

## Debt financing

Access to debt financing is a critical issue for innovative businesses. It allows them to finance their growth, meet working capital requirements and invest in innovation. Yet innovative companies often experience difficulties in accessing debt financing due to several factors: they are involved in an innovation process whose outcomes are uncertain, they own assets whose nature may be intangible and difficult to measure. Financing obstacles often undermine the ability of firms to undertake innovative projects. However, data at the country level show that the percentage of enterprises requesting external financing varies considerably across countries. Access to debt financing can be influenced by bankruptcy regulation and business support infrastructure, which may enhance innovative businesses' ability to obtain bank loans. Public policy can help innovative firms access debt financing by guaranteeing credit, subsidising loans, providing credit mediation, supporting alternative debt financing (e.g. convertible loans), and reforming the banking sector to promote competition and reduce concentration.

### What is debt financing?

Debt financing is when a firm raises working capital or investment capital by borrowing. By this act, the firm becomes a debtor to the lender and the lender becomes a creditor of the business. Access to debt financing refers to the ability of firms to obtain any of the following types of debt: overdrafts/credit lines, trade credit, leasing, factoring, bonds and bank loans. While all these categories of debt are economically relevant, policy makers can directly influence only a few of them, primarily bank loans.

- **Overdrafts/credit lines:** this is when banks enable client firms to withdraw from their bank accounts more than they had originally deposited. Credit lines typically have a ceiling and are an expensive source of debt financing because of the high fees banks apply on overdrafts.
- **Trade credit:** when supplier companies enable buyers to pay later for their goods, so that buyers can use part of their sale revenue to pay back the suppliers. It is very common in retailing but less relevant to innovative small enterprises.
- **Leasing:** instead of purchasing equipment, machinery or vehicles, the company leases such material by paying a fee to the owner. Short-term leasing does not change the ownership of the assets, whereas long-term leasing may occasionally result in the lessee becoming owner of the assets at the end of the leasing term. Factoring: when enterprises sell their accounts receivable to a third party (the factor) at a discount rate. Firms thus shift their credit risk to the factoring company but, in turn, receive less than they would have received if they had individually collected their credit. As with overdrafts, factoring is regarded as an expensive source of debt financing and is mostly used to meet working capital requirements when other alternatives have been exhausted.
- **Bonds:** typically issued by companies (and governments) to finance operations and investment. The bondholder, who becomes creditor, receives periodic payments of the bond's interest (i.e. coupons) and the principal on the maturity date. Since most types of bonds need to be tradable, corporate bonds primarily pertain to the sphere of large publicly-owned companies.
- **Bank loans:** the type of debt financing whose amount and access can most be influenced by policy makers. Loans can be secured or unsecured. Secured loans are guaranteed by the existence of collateral, or borrowers' assets, that lenders have the right to seize in case of a loan default (i.e. asset-based lending). Typical collateral assets encompass machinery and equipment, real estate, merchandise, savings accounts, accounts receivable, etc. More

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rarely, when a company is large and has developed a long and trusted relationship with the lending institution, loans can be unsecured, i.e. provided without any material guarantee behind it. The reality for most companies is that they need to provide collateral to obtain a loan. This can become an issue for innovative firms, whose main assets may be intangible.

Bank loans can be further split into long-term and short-term loans; hence, the word “term loans” that is used in some cases. Loans where the repayment of principal is to occur within 12/24 months are generally considered short-term, and are considered long-term above this threshold. Short-term loans are often used to finance operations and working capital requirements. Long-term loans are typically used to fund investment in new premises, equipment and machinery. Innovative firms may also seek long-term loans to invest in R&D or the purchase of intangible assets, such as patents and trademarks.

**What is specific about debt financing when it comes to innovative entrepreneurship?**

Relevant to innovative entrepreneurs are alternative types of loans, such as convertible and subordinated loans. They are both often included in so-called “mezzanine finance”, i.e. a category of financing halfway between debt and equity financing. Convertible loans give lenders the right to convert credit into an equity participation in the company, whereas subordinated loans are junior forms of debt that, in case of insolvency, have lower priority than senior debt (e.g. asset-based lending). They are riskier but pay higher interest rates.

**How does debt financing affect innovative businesses?**

Credit markets are biased by market failures, primarily because of information asymmetries between lenders and borrowers. Firms are better informed about the financial viability of their ventures than the lending institutions expected to provide credit.

In principle, higher interest rates charged to risky borrowers, such as innovative entrepreneurs, could be an answer to information asymmetries. In reality, not only would excessive interest rates attract subprime borrowers and scare off prudent ones (i.e. adverse selection), but they would also provide an incentive for the borrower to undertake risky projects to pay off the loan and minimise the cost of default (i.e. moral hazard) (Stiglitz and Weiss, 1981). The interplay of these market failures warrants the preference of banks for asset-based lending (Evans and Jovanovic, 1989), which, however, tends to generate a gap between the supply and demand of financing in credit markets (i.e. credit rationing). Credit rationing is also compounded by technical factors: first, making loans entails fixed screening and monitoring costs, which makes small-sized loans less appealing to lending institutions; second, the diffusion of lending techniques (e.g. asset-based lending, fixed-asset lending, business credit scoring, etc.) implies that the bank’s decision to lend is increasingly based on the company’s financials and less on the viability of the business proposal.

**What is specific about debt financing with respect to innovative entrepreneurship?**

Credit rationing disproportionately affects SMEs and especially innovative entrepreneurs, who not only lack collateral and a track record like traditional business owners, but are involved in an innovative process whose outcomes are by definition uncertain, deal with a public good (such as knowledge) whose return on investment is not perfectly appropriable, and own assets whose nature may be intangible (e.g. patents and copyrights) (Auerswald, 2007). The business propositions of innovative entrepreneurs are also more likely to be obscure to loan officers, increasing the chances of rejection.

This explains why venture capital is generally regarded as the most appropriate source of funding for innovative enterprises. However, venture capital remains a niche phenomenon that touches a tiny share of entrepreneurs and moves a relatively small share of capital at the global level. It also typically addresses the expansion stage of business, rather than the start-up phase, and is extremely

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sensitive to the economic cycle (OECD, 2010).

This makes access to debt financing relevant not only to traditional entrepreneurship, but also to innovative entrepreneurship. First, access to secured bank loans to meet working capital requirements will free internal resources for longer-term investment. The majority of innovative and high-growth businesses, only a minority of which are strictly high-tech, grow by the use of retained profits and traditional borrowing (Cressey, 2006). Second, leasing will enable innovative small businesses to access expensive inputs to the production process without having to make an upfront payment. While leasing increases liabilities and thus the debt/equity ratio of the enterprise, it will also enable entrepreneurs to make investments that would otherwise hardly be possible in the early phases of business development. Third, unconventional types of debt financing, such as convertible and subordinated loans, will represent an alternative for innovative entrepreneurs who find it difficult to receive secured loans, although the supply of alternative debt financing is still rather limited.

#### **Evidence on the importance of debt financing for the success of innovative entrepreneurship**

Small and young firms are not only more likely to report higher financing obstacles than larger and older enterprises (Beck et al., 2006a), but also to suffer more from these obstacles. Financing barriers have twice the effect on the growth of small businesses than on the growth of large companies (Beck et al., 2006b). Similarly, when looking at a macro-economic level, firms are bigger on average in countries where the ratio of private credit to GDP is larger, and strong financial development within a country exerts a disproportionately positive effect on those industries where the share of small firms is larger (Beck et al., 2004).

An OECD study (2010) has collected evidence on issues and policies affecting high-growth and innovative firms, including business financing. It confirms that only a small portion of innovative and fast-growing small enterprises access external equity to finance investment projects and that debt financing should therefore be a main source of funding for innovative entrepreneurship. Based on evidence from the UK, however (Freel, 2007), the OECD study shows that innovative and faster-growing firms are less successful than traditional and slower-growing firms in obtaining loans. There emerges a “Valley of Death” for innovative young firms, where they are too undeveloped in their early stages to pull in senior venture capital investors, and too risky and lacking in tangible assets to receive traditional bank loans.

Financing obstacles will undermine the ability of SMEs to undertake innovative projects. Evidence from Germany shows that SMEs, especially in Western regions, are financially constrained in their R&D activities due to limited internal resources and poor access to external finance. In the Eastern part of Germany, the high subsidisation of business R&D means that local SMEs are less constrained by external resources. The same study also finds that public support increases by about 60% the probability that the average SME will conduct R&D, whereas this figure drops to 24% in the western regions of Germany (Czarnitzki, 2006).

#### **What is the evidence on debt financing and innovation and firms?**

Debt financing is an important source of financing for companies. Yet, debt financing might be more challenging for innovation investments than for other kinds of financing (see [Finance mismatch](#) [1]). Overall, Hall and Lerner (2009) conclude from a review of empirical research that debt tends to be a disfavored source of finance for R&D investment compared to other sources of finance.

#### **What is the evidence on debt financing and innovative entrepreneurship?**

The 2010 Eurostat business survey on SME access to financing presents interesting findings on the extent to which small enterprises in the EU are successful in obtaining external funding (OECD, 2012a). First, it is noteworthy that more than half of the companies in the survey did not seek any

type of external financing in the two observation periods, i.e. 2007 and 2010, although the share of firms looking for external financing increased between 2007 and 2010, and is expected to increase further in the coming years. Second, given that 2008 was the turning point in the global crisis affecting the EU as well, it is possible to infer that demand for external finance, especially debt finance, will be sensitive to the economic cycle. Second, data at the country level show that the percentage of enterprises requesting external financing varies considerably across countries. In 2010, around 20% of companies in Luxembourg, the Netherlands and Denmark applied for loans, as opposed to 50% in Greece and the Slovak Republic. The percentage of businesses seeking bank loans is not so strongly affected by the average long-term interest rate, as shown by above EU-average interest rates in Greece and the Slovak Republic, and below EU-average interest rates in the Netherlands and Denmark.

Data confirm that innovative small and new enterprises are at a special disadvantage in receiving debt financing compared to traditional businesses. If fast growth is taken as a proxy for innovative activity, the success rate for bank loans in European countries is consistently higher for average enterprises than for enterprises experiencing high-growth. On the other hand, leasing appears equally suitable for enterprises with different growth characteristics and thus holds an important potential for the long-term investments of innovative entrepreneurs.

The prevalence of short-term loans over long-term loans could also be expected to have a detrimental effect on innovative entrepreneurship, to the extent that the former are chiefly used to deal with working capital requirements while the latter typically address investment needs. However, this will also depend on whether other sources of finance, namely equity finance, will be available in the country. Data from the OECD Financing Scoreboard shows that the share of short-term loans out of total SME loans varies greatly across countries and is not sensitive to the economic cycle (OECD, 2012b) (Tab. 1).

**Table 1. Share of short-term SME loans**  
As a percentage of total SME loans

Country	2007	2008	2009	2010
<b>Canada</b>	<b>42</b>	–	<b>43</b>	<b>36</b>
Chile	..	..	..	60
<b>Denmark</b>	<b>65</b>	<b>75</b>	<b>79</b>	<b>65</b>
Finland	21	28	30	26
<b>France</b>	<b>22</b>	<b>21</b>	<b>18</b>	<b>18</b>
Italy	34	32	29	27
<b>Korea</b>	<b>69</b>	<b>68</b>	<b>69</b>	–
The Netherlands	56	55	57	48
<b>Portugal</b>	<b>32</b>	<b>31</b>	<b>33</b>	<b>31</b>
Slovak Republic	51	39	41	..
<b>Slovenia</b>	<b>43</b>	<b>47</b>	<b>43</b>	<b>38</b>
Sweden	14	12	12	..
<b>Switzerland</b>	<b>83</b>	<b>79</b>	<b>77</b>	<b>74</b>
Thailand	43	44	44	58
<b>United States</b>	<b>31</b>	<b>32</b>	<b>27</b>	<b>24</b>

Note: The definition of short-term loans varies across countries. Countries may consider short-term those loans whose maturity is less than 12 months, less than 18 months or still less than 24 months. Above the two years loans are generally considered medium-term, if the country envisages this category, or simply long-term.

Source: OECD (2012), *Entrepreneurship at a Glance 2012*, Paris

## Figure 1. Long-term interest rate on government bond

### What other topics relate to debt financing and innovative businesses?

**Bankruptcy regulation** (see [Bankruptcy regulation](#) [2]). Overly restrictive bankruptcy regulation can restrain access to bank loans for business people who have experienced business failure and render them less willing to seek such funding.

**Business support infrastructure** (see [Business support infrastructure](#) [3]). Participation in public programmes such as business incubators or accelerators, which are generally part of the business support infrastructure, can flag valuable entrepreneurs to the banking sector, thus enhancing their chances of obtaining a bank loan.

**Trajectories of new innovative ventures** (see [Trajectories of new innovative ventures](#) [4]). Access to debt financing critically influences growth and survival for new businesses, thereby affecting the trajectories of innovative new ventures.

### What policies relate to debt financing and innovative businesses?

Most policies in the area of debt financing seek to address market failures affecting credit markets, especially information asymmetries between supply and demand of capital.

- **Government subsidised loans:** Governments can also decide to subsidise loans directly, typically through the intermediation of a national development bank. Subsidised loans are often geared toward specific objectives, such as export promotion (i.e. export credit) or the acquisition of new equipment. As with credit guarantees, the extension and size of government subsidised loans can be adjusted to the economic cycle, provided that government budgets are in order.
- **Banking sector reform:** A reform of the banking sector that promotes competition and reduces concentration holds the potential to fight discrimination in credit markets, especially towards innovative entrepreneurs (OECD, 2013). This will prevent a small number of banks from engaging in discriminating behaviour, while maintaining market share and providing greater choice for borrowers. The support of community banks (e.g. co-operative banks and savings banks) and the opening of the banking sector to foreign-owned institutions will make the banking industry more competitive. With a smaller base of customers, community banks are more suited than large institutions for “relationship lending”, where loan decisions are based on personal knowledge of and a continued relationship with the borrower. Foreign-owned banks, especially in emerging economies, can also strengthen the overall credit flow and boost access to external financing for small businesses (Berger et al., 2004).
- **Alternative debt financing:** Alternative types of debt financing, such as convertible and subordinated loans, can be supported by policy makers through fiscal incentives to lenders and/or the partial coverage of losses in case of bankruptcy/liquidation. The cost of such a policy will depend on its success, which makes it important for it to be combined with business training and coaching to minimise the risks of business failure.

**What policies can specifically support debt financing for innovative entrepreneurs?**

Policy can specifically support innovative entrepreneurship through:

- **Credit guarantees**

Credit guarantees are the most common policy tool to enhance access to debt financing by small firms, including innovative ones (OECD, 2011). By guaranteeing part of the losses caused by the potential default of the borrower, they increase the incentive for banks to engage in SME lending. Generally, credit guarantees see the involvement of three parties: the bank, the borrowing firm and the public authority providing the guarantee. A variant consists in mutual guarantee schemes, where an SME association typically provides a first-level guarantee on the loan of one its members, with the public sector covering an additional share of the loan.

In the design of mutual credit guarantee programmes, the most important operational parameter is the distribution of risk among the involved parties, which has to reach a fair balance. When the level of public guarantees is too high, the problem is that banks do not bear any risk in the related lending activity while still making a profit from SME lending. This can generate moral hazard and adverse selection in the choice of which guaranteed loans to issue. Well-designed credit guarantee programmes should also be conceived so that reliable borrowers are progressively phased out of the scheme. Reliable borrowers should be expected to receive bank loans through traditional channels.

A positive element of credit guarantees is that their size and volume can be easily adapted to the economic context. During economic slowdowns these schemes can be ramped up with regard to: i) the total amount of guaranteed funds; ii) the percentage and size of guaranteed loans; iii) and the number of eligible enterprises (OECD, 2012b).

- **Credit mediation**

Credit mediation occurs when governments appoint mediators to help SMEs deal with loan rejections (OECD, 2010b). Through discussion, exchanging information, assistance in improving business plans and other techniques, credit mediators bridge the information gap between entrepreneurs and loan officers. This policy tool has been recently tested in France, Italy and Belgium.

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