. Further exploring quantitative approaches to the analysis of seed and early stage financing using micro-data, where feasible, could be valuable.

207. The design and implementation of financing policies vary greatly across OECD member countries. These details often make the difference between success and failure of the programmes. Further sharing between policy makers about what works and what does not would be helpful. The two OECD financing policy workshops hosted to date, by Norway and Switzerland respectively, have provided a useful platform for the sharing of seed and early stage financing policy experiences. Member countries have expressed an interest in turning this into an on-going dialogue which may also facilitate further international research.

208. Policies often focus on the supply side when some of the key barriers are on the demand side. Further work on the demand side may be warranted, including a focus on the different models of public and private programmes in these areas. The impact of the regulatory framework on seed and early stage financing is important and could be further examined.

209. Additionally, the construction of monitoring indicators that allow cross-country comparisons of not only of the supply-side, but of the full policy mix, including demand and framework conditions could be a venue for future work. Develop a mapping of how the policy mix has evolved in different countries and determining what drove those changes could be an important tool for policy guidance.

210. Given the increasing reliance on public sector funding in the seed and early stage market, more emphasis should be put on initiatives to attract institutional investors as well as on various equity risk-sharing arrangements between public and private investors.

211. There is also interest in exploring how firms go through the financing system and which types of support they use. Often the same companies receive support at multiple stages so it could turn out that not as many companies are really supported as policy makers might think. Analysing the implications of firms benefiting from multiple support schemes could be useful.

212. It has also been suggested that a streamlined version of this questionnaire might be launched on a periodic basis to collect on-going information about developments in the seed and early stage financing market. The data could be integrated into related OECD work such as the STI and/or Financing Scoreboards.

213. This project has emphasized the need for additional research and analysis on financing policies. The results of the OECD financing questionnaire will feed into on-going CIIE, as well as broader OECD work, on entrepreneurship and financing.

ANNEX I

List of current tax and equity policy instruments by country³⁰

AUSTRALIA

Organisation responsible	Instrument name	Year Launched	Instrument classification
Department of Industry, Innovation, Science, Research and Tertiary Education			
	Venture Capital Limited Partnerships (VCLP)	2002	Tax: Back-end
	Early Stage Venture Capital Limited Partnerships (ESVCLP)	2007	Tax: Back-end
	Pooled Development Funds (PDF)	1992	Tax: Back-end
	Innovation Investment Fund (IIF)	1997	Equity: Co-investment
	Innovation Investment Follow-on Fund (IIFF)	2009	Equity: Co-investment
	Renewable Energy Venture Capital Fund (REVC)	2011	Equity: Co-investment
	Pre-Seed Fund (PSF)	2001	Equity: Co-investment
	Renewable Energy Equity Fund (REEF)	2000	Equity: Co-investment

AUSTRIA

Organisation responsible	Instrument name	Year Launched	Instrument classification
Austria Wirtschaftsservice GmbH			
	Venture Capital Initiative (VCI)	2002	Equity: Fund of funds
	Cleantech Initiative (CI)	2010	Equity: Fund of funds

BELGIUM-Federal

Organisation responsible	Instrument name	Year Launched	Instrument classification
Federal Public Service Finance			
	Partial exemption of payment of withholding tax on earned income for remuneration paid		Tax: YIC
	Exemption of capital gains on financial assets / carry over of taxation for capital gains on		Tax: Back-end
	Capital gains on equity sales are tax free in Belgium		Tax: Back-end

³⁰

Please refer to the electronic version of this document for links to these organisations and programmes.

BELGIUM- Flanders

Organisation responsible	Instrument name	Year Launched	Instrument classification
Waarborgbeheer nv			
	WinWinlening	2006	Tax: Front-end
PMV			
	Vlaams Innovatiefonds (Vinnof)	2005	Equity: Direct
	Flanders' Care Invest	2011	Equity: Direct
	Investments in VC funds (Vesalius, Capricorn, Aescap)		Equity: Fund of funds
ARKimedes Management NV			
	Arkimedes fonds	2005	Tax: Front-end
	ARKimedes fonds I (ARK I)	2005	Equity: Fund of funds
	ARKimedes fonds II (ARK II)	2010	Equity: Fund of funds

BELGIUM-Wallonia

Organisation responsible	Instrument name	Year Launched	Instrument classification
SOWALFIN			
	Spin-offs funds	2006	Equity: Direct
S.R.I.W.			
	SOFIPOLE\S.R.I.W. Fund Investments	2005	Equity: Fund of funds

CANADA

Organisation responsible	Instrument name	Year Launched	Instrument classification
Canada Revenue Agency			
	Scientific Research and Experimental Development Tax Credit (SR&ED)	1985	Tax: YIC
	Labour Sponsored Venture Capital Corporations Tax Credit	1985	Tax: Front-end
	Lifetime Capital Gains Exemption for Small Business Shares	1985	Tax: Back-end
	Rollover of investments in small businesses	2000	Tax: Back-end
	Partial inclusion of capital gains		Tax: Back-end
Business Development Bank of Canada			
	BDC Venture Capital Direct Investing		Equity: Fund of Funds
	BDC Indirect VC Investments	1975	Equity: Direct

Regional equity programmes			
Government of Alberta	AVAC Limited	1997	Equity: Direct
Investissement Québec	Teralys	2009	Equity: Fund of funds
The Government of British Columbia	The British Columbia Renaissance Capital Fund	2009	Equity: Fund of funds
Northleaf Capital Partners	Ontario Venture Capital Fund	2008	Equity: Fund of funds
Alberta Ministry of Enterprise and Advanced Education	Alberta Enterprise	2008	Equity: Fund of funds
Ontario Capital Growth Corporation	Ontario Emerging Technologies Fund	2009	Equity: Co-investment
The Federal Regional Development Agency of Southern Ontario	Investing In Business Innovation	2010	Equity: Co-investment

CHILE

Organisation responsible	Instrument name	Year Launched	Instrument classification
CORFO	K1	2008	Equity: Co-investment

CZECH REPUBLIC

Organisation responsible	Instrument name	Year Launched	Instrument classification
Český Rozvojový, Uzavřený Investiční Fond, A.S.	SEED	2013	Equity: Co-investment
	VENTURE	2013	Equity: Co-investment

DENMARK

Organisation responsible	Instrument name	Year Launched	Instrument classification
Erhvervsstyrelsen	Iværksætteraktieordning	2011	Tax: Back-end
Vækstfonden (VF)	VF Venture group	2007	Equity: Direct
	Dansk Vækstkapital (Danish Growth Capital)	2011	Equity: Fund of funds
	VF Funds	2001	Equity: Fund of funds
Danish Agency for Science, Technology and Innovation (DASTI)	Innovationsmiljøer (IM)	1998	Equity: Direct

ESTONIA

Organisation responsible	Instrument name	Year Launched	Instrument classification
Estonian Development Fund			
	Seed capital	2007	Equity: Direct
	Start-up capital	2007	Equity: Direct

FINLAND

Organisation responsible	Instrument name	Year Launched	Instrument classification
Veraventure Ltd			
	Finnvera Seed Fund	2005	Equity: Direct
	Veraventure	2003	Equity: Fund of funds
	Finnvera Seed Fund (co-investments with business angels)	2008	Equity: Co-investment
Finnish Industry Investment Ltd (FII)			
	Finnish Industry Investment	1995	Equity: Direct
	Finnish Industry Investment	1995	Equity: Co-Investment
	FoF Growth	2008	Equity: Fund of funds

FRANCE

Organisation responsible	Instrument name	Year Launched	Instrument classification
Ministère de la Recherche et de l'Enseignement			
	Jeune Entreprise Innovante (JEI)	2004	Tax: YIC
Ministère de l'Economie et des Finances (MEF)			
	Loi TEPA	2007	Tax: Front-end
	Dispositif Madelin	1994	Tax: Front-end
	Fonds d'investissement de proximité (FIP)	2003	Tax: Front-end
	FCPR fiscaux (early or later stage)	1983	Tax: Back-end
	Fonds communs de placement dans l'innovation (FCPI)	1997	Tax: Back-end
CDC Entreprises (CDC Group)			
	Fonds de Co-Investissement pour les Jeunes Entreprises (FCJE)	2002	Equity: Co-investment
	Angel Source	2012	Equity: Co-investment
	Fonds pour la Société Numérique (FSN-PME)	2011	Equity: Co-investment
	Ecotechnologies	2012	Equity: Co-investment
	Fonds National d'Amorçage (FNA)	2009	Equity: Fund of funds
	InnoBio	2009	Equity: Direct

GERMANY

Organisation responsible	Instrument name	Year Launched	Instrument classification
EIF	ERP/EIF Fund of Funds	2004	Equity: Fund of funds
	LfA-EIF Facility (part of ERP/EIF FoF)	2009	Equity: Fund of funds
	European Angels Fund (EAF)	2012	Equity: Co-investment
KfW	ERP-Startfonds	2004	Equity: Co-investment
High-Tech Gründerfonds Management GmbH	High-Tech Gründerfonds (HTG)	2005	Equity: Co-investment

GREECE

Organisation responsible	Instrument name	Year Launched	Instrument classification
TANEO S.A.	ERDF	2003	Equity: Fund of funds
JEREMIE Holding Fund- EIF	Early Stage ICT Venture Capital Fund Financial Instrument - JEREMIE	2011	Equity: Co-investment
	Seed/Technology Transfer ICT Fund Financial Instrument - JEREMIE	2011	Equity: Co-investment

HUNGARY

Organisation responsible	Instrument name	Year Launched	Instrument classification
Corvinus Venture Capital Fund Management Ltd.	Corvinus First Innovation Venture Capital Fund	2005	Equity: Direct
IT Venture Capital Fund Management Ltd.	IT Venture Capital Fund	2002	Equity: Co-investment
Venture Finance Hungary Plc.	New Szechenyi Risk Capital Programme	2009	Equity: Co-investment

IRELAND

Organisation responsible	Instrument name	Year Launched	Instrument classification
Department of Finance / Revenue Commissioners	Tax Exemption for New Start-Up Companies	2009	Tax: YIC
	Small Business preliminary corporation tax payment		Tax: YIC
	Employment and Investment Incentive, EII (formerly Business Expansion scheme)	1984	Tax: Front-end
	Seed Capital Scheme (SCS)	1993	Tax: Front-end
Enterprise Ireland	Innovative High Potential Start Up Funding (HPSU)	2008	Equity: Direct
	Innovation Fund Ireland	2010	Equity: Fund of funds
	Seed & Venture Capital Scheme	2007	Equity: Co-investment

ISRAEL

Organisation responsible	Instrument name	Year Launched	Instrument classification
	Angel law	2011	Tax: Front-end
	-No details provided-		Tax: YIC
	Capital gains tax exception on the sale of securities in Israeli or Israeli-related companies	2009	Tax: Back end
	Minority Fund	2010	Equity: Co-investment
	Bio-Technology Fund	2011	Equity: Fund of funds

ITALY

Organisation responsible	Instrument name	Year Launched	Instrument classification
Chambers of Commerce	New legislation on start-ups (Law no. 221/2012). Articles 26 and 27 bis.	2012	Tax: YIC
-To be defined-	New legislation on start-ups (Law no. 221/2012). Article 29.	2012	Tax: Front-end
	New legislation on start-ups (Law no. 221/2012). Article 27.	2012	Tax: Back-end
SIMEST SpA	Start Up Fund for Internationalization (Law no. 99/2009 - Article 14)	2009	Equity: Direct
Fondo Italiano Investimento (FII)	Italian Investment Fund	2010	Equity: Fund of funds
Ministry of Economic Development	National Fund for Innovation	2009	Equity: Co-Investment

JAPAN

Organisation responsible	Instrument name	Year Launched	Instrument classification
METI	Angel tax	1997	Tax: Front-end

KOREA

Organisation responsible	Instrument name	Year Launched	Instrument classification
Small and Medium Business Administration	Income tax deduction for angel investor		
Korea Venture Investment Corp	Korea Fund of Funds	2005	Equity: Fund of funds-

MEXICO

Organisation responsible	Instrument name	Year Launched	Instrument classification
Nacional Financiera S.N.C	MEXICO VENTURES I, Venture Capital Fund of Funds	2010	Equity: Direct
	MEXICO VENTURES I, Venture Capital Fund of Funds	2010	Equity: Fund of funds
	Co-investment fund Seed Capital SE-NAFIN Startup Mexico	2012	Equity: Co-investment

NETHERLANDS

Organisation responsible	Instrument name	Year Launched	Instrument classification
AgentschapNL	TechnoPartner \ SME+ Seed Capital Scheme	2005	Equity: Co-investment
	BioPartner Start-up Ventures (BPSV)	2000	Equity: Co-investment

NEW ZEALAND

Organisation responsible	Instrument name	Year Launched	Instrument classification
New Zealand Venture Investment Fund Limited	Venture Investment Fund (VIF)	2002	Equity: Fund of funds
	Seed Co-Investment Fund	2005	Equity: Co-investment

NORWAY

Organisation responsible	Instrument name	Year Launched	Instrument classification
Investinor AS	Investinor	2008	Equity: Direct
Ministry of Trade and Industry	Argentum Fondsinvesteringer AS	2001	Equity: Fund of funds
Innovation Norway	Nationwide Seed Capital Scheme (NSCS)	1998	Equity: Co-Invest

POLAND

Organization responsible	Instrument name	Year Launched	Instrument classification
Krajowy Fundusz Kapitałowy SA	Krajowy Fundusz Kapitałowy (KFK)	2005	Equity: Fund of funds

PORTUGAL

Organisation responsible	Instrument name	Year Launched	Instrument classification
Ministry of Finance	Incentivos Fiscais para Business Angels	2010	Tax: Front-end
PME Investimentos	PME investimentos - QREN\FINOVA	2010	Equity: Fund of Funds
	PME investimentos - QREN\FINOVA	2010	Equity: Co-investment
Portugal Ventures	Portugal Ventures	2011	Equity: Co-investment

SLOVAK REPUBLIC

Organisation responsible	Instrument name	Year Launched	Instrument classification
Ministry of Education, Science, Research and Sport	Act. No. 185/2009	2009	Tax: YIC
Ministry of Economy	Act. No. 561/2001	2001	Tax: Front-end
EIF	JEREMIE Holding Fund (SZRF)	2012	Equity: Fund of funds
NADSME	Risk Capital Programme	2004	Equity: Direct
	Fund of Funds	1994	Equity: Fund of funds

SLOVENIA

Organisation responsible	Instrument name	Year Launched	Instrument classification
Slovene Enterprise Fund	Venture capital	2007	Tax: Back-end
Slovene Enterprise Fund (SEF)	Holding fund within SEF	2009	Equity: Fund of funds
	PVCC - Capital investments in private Venture Capital companies	2010	Equity: Co-investment

SWEDEN

Organisation responsible	Instrument name	Year Launched	Instrument classification
Fouriertransform	Fouriertransform	2008	Equity: Direct
Almi	Almi Invest	2009	Equity: Direct
	Almi Invest	2009	Equity: Co-investment
Industrifonden (IF)	Industrifonden	1996	Equity: Direct
	Industrifonden	1996	Equity: Co-investment
AP6	AP6	1996	Equity: Fund of funds

TURKEY

Organisation responsible	Instrument name	Year Launched	Instrument classification
Ministry of Finance	Law on Supporting Research and Development Activities (Law no. 5746)	2008	Tax: YIC
	Corporate Tax Law (Law No:5520) Reduced Corporate Tax (Article 32/A)	2012	Tax: YIC
	Tax laws promoting equity investments including Business Angel Investment Scheme	2003	Tax: Back-end
	Venture Capital Fund	2013	Tax: Front-end
Turkish Treasury	Business Angel Investment Scheme	2013	Tax: Front-end
Government Agencies (IVCI's shareholders) and EIF	Istanbul Venture Capital Initiative (iVCI)	2007	Equity: Fund of funds
Technology Development Foundation of Turkey (TTGV) "Teknoloji Yatirim A.S."	TTGV\ Teknoloji Yatirim A.S.	2007	Equity: Co-investment

UNITED KINGDOM

Organisation responsible	Instrument name	Year Launched	Instrument classification
HMRC	Enterprise Investment Scheme (EIS)	1994	Tax: Front-end
	Seed Enterprise Investment Scheme (SEIS)	2012	Tax: Front-end\Back-end
Capital for Enterprise Ltd (CfEL)	UK Innovation Investment Fund (UKIIF)	2009	Equity: Fund of funds
	Enterprise Capital Funds (ECF)	2005	Equity: Co-investment
	Angel CoFund	2011	Equity: Co-investment

Source: OECD Questionnaire Seed and Early Stage Financing ([DSTI/IND\(2013\)5/ANN](#)) and further research (official websites).

Notes: This Annex contains a list of the seed and early stage financing programmes currently in place and managed at the national level. The following countries provided additional information on regional programmes: Belgium; Canada. The United States does not have tax or equity programmes for seed and early stage financing at the national level. Switzerland does not have tax or equity seed and early stage financing instruments. Spain did not provide information on tax or equity instruments for seed and early stage financing instruments. Iceland and Luxembourg did not complete questionnaires and therefore are not included in the list above. According to further research carried out by the Secretariat, additional tax and equity seed and early stage financing instruments are in place in different OECD Member countries. These were not included on the list.

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