



Introduction to Innovation Policy for Developing Countries

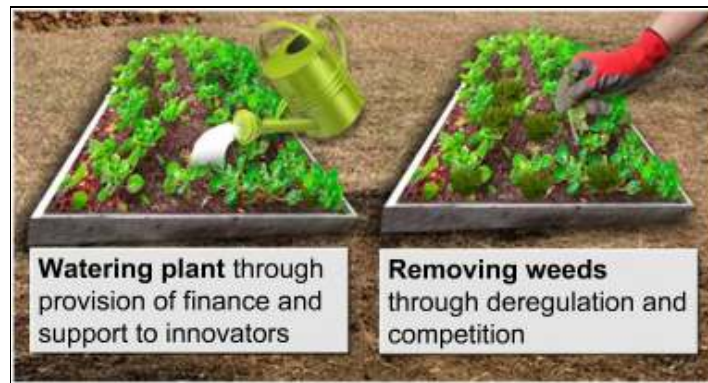
Module 4 - Part 1

Supporting Innovators Through Financing and Regulatory Frameworks



Watering plants and removing weeds

Returning to our metaphor of government as a gardener, we now look at its role in watering plants - through provision of finance and support to innovators, and removing weeds - through deregulation and competition. Removing weeds is one of the most difficult aspects of innovation policy as it requires government to transform itself - to become more effective at delivering public goods and know when and when not to intervene - a tightrope that governments have not always successfully walked. This is a substantial challenge since in some many cases resolution of these questions cannot be divorced from the distribution of political and economic power; however this transformation is crucial to securing a more balanced, innovative and high growth economy.



Course Overview: Module 4 role

Therefore this module will focus on two further pillars of the Innovation System: supporting innovators, deregulation and competition.





Module 4 Topics

We will start this module with the first topic “Access to Finance: Challenges for Innovators”



Access to finance: Financing Cycle for Start-up Firms

Access to finance is one of the most critical challenges facing the innovation system. In absence of a robust financial base, good ideas cannot be exploited or commercialized. Innovative businesses require different kinds of support depending on their stage of development. They prosper if there is a seamless transition from one type of funding to the next.



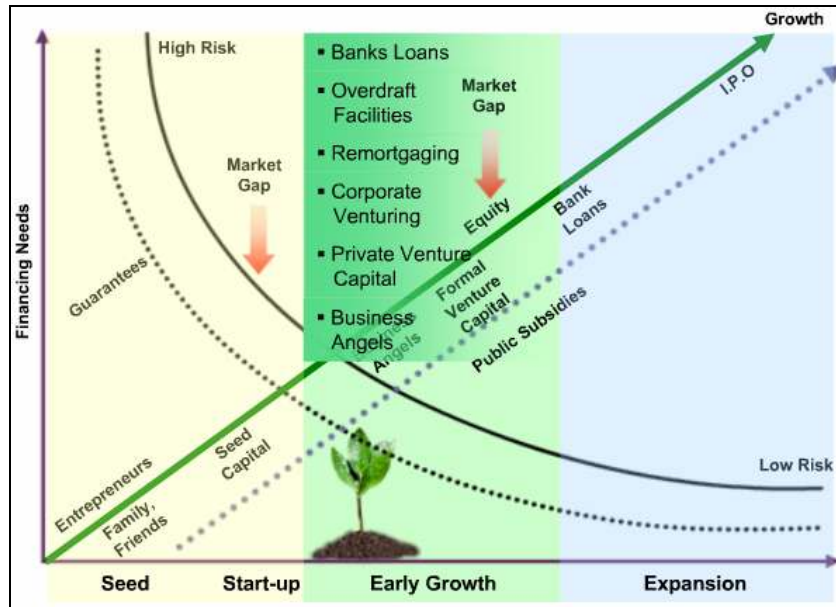


Financing options at this stage include university and research centres spinoff funds, micro credit and soft capital such as grants and tax incentives. Public agencies such as TEKES in Finland and OSEO in France have carved out important roles in this area. For instance, OSEO facilitate access to finance for SMEs by offering guarantees on financing by traditional lending which can range from 40 to 70 per cent; it also provides grants and interest-free loans to innovative firms which are repayable only in case of success; in case of default, the loan is turned into a subsidy. Most significant, many countries have acknowledged the importance of the venture capital industry and implemented various initiatives in support of early-stage venture capital investment.



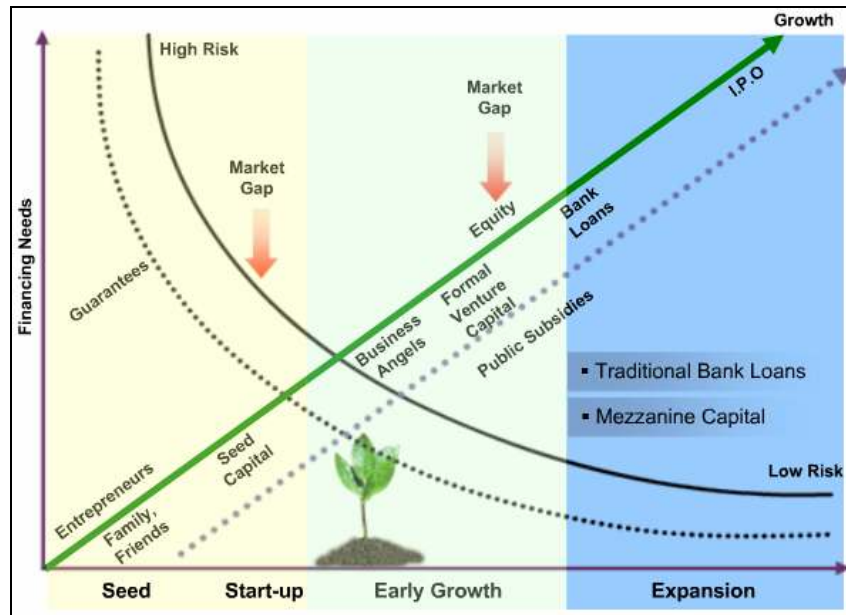
Financing Cycle: Early Growth Phase

A second phase corresponds to the growth of firms and is marked by two features: an increasing reliance on debt finance and greater involvement from the private sector. This can be seen in the type of financing options that are typically available: banks loans and overdraft facilities, remortgaging, corporate venturing, private venture capital and business angels that provide valuable know-how as well as capital.



Financing Cycle: Expansion Phase

A third stage relates to expansion of firms: many of these firms register a profit that can be reinvested but may need additional as they seek to diversify into new markets or introduce new product lines. These firms tend to enjoy the larger range of financing options -from traditional bank loans to mezzanine capital.

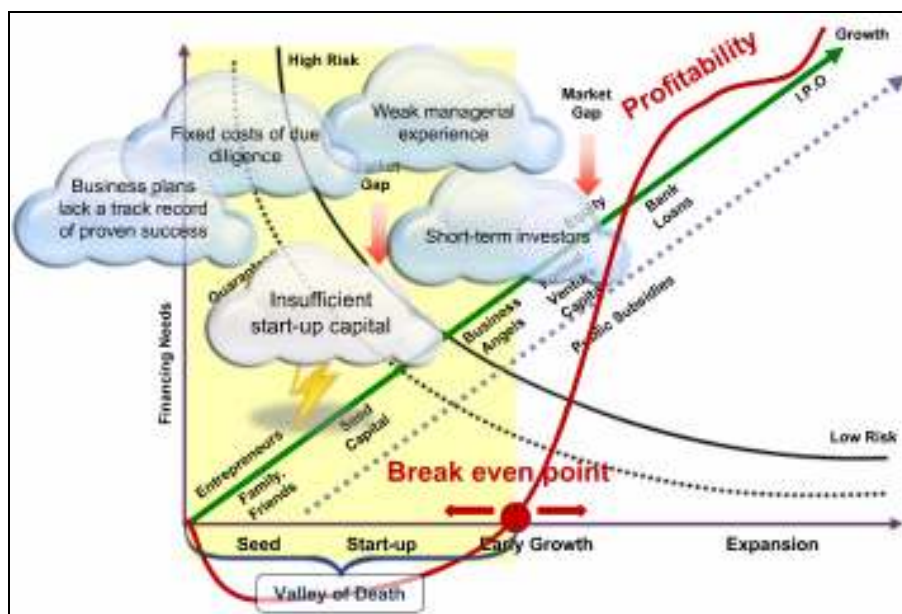




Main Challenge for Innovators: Valley of Death

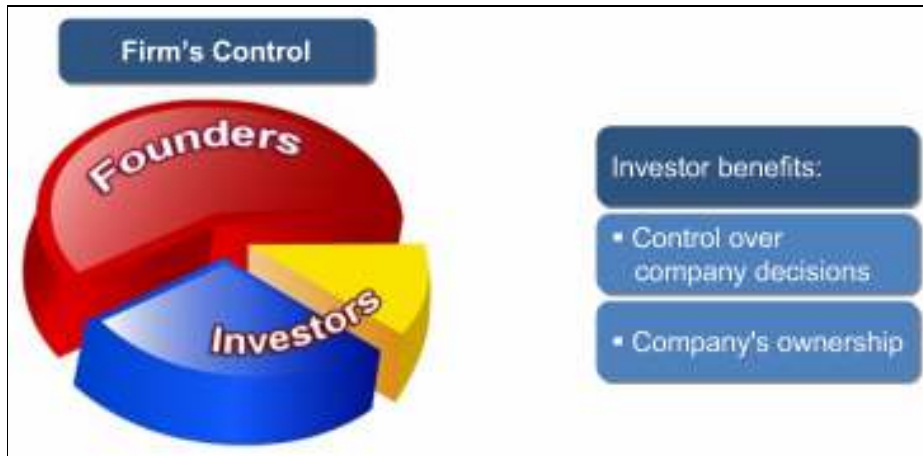
As noted, innovative firms must overcome particular obstacles at the start-up and early development stage. Capital requirements for these businesses can be very high, and returns uncertain and much-delayed, but entrepreneurs may have few assets available for collateral beyond their own idea. Business plans lack a track record of proven success and immediate managerial experience may be limited, both factors that can put off conventional investors. Other investors may be too short-termist - driven by pressures to meet quarterly earnings targets and other requirements; while others may be unwilling to incur the fixed costs of due diligence especially where small investments are involved.

The result can be a critical financing gap - sometimes referred to as the valley of death- which hinders small, innovative firms ability to access the finance they need.



Overcoming the Valley of death: Role of Equity Finance

Equity finance or risk capital provide an ingenious and increasingly common solution to these challenges. To compensate investors for the high risk that they assume by investing in innovative companies, they usually get significant control over company decisions, in addition to a significant portion of the company's ownership. Put differently, the risks for the investor are high, but so are the potential rewards if he or she backs the right venture.



Evidence from the US, where venture activity has a long pedigree, underlines the importance and impact of venture capital on the innovation process.

Notwithstanding the fact that only a small proportion of businesses seek or receive venture capital finance (1-2 per cent by most industry estimates), US companies that received venture capital from 1970 -2006 accounted for 10.4 million jobs and \$2.3 trillion in revenues in 2006.



Venture capital-backed companies outperformed their non-ventured counterparts in job creation and revenue growth. Moreover, high-growth, venture-backed firms were also more likely to spawn new industries, notably personal computers, cellular communications, microcomputer software, biotechnology, and overnight delivery.



Module 4 Topics

And now we'll proceed to our next topic "Role of Public vs. Private Venture Capital"





Role of Public vs. Private Venture Capital

However, it remains that private venture capital funding often focuses on later-stage, mature companies, where buy-out investors can obtain a majority ownership and control of the company. In many parts of the world, the public sector has become considerably more important as an investor in both absolute and relative terms. Government efforts to stimulate the early-stage finance market have a mixed history.



Role of Public Venture Capital: Success Stories and Characteristics

Because of market failures, government has tended to pay some of the bill for venture capital. Success stories –from Silicon Valley to Israel and Singapore– demonstrate the most effective schemes of public investment.





Moreover, they have shared one basic feature: each has only invested in projects or other funds which have been successful in raising matching capital from private investors. In so doing, they have worked with the grain of markets when determining where public subsidies should go. Matching funds also have the advantage of ensuring that managers themselves have some skin in the game and wanting the same outcomes as investors, thereby avoiding “heads I win, tails you lose” outcomes.



Role of Public Venture Capital: Supportive Environment

The government can also take steps to create a supportive environment for venture capital. For instance, early-stage funding may only be forthcoming when investors can see a clear and profitable exit via an initial public offering -or IPO- on the stock market. These linkages between forms of finance increase the possibility of coordination failure between different markets in the absence of efficient legal investment structures and secondary markets. In the US, the NASDAQ exchange which was created in 1971, was critical to catalyzing the emerging venture capital industry there. These are onerous conditions and firms in developing countries can sometimes bypass them by listing on foreign markets.



Role of Public Venture Capital: Flaws

However, failures have also been commonplace, reflecting a number of design and implementation flaws. These include the fact that publicly-backed funds:

- They have pursued several –and sometimes conflicting objectives such as delivering a commercial and social return or promoting regional development. Schemes have also been micro-managed to the extent that they specify the type of securities venture investors can use or the evolution of firms;
- Investments have been too small or parsimonious to attract outside interest, especially as the equity gap for each individual investment today is much higher than in the past;
- At other times, they have been too lavish, thereby weakening the incentives of private investors to monitor the performance of assets;
- Initiatives have been too impatient. However promising, many are not given sufficient time to prove their value and are discarded on the back of partial and often not the most important indicators, such as low interim rates of return of initial participants;
- Tax breaks have been used to attract venture capital investors without proper consideration of why and how tax policy works. Its main effect is on the demand-side, the inducement for entrepreneurs to quit a salaried job and start a firm is not by increasing the amount of venture capital supplied by investors;
- Funds have relied excessively on outside managers: while the use of intermediaries can make sense, experience has shown that they may have divided loyalties or conflicts of interest, working for other clients and charge substantial fees that may also create incentives to do deals for their own sake.



Understanding the Drivers of an effective VC industry

Finally policymakers should be aware of the factors that determine the performance of venture capital. While the importance of a thriving venture capital industry is recognized everywhere, their success is quite variable.



This variation reflects a number of factors:

As we have seen, investors are more willing to back risky ventures if they know they can 'cash in' or move out of potentially unattractive positions at any time. These concerns have led to the development of robust markets for public offerings and, sometimes, specialised markets for small high-tech firms. On the other hand, many markets lack the depth and liquidity to provide real opportunities for exit.



In many cases, entrepreneurs will need to secure several rounds of financing to meet their needs. This kind of “staged financing” has a clear rationale allowing investors to keep entrepreneurs on tight leash and periodically reassess firm prospects; however, where firms are constantly required to go back to the market to secure additional rounds of funding, this will water down the position and returns of early-stage investors while forcing firms to undertake a costly search for vital follow-on funding.





Where follow-up funding does not materialise, firms may have no choice other than to raise money through an IPO; the danger is that if this is done prematurely, investor interest will be limited, further depressing the returns that venture capital funds can realise on the sale. The most successful systems are tend to support firms through the entire funding pipeline. They also tend to make larger investments in individual firms and organize syndicated deals that facilitates the sharing of transactions with other investors.



Understanding the drivers of an effective VC industry

Another feature of countries with successful venture capital markets is that funds are, on average, larger. It is very difficult to predict in advance what will be hits and misses. The median return on a portfolio may be close to zero as most projects fail; but when a fund enjoys a hit, it is likely to be staggeringly big, thereby boosting the average return of fund. Only scale can provide the confidence that a fund will capture the relatively few ideas or projects that generate large returns. By the same logic, small-scale funds are likely to adopt a safety-first attitude to risk and investments.





There is evidence that certain types of investor are better at picking winners than others. One study found that the returns of endowments of universities and not-for-profit foundations were substantially higher than other types of funds. For some, this reflects the contrariness and flexibility of endowments to spot investment opportunities outside the mainstream; for others, it is a reflection of reduced conflicts of interest and/or the more generous compensation characteristic of these funds. Whatever the reason, systems with more of these types of investor may perform better.



Finally, it is worth remembering that venture capital markets are more established in some countries than others. As a consequence, they have a deeper pool of experience and expertise on which participants in the rest of the innovation system can draw. These markets are also more competitive. This encourages firms to shop around for the best deal rather than find themselves forced to accept the first and only offer on the table, no matter how unattractive. One consequence is that entrepreneurs can extract most of the value they create from their innovations—a powerful incentive to starting and growing a business.





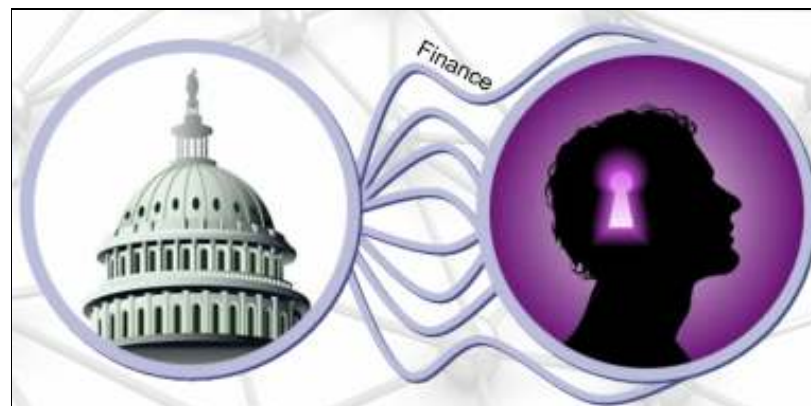
Module 4 Topics

And now we'll proceed to our next topic "Beyond Finance: Public Provision of Specialized Business Services"



Beyond Finance: Public Provision of specialized business services

Finance is not the only support government provides to innovators; linking knowledge and creativity to the market calls upon skills and services that entrepreneurs do not possess. Many can be considered public goods, because they contribute to a country's endowment, encourage learning and generate positive spillovers. They are particularly important in developing countries because the market may not be able to provide the requisite services owing to low demand and other transactional difficulties.





At the same time, the necessary expertise may not be available in the wider environment while the returns on investments in infrastructure may be slow to pay off. However, these services are vital to transferring knowledge to firms and inducing them to improve their productivity and internal organization which can be expected to have a strong impact on the speed and quality of economic development.



Government's Provision of Specialized Business Services

A number of services may be provided to entrepreneurs, including:

Services involve a number of elements:

- Basic investment promotion services seek to attract FDI by identifying suitable inward investment prospects and servicing the needs of foreign-invested firms once they are set up. A good example is Scottish Enterprise or the Piedmont Agency for Investment, Export and Tourism in Italy
- Technology extension services create small but profitable improvements by extending established technology to SMEs. This is done by either enabling firms to identify needs and find appropriate solutions or identifying and providing solutions through targeted assistance. A good example is the Manufacturing Extension Partnership (MEP) in the US or kosehtsushi centers in Japan.
- Standards and metrology provide firms with mechanisms to test and ensure appropriate quality control of their products – these are services are particularly important in the context of accelerated market cycles, new regulatory demands for a 'greener', environmentally sustainable society and the shift towards global markets and participation in global supply chains. A good example is the National Institute of Standards and Technology in the US.



- Productivity centers provide services that are geared more to industrial than to purely technological development. They emphasize the managerial and organizational aspects of firm development and provide a range of training, consultancy and demonstration services to this end. A good example is the Hong Kong Productivity Council or the Instituto para la Productividad Competitiva in Mexico.
- Information and communication services, a classic public good that benefits a wide range potential clients, allow users to access information on technological developments, regulatory regimes, standards and market preferences as well as providing matchmaking platforms where entrepreneurs and investors can initially exchange ideas. A good example is technopreneurship portal in Singapore.
- Export promotion activities help existing and potential exporters find markets for their products as well as provide them with a better understanding of products demanded in different export markets. One study finds that each additional \$1 of export promotion is associated with a \$40 increase in exports for the typical export promotion agency.





In the Next presentation

We shall proceed with the other three topic in the next part of the presentation.

[Click here to launch the second part.](#)

