



Start-up promotion instruments in OECD countries and their application in developing countries

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List of Acronyms

BAND	Business Angels Netzwerk Deutschland
BMWi	Bundesministerium für Wirtschaft und Technologie (Federal Ministry of Economics and Technology)
GDP	Gross Domestic Product
HPSU	High-potential Start-up
IHK	Industrie- und Handelskammer (Chamber of Industry and Commerce)
JEREMIE	Joint European Resources for Micro to Medium Enterprises
LIC	Low-income Country
MIC	Middle-income Country
NTBF	New Technology-based Firm
OECD	Organisation for Economic Cooperation and Development
SME	Small and Medium-sized Enterprise
VC	Venture Capital

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Summary

This study, conducted by the GIZ sector project “Innovative Approaches for Private Sector Development” on behalf of the German Ministry for Economic Cooperation and Development (BMZ), provides an overview of instruments for start-up promotion that are currently available and in use in OECD countries. It includes a brief description of 17 different types of start-up promotion instruments, and it discusses critical success factors for each of those instruments. In addition, the examples of five countries are used to obtain more detailed insights into the operation of start-up promotion instruments. The study focuses on start-up promotion used as a public policy for economic development, with the aim of upgrading economic activities and changing sector structures to encourage more productive and knowledge-intensive ventures. Consequently, the key target groups of the measures discussed in the report include innovative start-ups and start-ups that exploit new business opportunities. The study does not look at start-up promotion as an aspect of labour market policy or regional policy.

A key objective of the report is to assess how start-up promotion instruments currently used in OECD countries can be applied in developing countries. For each instrument type examined, the basic requirements and features are discussed, as are its possible adaptations and its appropriateness for use in low-income countries (LICs) and middle-income countries (MICs).

At the conceptual level, the report argues that start-up promotion in developing countries should not concentrate on trying to increase entrepreneurial activity in general, since the propensity to engage in new businesses already tends to be high in these countries, and additional policy incentives may have little effect. Start-up promotion should instead focus on new businesses that contribute to structural change and open up growth perspectives. To this end, it is useful to link start-up promotion with

policies that encourage innovation. Based on this strategic approach, most of the measures used in developed countries could be applied quite directly in developing countries, assuming only that a few necessary general conditions are met to ensure proper implementation of the measures.

In low-income countries, priority should be given to programmes that provide training and financing for few, but more innovative, opportunity-driven start-ups, rather than to measures that target a larger number of copy-cat, necessity-driven new businesses. At the same time, important policy initiatives might include programmes that stimulate creativity and the generation of new business ideas. In middle-income countries, start-up promotion should be closely linked to, or even integrated with policies that support innovation and technology. In these countries, start-ups developing from public research institutions and universities may be a priority target group.

1 Introduction

Business start-ups can have a positive influence on a country's development. This potential unfolds when start-ups translate a new business idea into sustainable jobs and sales. Start-ups can also contribute to a country's competitiveness if they introduce new products or services. Ever since Birch (1979) established that the majority of new jobs are created in small and medium-sized enterprises (SMEs), policy makers in developed countries have focused much of their interest on promoting start-ups. This interest has been further fuelled by the 'silicon valley experience' – the observation in the USA that a high level of start-up activity goes hand in hand with economic progress. As a result, developed countries have established a range of programmes to support start-ups and SMEs.

Clearly, the potential benefits of start-ups are not limited to developed countries, as new businesses can also contribute to the progress of emerging and developing economies. Promoting start-ups is therefore an important approach in the field of development cooperation. As such, German development cooperation is already promoting the creation of new companies in emerging and developing countries, in order to stimulate economic growth, increase employment and incomes, and ultimately to reduce poverty. OECD countries have extensive experience of running entrepreneurship and start-up promotion programmes, and they use a large range of tools that draw on their economic, innovation and technology policies. The objective of this study is therefore to provide an overview of contemporary start-up promotion instruments in OECD countries, and to analyse their relevance in developing countries. Since developing countries are a very heterogeneous group, the report will discuss how start-up promotion can be designed differently in low-income countries (LICs) and in middle-income countries (MICs).

The study builds on an earlier report by Eckardt (2003), but has a somewhat different focus. Whereas Eckardt's work focuses on the details of some selected instruments (start-up centres, business plan competition, and academic start-ups), this study provides a broad overview of the instruments available for start-up promotion. It also discusses how the respective instruments can be modified to fit better within the field of development cooperation, and it presents some examples of programmes which have been implemented recently in OECD countries. Although public instruments to promote start-ups can address quite different policy areas, including labour market and regional policies, this study focuses on start-up promotion in the field of economic policy. The primary objective of interventions in this area is to increase the number of start-ups in order to stimulate competitiveness, growth and sectoral change.

Among other things, Eckardt concludes that when trying to promote start-ups, it is important to understand what types of start-ups are being targeted. Start-ups based on new technologies or other innovations have a larger impact on growth and economic development than start-ups in more typical areas. This report therefore focuses on policies targeting start-ups which exploit new business opportunities and are growth-oriented (i.e. they are likely, in the medium term at least, to employ more people than just the founders). Policies that aim to encourage start-ups among the unemployed will largely be ignored.

2 Taxonomy of start-ups and the rationale for public support

This report uses a number of concepts and definitions that are briefly introduced and explored in this chapter.

Taxonomy of start-ups

Many emerging and developing countries already have high rates of business start-ups and self-employment. Nevertheless, the standard of living in many of these countries remains low. One explanation for this is that there is a wide variety in the different kinds of start-up, and only some of them have a positive effect on development. When creating a policy to promote new businesses, it is first essential to classify the different types of start-up. In this report we will use four types: (1) new technology-based firms (NTBFs), (2) opportunity-based start-ups by employees, (3) copycat start-ups, and (4) start-ups to escape unemployment (entrepreneurs out of necessity).

- As the name suggests, NTBFs are new firms with business ideas based on new technologies – i.e. new procedures for producing goods and services. Prominent examples of this type of firm are those founded around 2000, such as Google, Ebay and Amazon, whose businesses are based on Internet technology. NTBFs often arise in the environment of universities and research labs, and are characterised by high knowledge intensity.
- Opportunity-based start-ups are new firms launched by people who want to exploit a market opportunity. Many of these start-up founders are former employees who identified new business ideas but were unable to exploit them fully with their previous employers. An example of this type of start-up is SAP AG, whose founders identified a gap in the market for data processing and developed a software that enables businesses

to perform accounting processes internally on mainframe computers.

- Copycat start-ups are primarily motivated by a desire to be self-employed, and involve mimicking the business ideas of existing firms. They are typically not based on any new technology, and they do not try to exploit a market opportunity. Instead, they are formed to serve their founders' desire not to work for others. Copycat start-ups are often found in sectors where the costs of starting a business are very low, e.g. trading, restaurants and other consumer-oriented services.¹
- Start-ups driven by unemployment and other forms of necessity are usually established as a way of generating income for the entrepreneur. Their founders are often unable to find paid work, and therefore start-up businesses to earn a living. They are often called 'necessity start-ups' because they are a response to the lack of other opportunities. Businesses that are formed as an escape from unemployment are usually established in sectors with low entry barriers and low qualification requirements.

NTBFs and opportunity-based start-ups are the type of new firms that are most likely to generate a large number of jobs and to grow quickly. However, since these make up only a small proportion of all start-ups, their aggregated contribution to employment is limited. There are no statistics available with which to obtain a breakdown of start-ups according to the four types listed above. However, we can get an idea of their relative importance in OECD countries by examining the number of start-ups occurring in the high-tech industries and knowledge intensive

¹ 'Copycat start-up' is not an established term in the literature. We use it to describe the type of start-ups that do not involve any new activities, but which imitate what others are already doing.

service sectors, because in developed countries most NTBFs and opportunity-based start-ups tend to be in these sectors. In Germany these two sectors account for 0.9 and 12 per cent respectively of all start-ups each year. In other developed countries, the share of these sectors in total start-up activity is similar (Müller et al., 2011). The businesses launched in these sectors tend to be significantly larger (with four or five employees, including the founders, in the high-tech industries, compared to two employees in other sectors) and they also grow faster (due both to a lower exit rate and stronger growth in the number of employees in firms that survive). Nevertheless, their contribution to overall employment is still limited. Rammer and Metzger (2010) showed that the number of jobs created by a cohort of start-ups five years after their formation was about 537,000 in Germany (cohorts 1997-2003), but that only three per cent of those jobs were in the high-tech sector, and 14 % in knowledge-intensive services. The majority of start-ups – and thus the majority of new jobs created through start-ups – arise in lower technology sectors with low knowledge intensity. In these sectors, most new businesses are copycat and necessity-driven start-ups.

The situation may be somewhat different in developing countries. As markets tend to be less developed in these countries, particularly in terms of the supply of sophisticated services and domestically produced advanced products, they may offer more space for opportunity-based start-ups offering those kinds of products and services. This is particularly true for LICs, but less so for MICs. Despite this, existing studies show that in developing countries, NTBFs and opportunity-based start-ups still tend only to make up a small share of all start-ups, while the majority are copycat and necessity-driven start-ups (Acs 2006). As Acs and Varga (2005) show, firms that are formed out of necessity have no effect on technological development and therefore have no effect on economic growth, whereas start-ups that exploit a business opportunity contribute positively to economic growth. Thus, emerging and developing countries have low income levels despite also having high rates of self-employment, because most of the

enterprises involved are the ,wrong' type of businesses.

The main focus of this study is on instruments for promoting NTBFs and opportunity-based start-ups. However, it does not ignore activities that are aimed primarily at the other two groups of start-up.

Stages in the establishment of a new business

Starting a new business and establishing it in the market is a process that can take a long time. For the purpose of this study, we divide the process into four stages, each of which has its own specific challenges:

- The *idea stage*: entrepreneurs identify opportunities for a business and decide to engage in entrepreneurial activity.
- The *seed stage*: entrepreneurs assess the market in terms of competition, demand levels, potential substitutes, the prices of inputs and the willingness of potential customers to pay; they develop a business model and identify the key assets needed to run the business (e.g. human capital, technology, location and marketing strategy). This stage may also include the research activities needed for the development of the products the firm wants to produce.
- The *start-up stage*: establishment of the business, including the official set up of the enterprise, hiring of employees, renting of office or production space, and procurement of equipment. The need for financing is particularly high during this phase.
- The *expansion stage*: the period following the successful launch of a product on the market: if the market responds positively, the volume of production is increased to an optimal scale.

As with any other policy tool, start-up promotion cannot simply be justified per se. If the activities of private sector agents result in the optimum number and composition of start-ups for the whole econo-

my, there is no need for policy interventions. Clearly, it is not an easy task to determine whether there are too few or too many start-ups, or what the optimal mix of the different start-up types would be. Furthermore, the question is still open as to whether or not start-ups should be promoted at all. In general, it is assumed that there are too few start-ups in developed countries, while in developing countries the problem is not so much a lack of start-ups, but the disproportionately high number of necessity-based entrepreneurs compared to opportunity-based start-ups and NTBFs.

Those in favour of intervention to promote start-ups argue that some kinds of start-up are beneficial for an economy, but that at the same time there are market failures that hamper decision making and the process of establishing new businesses. Two possible reasons given for this market failure are known as asymmetric information and external effects.

- *Asymmetric information* is a situation in which one side of the market knows more than the other. This has consequences for financial markets in particular. Providers of capital know less about the prospects and risks of investment projects, or about the capacities of the borrowers, than do the borrowers themselves. In extreme cases this can cause the complete breakdown of the market. Less dramatically, it can often mean that borrowers receive less money than they require. Business start-ups are often especially vulnerable to the consequences of asymmetric information, because they lack the kind of financial history which banks use to infer the pay back behaviour and the business capacities of the entrepreneur. Innovative start-ups face the additional problem that it is difficult to assess the viability of the business ideas or the prospects of the markets. A problem related to that of asymmetric information, is that banks and other potential investors often decline to get involved, when the relatively small amount of capital requested by a new business is out of proportion with the efforts that the investors must make to screen and evaluate a start-up project.

- *Externalities* arise when the actions of one agent have (positive or negative) effects on the utility of other agents. The existence of externalities can cause discrepancies between the way entrepreneurs themselves value their entrepreneurial activities, and how they are valued by the general public. Audretsch (2005) legitimates public intervention only on the grounds of externalities. He distinguishes three types of externality: network effects, knowledge spillovers or learning effects. Network effects occur when the value of the activities of an entrepreneur depends on the presence of other firms or individuals located nearby. Knowledge externalities arise from the fact that, in many cases, new firms must reveal information about their product or service when entering the market. Even if new firms fail they might provide value for society by disclosing their knowledge. Finally, learning – or demonstration – effects occur when individuals see that founding a firm can be a viable employment opportunity. Such externalities can result in a suboptimal level of (knowledge-intensive) firm foundation. These considerations together constitute the rationale for public support of start-ups.

3 Aims, strategies and instruments of a start-up promotion

This chapter presents an overview of the aims, strategies and instruments of start-up promotion in developed countries today. It serves as a reference point for the discussion of how start-up promotion instruments can be applied in developing countries, and how they can be integrated in the activities of the German development cooperation organisations.

3.1 Aims and strategies

To understand the set of activities now in place in OECD countries to promote start-ups, we need to be aware of the various different aims and strategies involved in this policy field.

- **Creation of new jobs and the reduction of unemployment:** As noted earlier, since Birch (1979) discovered that most new jobs are generated by SMEs rather than by large firms, greater attention has been given to the promotion of the smaller form of enterprise. This also includes new companies, as start-ups generally begin as small-scale businesses. The question of how to create jobs became an important political topic in the 1970s, when the problem of rising unemployment was especially urgent. The topic has never disappeared from the political agenda since then, because OECD countries still suffer from high levels of unemployment. In 1994, the OECD identified rigid markets for products and labour as the cause of high unemployment (OECD, 1994). One of the recommendations made to OECD governments to solve this problem and create jobs was to foster entrepreneurship. While entrepreneurship does not directly equate to the creation of start-ups, following that recommendation has nevertheless resulted in

the formation of new firms.² The recommendation has been repeated several times (e.g. OECD, 1998), and it has also been suggested as a way of overcoming the rise in unemployment caused by the 2008 financial crisis (OECD, 2010).

There are two senses in which fostering start-ups can create jobs and reduce unemployment.

- Firstly, the new businesses are seen as innovators, exploring new markets and paving the way for the jobs of the future. The models for this are the firms of Silicon Valley: Google, Amazon, and suchlike. These have taken advantage of the Internet and contributed considerably to employment growth since they were founded. Other examples are start-ups in the fields of biotechnology and renewable energies. Firms like these are seen as the employers of tomorrow, providing jobs for workers released by firms in more traditional sectors.
- In a second sense, encouraging start-ups can be seen as encouraging unemployed people – especially the long-term unemployed – to take up self-employed occupations, thereby reducing the overall level of unemployment.
- **Increased competition:** The idea behind this goal is that increased competition improves people's welfare. The more competitors there are in a market, the greater will be the pressure on prices, which in turn encourages firms to produce as efficiently as possible. Promoting start-ups is therefore seen as a means of in-

² Entrepreneurship is not a clearly defined term, but has a range of meanings, from the incurring of risks to the introduction of innovative products or services. (For the different definitions see e.g. Iversen et al. 2005.) This means that many people besides company founders can be called entrepreneurs. Nevertheless, the most common association with entrepreneurship is the start-up of new firms, or more precisely, new innovative firms.

creasing the efficiency of a market. Raising the number of competitors forces existing players to reduce their costs or even to leave the market. The latter usually happens when start-ups enter the market using new production technologies that require fewer inputs than those of the less efficient firms in the industry.

- **Enhanced innovation and new technology:** Start-ups are new participants in the market. They are often associated with the introduction of new products and services (product innovation) or improved means of production (process innovation), because innovation is considered a necessary condition for survival in the market. Whether this is true or not, start-ups are always a way of commercialising new ideas or new technologies. Especially interesting in this context are spin-off firms whose businesses are based on new ideas or research developed at the former employers of the start-up founders, or through university research. Such firms make use of knowledge which otherwise would have remained economically unexploited. The idea of starting one's own firm may also provide an incentive for university researchers or the employees of established firms to become inventive. In this respect, the promotion of start-ups may foster innovation and the development of new technologies.
- **Accelerated structural change in the economy:** Closely linked to the aim of fostering innovation and the introduction of new technologies is the promotion of structural change through start-ups. Start-ups are seen as agents of change (OECD 1998, 2010) and their formation is often synonymous used with entrepreneurship in the sense of 'creative destruction' (Schumpeter 1934). This is because entrepreneurs combine factors of production in new ways, thereby making previous products and methods of production obsolete. This can lead to continuous adaptation and an evolutionary development of the economy.

- **Local economic development:** Start-ups are also promoted as a way of eliminating regional economic disadvantages. People from economically unattractive regions often migrate to more appealing places, taking other resources with them. Moreover, it is often the more valuable resources, such as better qualified personnel, that leave the disadvantaged regions. Such migration can result in the dereliction of whole areas. With the establishment of new firms, capital is tied up and new value can be created which encourages people to stay in their home regions.

A variety of different strategies are used to promote start-ups, which correspond to the different aims described above:

- promoting entrepreneurship (i.e. the propensity of individuals to take risks)
- disseminating the skills needed for entrepreneurship
- tackling market failures (particularly in the financial market)
- overcoming the liability of newness faced by start-ups, compared to established firms (i.e. the disadvantages resulting from their newness, lack of history and small size).

3.2 Types of start-up promotion instruments

Most OECD countries use a mix of instruments for promoting start-ups, drawn from those listed below.

Financial aid

- Direct financial support, e.g. grants to entrepreneurs during the idea, seed and start-up stages, and grants for the development of products

- Loans and guarantees, including loans from public banks and guarantee schemes to encourage private banks to make loans to start-ups
- Provision of venture capital, either through public investors or as indirect support to private investors, by refinancing parts of private investment with public funding or by offering guarantee schemes
- Tax rebates for new businesses, such as corporate tax windows, lower rates of value-added tax, or lower rates of social security contributions

Consulting and infrastructure

- Legal and management advice, offered free of charge or through low-cost consulting services for entrepreneurs
- Infrastructure, such as start-up centres offering cheap space and services for new businesses
- Marketing support for start-ups, including trade fair presentations to develop new business and financial support for entry into foreign markets
- Support for 'business angel networks', where contact can be made to business angels who invest in, and co-manage start-ups

Building role models

- Awards for successful start-ups and business plan competitions which should stimulate others to follow suit
- Activities – particularly advertising campaigns – to raise public awareness of entrepreneurship

Education

- Activities in universities to improve the conditions for graduates to found businesses, including teaching programmes, awareness measures and coaching
- Training programmes that impart entrepreneurship skills, often as part of the curricula

and activities of schools, universities and other education organisations

Table 1 gives an overview of some of the start-up promotion instruments widely used in OECD countries. For each instrument, it lists the main objectives, the typical mode of delivery and associated costs, the underlying rationale, the type of start-up addressed and the stage at which the intervention occurs, the monitoring approach and the key success factors. All these instruments are applied regularly in OECD countries. After the governments of the developed countries had understood that their main competitive advantage lies in exploiting their countries' knowledge, they began to pay much greater attention to instruments that target innovative start-ups (start-up centres, start-up activities in universities, venture capital provision, etc.). Below is a brief description of these instruments and their key characteristics.

Direct financial support: Direct financial support covers all types of start-up grant aimed at individuals who are planning to enter self-employment or whose businesses are in the first period of operation. As with all grants, such support does not need to be repaid. The amount provided can vary substantially, though many programmes offer grants of between EUR 10,000 and 50,000. Some grant programmes, particularly those aiming to help the unemployed, focus on individual entrepreneurs as a target group, rather than enterprises (as legal entities). The money often helps to cover the cost of living for the entrepreneur during the early stages of a start-up, when income generated by the business is still low. Sometimes grants cover the cost of developing new products. For most programmes entrepreneurs have to present their business idea when they apply for the grant. The applications are evaluated by experts who rate the capacity of the entrepreneurs and viability of the business ideas.

Loans: Start-up loans are bank credits provided to the founder of a business following a credit check, which must be paid back later with interest. The conditions attached to such loans are less strict than

those for private bank credits. Start-up loans may incur lower interest rates, include a grace period for repayment, or require less collateral. They may also be made as subordinated loans. In cases of insolvency, these loans do not have to be repaid until the claims of all other creditors have been met. This makes it easier for a young firm to obtain external financing, as creditors need have less fear about being repaid.

Guarantees: Guarantees are typically provided by a public programme to help start-ups (borrowers) secure loans from private banks or other investors, if they do not have enough collateral to provide their own security. Should the borrower fail to repay the credit, the guarantor has to step in. Guarantees are often given by so-called guarantee banks, which are specialised in helping firms to raise credit. These banks are usually privately organised but publicly supported. The provision of guarantees is not restricted to the founders of new firms, but it is clearly an instrument that can also be used by people forming start-ups. However, guarantees can be rather expensive, particularly if the private investors select bad risks for investments that must be guaranteed. In addition to the credit cost, a fee has to be paid for the provision of the guarantee. Guarantees can also be given directly to individuals as well as to private equity companies.

Venture capital: Venture capital (VC) is equity provided for very risky start-up projects that require substantial funding, including development and marketing costs for new products. In exchange for the money they invest, VC funds become co-owners of the firms in question, and therefore have a say in its strategic decisions. Alongside the financial support, VC funds may also provide advice to the managers of the start-ups. This form of capital is especially important for start-ups that are trying to introduce a new technology for which it is unclear in advance if there is indeed a market. Normally, such start-ups would not get financing from banks as they pose a non-bankable risk (high uncertainty of market prospects, lack of collateral). Typically, VC investments face a high failure rate. Nevertheless, a few investments will generate extraordinarily high

profits which compensate for the losses elsewhere. VC funds usually make their profit by selling their stakes in companies, either at the initial public offering on a stock market, or through trade sales to other investors or companies.

VC is provided by both private and public VC funds, and it targets different stages of firms' development, from the seed stage onward. Many private equity companies tend to focus on the later stages (from expansion onwards) to reduce their risk exposure, which means there is often a shortage of VC for the seed and start-up stages. To compensate for this, the publicly owned VC funds usually offer seed and start-up funding. At the same time, some public funds also focus on specific sectors regarded as particularly important in policy terms (e.g. biotechnology or nanotechnology), while others specialise in supporting start-ups based on public scientific research. Apart from their different focus, public VC funds work in the same way as private funds.

Tax incentives: Tax incentives and rebates can apply at three levels: the entrepreneur, the enterprise (as a legal entity), and the investor in start-ups. Tax incentives come in many different forms, depending on the system of taxation and the mandatory contributions. Tax incentives aimed at the entrepreneur might include a reduction in income tax payments (e.g. through higher allowances) or the lowering of their social security contributions. Incentives at the enterprise level include corporate tax holidays for the first years of market presence, or privileged depreciation regulations. Sometimes, start-ups only have to pay lower rates of value-added tax, or their employees might be exempted from some social security contributions. Tax incentives for investors may include the exemption from tax of a certain portion of the returns they earn from investments in start-ups, or the privileged offsetting of losses incurred through their start-up investments (e.g. longer carry-forward periods).

Legal and management advice: Legal and management advice is provided at all stages of establishing a business. This type of measure assumes that entre-

preneurs often lack critical management skills, and that this may lower the success rate of their entrepreneurial activity. Advisory services typically cover information on legal issues (legal forms of enterprises, contracts, labour law etc.), basic information about entrepreneurship and management, and practical advice, such as how to register a firm, how to write a business plan, where to get public support, how to get a business financed, and where to find potential business partners. This kind of advice for start-up founders is provided in different ways, such as via public services available on the internet, or in brochures printed by a ministry. Some organisations and agencies, such as chambers of commerce or local authorities, offer individual consulting services free-of-charge, or they host seminars on different topics related to the start-up process. There are also grant programmes that pay for coaching or consulting services for (potential) entrepreneurs.

Infrastructure: The provision of infrastructure includes such things as office space, telecommunication services, technical equipment and office services, which may be provided free of charge or at below-market rates. The infrastructure is usually made available in specialised incubators or start-up centres funded with public money. Start-up centres are buildings in which new businesses can set up their premises. Most such centres are open to start-ups in all lines of business. Some also specialise in particular industries that are seen as businesses of the future, such as nanotechnology, biotechnology, creative industries or environmental technology. It is hoped that by encouraging several firms to settle in one place, they will also share their knowledge and knowledge spill-overs will take place. If the start-up founders working at a centre meet in the corridors or at the water cooler, they might talk about their businesses and stimulate new ideas. Start-up centres can also facilitate marketing as they often build up a reputation and attract the attention of potential customers.

Marketing support: Finding customers is perhaps one of the most challenging tasks for a young firm. Potential customers are unaware of what the new

firm has to offer, or are distrustful of a firm that has no track record. This is called the liability of newness. At the same time, investments in marketing to build a reputation and reach customers can be prohibitively expensive for small, young companies. Public support for the marketing efforts of start-ups often includes the organisation of trade fairs where new firms can present their products, or the provision of grants to enable them to participate in existing trade fairs. Attending trade fairs can help new firms to introduce their products to customers, and if the founders participate regularly they can build up their reputation (Brockmann and Staak, 2011). Other instruments focus on helping start-ups gain access to foreign markets by providing grants for their participation in trade fairs abroad, or by offering targeted consulting services.

Business angel networks: Business angels are individuals who invest private money into start-ups. Similar to VC funds, they provide equity and management advice. Typically, business angels are experienced entrepreneurs or executive employees of established firms. They tend to invest during the early stages of a start-up, in contrast to venture capital funds, which prefer the later stages. Business angels are often organised in networks, which serve as match-makers between the start-ups and the investors. Start-ups contact the networks by sending a business plan and the networks then try to find an appropriate angel. Governments support these networks in order to sustain and improve their match-making services.

Awards and business plan competitions: Awards and business plan competitions are used to increase awareness of entrepreneurship among the general population and to create a positive entrepreneurial climate. Awards are typically presented to existing, successful start-ups, whereas business plan competitions mainly target entrepreneurs during the idea and seed stages. The usual procedure is that the award or competition is announced, start-ups then submit their applications or they are nominated by experts, and a jury selects the most promising entrants. Finally the prize is awarded at a public event.

Awards and prizes usually consist of money or non-financial support, such as individualised coaching, business training, access to networks of managers of established firms, or mentoring by an experienced manager.

Public awareness of entrepreneurship: In addition to awards and business plan competitions, from time to time governments run public campaigns to promote the idea of entrepreneurship. These campaigns are intended to raise people's awareness of entrepreneurial activities as an option for earning a living and exploiting business ideas. Campaigns can take a variety of forms, ranging from advertising to TV shows.

University programmes supporting entrepreneurship and start-ups: Universities are an important source of future entrepreneurs. A significant proportion of the population attends higher education, and there is great potential that the skills universities impart and the research results they produce can provide a base for new ventures. Various measures can be undertaken to increasing the propensity of graduates to start their own businesses. These include the teaching of entrepreneurial skills, the

creation of entrepreneurship professorships as well as university incubators and science parks, financial support schemes (often linked to earlier research grants), and virtual start-up projects that demonstrate to students the opportunities and challenges of running a business. In some countries, integrated programmes are offered that link together different instruments in an effort to establish 'entrepreneurial universities', for which entrepreneurs are one of the main outputs.

Entrepreneurship training: Entrepreneurship training takes several forms, ranging from short seminars for the teaching of (basic) business knowledge, to half-year study courses; it can include business games at schools and universities, or it might be an intrinsic part of the curricula at secondary schools and universities. Increasingly, chairs for entrepreneurship are being set up at universities to facilitate entrepreneurship education. The goals of entrepreneurship training are, on the one hand, to reduce gaps in business-related knowledge and, on the other, to increase the general awareness of entrepreneurship. Students should come to see entrepreneurship as an alternative to salaried employment, and they should learn to think and act entrepreneurially.

Table 1: Overview of start-up promotion instruments in OECD countries

No.	Type of instrument	Main objective(s)	Typical mode of delivery	Typical costs per start-up (EUR)	Underlying rationale
Financial aid					
1	Start-up grants	Creating new jobs, reducing unemployment	Grant-in-aid based on applications, selection of applications by programme management	10,000 to 50,000	Compensation for a lack of internal resources and a lack of external funding
2	Start-up loans (delivered directly by public bank)	Creating new job opportunities	Loan based on applications, selection of applications by public bank	50,000 to 250,000	Compensation for a lack of external funding
3	Start-up loans (delivered indirectly via private banks)	Creating new job opportunities	Private banks apply for refinancing of start-up loans through public bank	50,000 to 250,000	Compensation for higher risk of start-up loans (= higher interest rates)
4	Venture capital investment	Fostering innovation and new technology, accelerating structural change	Public VC funds invest in start-ups (purchasing company shares, mezzanine capital)	100,000 to 2,000,000	Compensation for lack of private VC investment due to extremely high risk
5	Refinancing/ guarantees for private investment in start-ups (loans, VC)	Creating new job opportunities	Private investors (banks VC funds) apply for public bank guarantees for their investment in start-ups	50,000 to 500,000	Compensation for higher risk of investment in start-ups (= higher interest rates)
6	Reduction of taxes/social security contribution for start-ups	Creating new job opportunities, increasing competition	Variety of measures: lower corporate taxes in first years of business, lower/no social security contributions for entrepreneur and first employee(s)	0 to 100,000	Compensation for individuals' low propensity to take risks

Types of start-up addressed	Start-up stage addressed	Example from Germany	Monitoring approach	Key success factors
Opportunity-based start-ups; copycat start-ups, necessity start-ups	Idea and seed	EXIST-Gründerstipendium	Report by the founder on enterprise success, 1 or 2 years after start-up	Select applicants who will be fit to run an enterprise, ensure detailed market knowledge among the programme management
Opportunity-based start-ups	Seed and start-up	ego.-Plus (Sachsen-Anhalt)	Public bank through standard contacts to borrower	Balance between risk taking (= lack of collateral) and focus on start-up projects with high prospects, select a large and diversified portfolio
Opportunity-based start-ups	Seed and start-up	KfW-Startgeld	Private bank through standard contacts to borrower	Avoid selection of good risks by the private banks (i.e. financing start-up projects that could have been funded anyway by normal private banks)
New technology-based firms	Seed to expansion	High-tech-Gründerfonds	VC company through standard contacts to the firm	Ensure detailed market knowledge among the programme management, select a diversified portfolio or focus on a few sectors/technologies only
Opportunity-based start-ups; new technology-based firms	Seed to expansion	ERP Start-up Fonds	Private bank through standard contacts to borrower	Avoid selection of overly bad risks by private banks/VC funds
Opportunity-based start-ups; copycat start-ups	Seed to expansion	no such measure in Germany	Change in the number of start-ups in the whole economy (while controlling for other factors that influence start-up decisions)	Be aware that tax incentives only work if there are good prospects of start-ups' profitability, tax/contribution incentives have to fit in total system of corporate taxation

3 Aims, strategies and instruments of a start-up promotion

No.	Type of instrument	Main objective(s)	Typical mode of delivery	Typical costs per start-up (EUR)	Underlying rationale
Consulting and infrastructure					
7	Legal and management advice	Creating new jobs, reducing unemployment	Free or low-cost consulting services for entrepreneurs by public organisations or private institutions, paid by the government (e.g. Chambers of Commerce)	500 to 5,000	Compensation for potential entrepreneurs' lack of business-related information
8	Infrastructure supply for start-ups	Creating new job opportunities, fostering innovation and new technology, utilising endogenous potentials	Free or low-cost rents plus commercial services (secretary, meeting rooms, technical equipment, marketing etc.) in a start-up centre run/financed by the government	10,000 to 100,000	Stimulation of learning among start-ups, compensation for low market reputation of start-ups
9	Marketing support for start-ups	Creating new job opportunities, increasing competition	Organising trade fairs where new businesses can present their products, grants to start-ups to participate in (foreign) trade fairs	5,000 to 20,000	Compensation for limited knowledge/resources for marketing in start-ups, compensation for their low market reputation
10	Business angel networks	Fostering innovation and new technology, utilising endogenous potentials	Public financial support to set up and run a network of business angels who offer financial and managerial support (incl. own investment in the firm)	Cannot be specified	Compensation for a lack of business-related knowledge and internal financial resources

Types of start-up addressed	Start-up stage addressed	Example from Germany	Monitoring approach	Key success factors
Copycat start-ups; necessity start-ups	Idea to seed	IHK Gründerberatung	Report by the founder on enterprise success, 6 months to 1 year after start-up	Balance between general information (which could also be obtained from public sources) and time-consuming consulting that considers each start-up case in detail (e.g. developing a business plan)
Opportunity-based start-ups; new technology-based firms	Seed to expansion	More than 100 'Start-up Centres' in Germany	Report by the management of the start-up centre	Achieve a good age mix of start-ups, balance between specialisation (e.g. on certain sectors) and economies of scale (i.e. a large number of start-ups) to reduce fixed costs per start-up
Opportunity-based start-ups; copycat start-ups	Start-up to expansion	BMWi measure international fair participation	Report by the enterprise on additional sales due to marketing activities, 6 months to 1 year after the event	Select start-ups that have viable business ideas/products, but a lack of marketing capacity
Opportunity-based start-ups; new technology-based firms	Seed to expansion	BAND	Business angels through standard contacts to the firm	Include all major business angels in the network, link with activities that allow entrepreneurs to meet business angels (regional or sector-specific start-up fairs etc.)

3 Aims, strategies and instruments of a start-up promotion

No.	Type of instrument	Main objective(s)	Typical mode of delivery	Typical costs per start-up (EUR)	Underlying rationale
Building role models					
11	Awards for successful start-ups	Creating new job opportunities, increasing competition	Selection of successful start-ups by a jury of experts and awarding these start-ups a prize at a public event	5,000 to 50,000	Raising awareness of entrepreneurship
12	Start-up competitions	Creating new job opportunities, increasing competition	Submission of business plans for evaluation by a jury, successful business plans receive an award or a small grant	5,000 to 25,000	Raising awareness of entrepreneurship
13	Raising entrepreneurial attitudes among university graduates	Fostering innovation and new technology	Improving conditions for university graduates to start a business through support services, training, screening of commercialisation potential of research results, awareness campaigns, reform of curricula, limited financial support	Cannot be specified	Raising awareness of entrepreneurship
14	Public campaigns on entrepreneurship	Creating new job opportunities	Wide range of campaigns: advertising, TV shows, newspaper reports, conferences	Cannot be specified	Raising awareness of entrepreneurship

Types of start-up addressed	Start-up stage addressed	Example from Germany	Monitoring approach	Key success factors
Opportunity-based start-ups; copycat start-ups	Idea	Deutscher Gründerpreis	Change in the number of start-ups in the whole economy (+ control for other factors)	Select successful start-ups that can serve as role models for other entrepreneurs (i.e. not too specialised/ idiosyncratic, but also not too common)
Opportunity-based start-ups; new technology-based firms	Idea	Gründerwettbewerb Multi-media	Reports by award winners and non-winners on their success, 1 or 2 years after the competition	Avoid a low ratio of awards to submitted business plans (otherwise potential entrepreneurs will be discouraged from participating), focus on relevant sectors
New technology-based firms; opportunity-based start-ups	Idea to seed	EXIST	Change in the number of start-ups formed by graduates from a certain university; market success of start-ups by graduates	Link awareness and support activities at the university to external resources (e.g. banks, incubators, business angels), involve teaching programmes on entrepreneurial skills, consider field-specific attitudes and barriers to entrepreneurship, including opportunity costs of founding a new venture
Copycat start-ups; necessity start-ups	Idea	Gründerland Deutschland	Change in the number of start-ups in the whole economy (+ control for other factors)	Campaign broadly, but be honest about the challenges and preconditions of entrepreneurship

3 Aims, strategies and instruments of a start-up promotion

No.	Type of instrument	Main objective(s)	Typical mode of delivery	Typical costs per start-up (EUR)	Underlying rationale
Training					
15	Training for entrepreneurs	Creating new job opportunities, reducing unemployment	Training courses ranging from short seminars to half-year study-courses, often targeted at the unemployed	2,000 to 10,000	Compensation for a lack of business-related knowledge
16	Teaching programmes on entrepreneurship	Creating new job opportunities	Development and implementation of curricula for secondary schools and universities, including professorships of entrepreneurship	Cannot be specified	Compensation for a lack of business-related knowledge
17	Virtual start-up projects at schools and universities	Creating new job opportunities	Creation of virtual enterprises operated by a group of students, supervised by a teacher trained in entrepreneurship, or accompanied by a business angel, running for a limited period of time and acting on virtual markets	Cannot be specified	Raising awareness of entrepreneurship

Types of start-up addressed	Start-up stage addressed	Example from Germany	Monitoring approach	Key success factors
Copycat start-ups; necessity start-ups	Idea to seed	IHK Gründerberatung	Report by supported entrepreneurs on their success, 6 months to 1 year after training	Advertise the measure in a ways that attract people with entrepreneurial attitudes but who lack business-related knowledge (management, accounting, legal matters)
Opportunity-based start-ups; copycat start-ups	Idea	Gründerlehrstühle	Change in the number of start-ups in the whole economy (+ control for other factors)	Integrate entrepreneurship training in standard curricula in order to reach all students, engage teachers with entrepreneurial attitudes and skills, involve entrepreneurs who can give a real-world view
Opportunity-based start-ups; new technology-based firms; copycat start-ups	Idea	TRACE/Aachen	Change in the number of start-ups in the whole economy (+ control for other factors); reports by students about their entrepreneurial activity, 5 years after leaving school or university	Develop a realistic set-up that takes into account the various barriers and challenges when starting a new business, in particular the market environment should be properly designed (i.e. do not make things too easy)

3.3 Examples of start-up promotion programmes in different OECD countries

To illustrate the way in which developed countries implement their start-up promotion instruments, examples from five countries (Hungary, Ireland, Chile, Lithuania, and Austria) are given below. These countries represent different levels of economic development and traditions of entrepreneurship. Hungary, Chile and Lithuania are comparable to a number of MICs and face similar challenges, such as a brain drain of well educated people and a low

share of high-tech industry and knowledge intensive services. They also have relatively large science sectors but few technology transfer activities. Ireland and Austria are examples of countries that have managed to catch-up rapidly in terms of per capita income, and which have since adapted their sector structures towards knowledge-based industries. These five examples also represent different approaches to start-up promotion and they illustrate different types of instrument.

An overview of examples of start-up promotion programmes in Germany can be found in the appendix.

Hungary

Name of programme	Start-Hitel
Aims	Transformation of the Hungarian economy into a market economy
Type of start-up promoted	All types
Stage of business establishment promoted	All stages
Type of instrument	Start-up loans
Name of programme	New Hungary Enterprise Promotion Programme
Aims	Creation of jobs and economic growth
Type of start-up promoted	All types
Stage of business establishment promoted	Start-up stage, expansion stage
Type of instrument	Loans, guarantees, venture capital financing
<p>These two Hungarian programmes are instruments for providing financial aid to start-ups. The first programme, Start-Hitel, illustrates the transfer of a well established funding instrument from a more developed to a less developed country. The second scheme, the New Hungary Enterprise Promotion Program, is an example of start-up promotion being integrated into a broader programme of funding for investment in SMEs.</p>	

In 1991, the Hungarian National Bank and the Deutsche Ausgleichsbank together established the start-up promotion programme, **Start-Hitel**. This was intended to help the Hungarian economy transform into a market economy after the fall of the iron curtain in 1989 (Schlegel, 1994). The programme was worth DEM 100 million (ca. EUR 51 million) and was aimed at people who planned to establish a company, take over an existing company, or enter an active shareholding. Those in charge of the programme identified capital procurement as the main problem facing potential entrepreneurs, so they decided to provide aid in the form of start-up credits.

The credits, for a maximum value of DEM 250,000 (ca. EUR 128,000), were provided at a variable interest rate set at 25 % below the base rate of the Hungarian National Bank. Borrowers were allowed to defer repayment of their loans for up to two years. The usual mode of repayment was in biannual instalments, although borrowers could also pay back their loans ahead of time without costs. To avoid liquidity bottlenecks during a firm's early stages, applicants for the start-up loans were required to finance at least 10 % of the project with their own resources. The start-up loans were provided by local credit institutions who had to fund them partly through their own means. This co-funding model was established to make sure that the credit institutions conducted proper credit checks, and that they administered the loans appropriately.

More recently, Hungary has set up the **New Hungary Enterprise Promotion Programme**, whose target group consists of SMEs. It is not specifically a start-up promotion programme, but start-ups are included if they fulfil the eligibility criteria. The most important criterion is size, and most start-ups are small enough to qualify. The starting point for this programme was the observation that 75 % of Hungarian firms operate without bank credits. The presumption is that some firms, especially SMEs, do not receive bank financing despite the fact they are creditworthy. The main reasons for this are their lack of credit history, which makes it difficult

for banks to assess their likely repayment behaviour, and their shortage of collateral. This pushes up the transaction costs of bank financing, making it unattractive for the firms. At the same time, the venture capital market is seen to be underdeveloped in Hungary, compared to other European countries.

The New Hungary Enterprise Promotion Programme includes three components: *credits to micro firms and SMEs*, *guarantees for credits to micro firms and SMEs*, and *early-stage equity financing*. Most of the resources (85 %) for this programme come from the EU's Joint European Resources for Micro to Medium Enterprises (JEREMIE) initiative. The distribution of the funds is coordinated by the Venture Finance Hungary Limited Company, which acts as a financial venture on behalf of the National Development Agency. Fund disbursement is carried out by financial intermediaries at the local level.

To receive a credit through this programme, an applicant firm's turnover must not exceed HUF 200 million (ca. EUR 708,000), it must be unable to obtain credit from a bank at the time of application, and it must have a convincing business plan. As with the Start-Hitel programme, applicants must provide some of the resources for the project themselves – in this case 20 %.

- The credits are worth up to HUF 50 million (ca. EUR 177,000) per company, and must be used for business expansion activities within the territory of Hungary (export activities are not supported). The interest rates are capped at a fraction of the average interest rate in the interbank market (BUBOR) plus six per cent, and borrowers are allowed to start repayment after two years.
- Credit guarantees are provided for loans to micro firms or SMEs worth a maximum of HUF 200 million. To secure the necessary backing, a financial intermediary must apply to Venture Finance Hungary Plc. for inclusion as one of the guaranteed creditors. The conditions for credits

are those set by the financial intermediary. In the event of a claim, the Venture Finance Hungary Plc. must pay out 80 % of the credit sum.

- Early-stage financing is provided as venture capital through a public-private partnerships in which Venture Finance Hungary Plc. cooperates with private venture capital firms, who must also contribute some of the funds. The cooperation takes the form of either a joint fund or a co-investment. In the first case, Venture Finance Hungary Plc. and the private venture capital firm create a joint venture capital fund, in which Venture Finance Hungary Plc. may take a majority holding at any time during the fund's existence. In the second case, Venture Finance Hungary Plc. founds a venture capital fund on its own, then makes investments together with a private sector investor. The target firms are limited companies with their head offices in Hungary, which are more than five years old, have a net annual turnover of up to HUF 1.5 billion (ca. EUR 5.3 million), do not have access to bank financing, and which fulfil the usual criteria of VC funds (promising idea, good business plan, high return expectations).

To our knowledge there is no English or German documentation of the long-term results or the actual duration of the Start-Hitel programme. The only information available is compiled in Schlegel (1994) who reports the state of affairs at end of 1993. The programme obviously experienced strong demand. By the end of 1992 the total amount available under the programme had been applied for, and by the end of September 1993, 4,300 business start-ups had received support through the re-investment of the first repayments. The average credit provided per company was DEM 46,000 (ca. EUR 23,500) and the total investment in the entrepreneurs was DEM 320 million (ca. EUR 164 million). As the main aim of the programme was to initiate private sector activity in a former socialist country, the programme was not limited to technology-oriented or innovative start-ups. The majority of applicants under the programme (45 %) set up firms in trade and commerce,

for which entry barriers are low, with just small amounts of money required.

The results of the New Hungary Enterprise Promotion Programme have not been as good. In November 2010, József Vingelman, the CEO of Venture Finance Hungary Plc., reported on the experiences of the programme (Vingelman 2010), for which the demand was apparently rather moderate. In the credit component of the programme, the fund for which demand has been highest (the micro and small loans fund) has only allocated 24 % of its capital after about three years of operation. The financial intermediaries also reported limited interest in credits because of the small size of the available loans. Furthermore, there seems to be an overlap in the provision of state-run loans, which means firms do not always apply for this particular programme. Finally, the EU regulations which came into effect with the JEREMIE programme, such as the requirement for credits to be used for business expansion activities only, make the credits provided by the programme relatively unattractive. Regarding the credit guarantees, the financial intermediaries must introduce costly IT structures to operate a guarantee fund that is too small when compared with their SME portfolios. The credit institutions therefore prefer traditional guarantee products. Vingelman is unable to report very much about the venture capital part of the programme, because the funds for it were only set up in the first half of 2010. To solve the problems, Vingelman's main proposal is to simplify the procedures, reduce redundancies and improve the communication with the firms.

Ireland

Name of programme	Support programmes of Enterprise Ireland
Aims	Job creation, fostering innovation
Type of start-up promoted	NTBFs, opportunity-based start-ups
Stage of business establishment promoted	All stages
Type of instrument	Grants, tax reductions, venture capital, entrepreneurship education, management advice
<p>The Irish example shows how an integrated promotion activity in favour of growth-oriented start-ups can be designed and implemented. An autonomous government agency, Enterprise Ireland, runs a comprehensive set of support schemes including almost all types of start-up promotion instrument. Another interesting feature of the Irish initiative is its focus on high-potential start-ups. Such a focus might be relevant for many MICs if they have to allocate scarce public funding resources.</p>	

In Ireland, most programmes of support for firms, including start-ups, are coordinated by Enterprise Ireland, the central government organisation tasked with helping Irish firms to develop and grow. Enterprise Ireland prioritises increased export sales by Irish companies, as high foreign demand for Irish goods and services is regarded as the main generator and sustainer of jobs in Ireland. In terms of start-up promotion, there is a strong focus on high-potential start-ups (HPSUs). Enterprise Ireland defines an HPSU as any new firm that plans to build its business around an innovative product or service, with ambitions to sell this product on international markets, and with the potential to create ten jobs and earn one million euros in export sales within four years of its launch. A range of promotion instruments is available for such start-ups, which provide support between the ideas stages and the expansion stages. Each start-up can make use of several instruments. These instruments are described briefly below:

- *HPSU Feasibility Study Grant*: A grant for financing a study of the viability of the start-up project and to help set out the business plan. The fund provides for 50 % of the study costs, up to a

maximum of EUR 15,000, with the remaining 50 % to be financed by the potential entrepreneur.

- *Innovation Voucher*: A voucher worth EUR 5,000 to help fund cooperation with a university or other public research institution to explore a business idea. Innovation vouchers are available to all companies with fewer than 50 employees in Ireland.
- *CORD Grant*: An income grant to sustain a potential entrepreneur while participating in a so-called Enterprise Platform Programme. These programmes are one-year start-up courses offered by the Irish Institutes of Technology that include formal business education, entrepreneurship training, personal development, business mentoring, and business guidance. The grant equates to 50 % of the candidate's salary in the previous year, up to a maximum of EUR 30,000.
- *Trade Fair Participation Grant*: A grant to fund participation in a trade fair, to help recipients inform potential customers about their firm's

product and to gain market knowledge. The grant is available to candidates participating in a foreign trade fair for the first time. Total costs of less than EUR 2,000 are not considered. The grant covers 50 % of eligible costs.

- *Mentor Grant*: A grant for engaging a mentor for a maximum of ten sessions per year. The mentors are senior executives from the private sector with a proven track record in business. The eligible costs are EUR 175 per day (EUR 1,750 per year).
- *Seed Capital Scheme Certification*: A tax rebate for owners of start-ups based on their income tax payments for the previous six years.
- *Business Expansion Scheme Certification (BES)*: A tax rebate for investors in start-ups. Start-ups for which the tax reduction can be claimed must be certified by client companies approved by Enterprise Ireland. Start-ups valued at up to EUR 2 million are eligible for the BES, but they should not earn more than EUR 1.5 million in any 12 month period. The tax reduction for investors amounts to EUR 150,000 in a tax year.
- *Innovative HPSU Fund (equity)*: A fund to provide equity for HPSUs. This corresponds to the venture capital approach and involves investments made jointly with other investors. Enterprise Ireland provides up to 50 % of the investment required.
- *Competitive Start Fund (CSF)*: A fund to help HPSUs achieve key commercial or technical milestones, such as building prototypes, or securing reference sites, a business angels or venture capital investments. Here the maximum commitment on the part of Enterprise Ireland is EUR 50,000. In return for this, the agency takes a 10 % equity stake.
- *Business Accelerator Programme*: A programme of grant funding to engage business accelerators. This is the name given to industry experts who

are well placed to help firms expand into export markets. The maximum eligible payout for this is EUR 1,500 per day and EUR 30,000 over two years.

- *iGAP (Internet Growth Acceleration Programme)*: A management development programme exclusively for internet and games companies. A six-month training course taught by serial entrepreneur facilitators, it also includes support by implementation coaches who help the firms to reach their milestones.
- *First Flight Programme*: Programme to assist companies that are planning either to export for the first time or to enter new markets. The programme includes workshops, access to information and advice, mentoring and assessment of the export plan.
- *Excel at Export Selling*: A series of workshops disseminating knowledge about successful export strategies.

To the best of our knowledge, no systematic evaluation of the Enterprise Ireland support programmes for start-ups has yet been published. In 2010, Enterprise Ireland supported 80 HPSUs.

Chile

Name of programme	Start-Up Chile
Aims	Fostering innovation and entrepreneurship
Type of start-up promoted	NTBFs, opportunity-based start-ups
Stage of business establishment promoted	All stages
Type of instrument	Grants, provision of contacts
The Chilean example may be of particular interest for development policy as it tackles a major challenge of many LICs and MICs, which is the outmigration of some of the most talented people. The Start-Up Chile programme attempts to invert this process by attracting talented people from abroad to start a business in Chile.	

In 2010, the Chilean Government launched the programme **Start-Up Chile**. The aim of this is to increase the country's innovativeness and to make it a leader of innovation and entrepreneurship in Latin America. To reach that goal, Chile is persuading high-potential entrepreneurs from all over the world to set up their businesses there. Entrepreneurs are attracted by a non-repayable grant of USD 40,000 as well as access to the country's important social and capital networks. The potential new Chilean

entrepreneurs apply for the programme and are then selected by a jury of Silicon Valley experts and members of the Chilean innovation board. The goal of the programme is to encourage 1,000 entrepreneurs to settle in the country by 2014. As the programme is relatively new, not many lessons have yet been learned from it. The programme seems to be attractive: in the first two selection rounds of 2011, about 1,000 entrepreneurs applied for around 200 places in the programme.

Lithuania

Name of programme	StartupHighway
Aims	Fostering innovation, job creation
Type of start-up promoted	NTBFs, opportunity-based start-ups
Stage of business establishment promoted	Idea stage, seed stage
Type of instrument	Grants, legal and management advice, infrastructure
The Lithuanian programme StartupHighway has been included here as an example of a private initiative to promote start-ups. Since public funds are limited in many developing countries, such a programme might be interesting in terms of development policy.	

In 2011, **StartupHighway** was launched by a private sector initiative in Lithuania to provide what it calls a start-up acceleration programme. It is targeted at potential entrepreneurs from anywhere in the world, whose plan is to start a firm with the ambition to make it a global business. The programme lasts 13 weeks and includes grant funding of up to EUR 14,000, as well as intensive support from an international group of mentors and the provision of infrastructure and consulting services. Because of the intensive assistance promised, selected entrepreneurs are requested to remain in Vilnius (where the programme is based) while the programme is running, but they do not actually need to set up their firm in Lithuania. Applicants are selected based on their answers to a questionnaire of 20 questions. This means potential entrepreneurs are not required to have a complete business plan at the time of application.

The programme runs in three stages. In the first five weeks, the details of the business idea are worked out in one-to-one mentoring sessions. In the second stage, also with the help of the mentors, the business plan and a working product are prepared. In the third stage, a demo version of the product is finished and then presented to potential customers. The programme ends with two so-called investor days, one of which takes place in Lithuania and the other in a major European centre for venture capital. The programme is financed by seven business angels and does not receive any government support. In return for their commitment, the business angels take a ten per cent equity stake in the new start-ups. Because the first round of the programme only began while this report was being written (on 15 September 2011), nothing can yet be said about the experiences gained.

Ireland

Name of programme	AplusB (Academia plus Business)
Aims	Fostering innovation and entrepreneurship
Type of start-up promoted	NTBFs, opportunity-based start-ups
Stage of business establishment promoted	All stages
Type of instrument	Grants, loans, legal and management advice, infrastructure, training for entrepreneurs, raising entrepreneurship attitudes among university graduates
The Austrian programme is an example of a start-up initiative that is carried out in universities. This may be a particularly interesting target group in developing countries, as many universities generate a large number of graduates, although their potential to transfer their knowledge into business practice is often underutilised.	

At the turn of the millennium, Austria identified a shortfall in the number of business start-ups in comparison with other developed countries. The number of high-tech start-ups in particular was perceived as being too low. As a consequence, in 2001 the Federal Ministry of Transport, Innovation and Technology initiated a business incubating programme under the name **AplusB (Academia plus Business)**, to run from 2002 to 2012. It is targeted at researchers at universities and other institutions. It was set up with the following goals: (1) raising entrepreneurial awareness in academic institutions, (2) increasing the number of academic spin-offs, (3) enhancing the quality of academic spin-offs with respect to their technology and knowledge intensity and their likelihood to succeed, and (4) enhancing technology transfer from academia to the business sector. To achieve these goals, the programme is helping to establish start-up centres in academic institutions. In all, by 2010 nine start-up centres had been created, covering all regions of Austria. The centres provide advice, business education, access to networks, financing and infrastructure, and they are also supposed to help stimulate the awareness of entrepreneurship in academic institutions.

The programme has a budget of EUR 89.7 million for the first ten years and it is financed in roughly equal parts by the federal government, the federal states and academic institutions. Each centre accepts an average of seven projects each year, which remain with the centre for 17 months. At any point in time, eight to ten start-ups are supervised in each centre. In total, 334 start-up projects have been hosted since 2002, of which 268 (80 %) actually led to the foundation of a firm.

When the programme began, a monitoring system was also installed. A part of this was a systematic evaluation which compared two groups of start-ups with similar characteristics, one of which had received support from AplusB, while the other had not (control group; Egelin et al., 2007). The results showed that those benefiting from the AplusB programme contributed significantly to the transfer of technology and knowledge from academia to the business sector.

These start-ups took out patents more often, they conducted research and development more often and more intensively, and they employed a greater proportion of university graduates than did the start-ups in the control group. Furthermore, they also performed better in terms of employment levels. However, no effect could be observed on the actual number of start-ups arising from academia.

3.4 Critical success factors of start-up promotion instruments

It is difficult to draw conclusions about the success of start-up promotion instruments, due to a lack of systematic evaluations assessing the impact of programmes. Most programme evaluations focus on the adequacy of the intervention, the immediate programme outcome (number of funded start-ups), the sustainability of start-ups, and the efficiency of the programme's administration. The OECD provides a valuable overview of current standards for evaluating entrepreneurship programmes, and it publishes summaries of the findings of entrepreneurship training programme evaluations (OECD 2007, 2009). Only a few evaluations have been completed that look at the effects programmes have on economic objectives, such as changes in the levels of start-up activity, the number of additional jobs created by start-ups, or changes in the sectoral composition of an economy due to start-up activity. The main reason for this lack of information is probably the severely limited availability of data, combined with the problems of measuring the crowding out effects (i.e. the number of enterprises not entering a market because funded start-ups have occupied their market position) and market exit effect (the number of enterprises that close down as a result of competition from start-ups that have received public funding). Osterbeek et al. (2008) and Egelin et al. (2010) are among the few studies that have used a rigorous methodology to analyse the impacts entrepreneurship programmes have had on the total population of entrepreneurs and on start-up activity. They found the results were negligible. Other impact analyses found positive effects of entrepreneurship and start-up promotion

programmes with regard to the knowledge-intensity of start-ups (use of patents, R&D activity, investment in R&D) and employment growth (Egeln et. al., 2007) and with regard to risk-taking and the formation of new ventures, technology transfer and growth of firms (Charney and Liebcap, 2000).

Given these limitations, we have restricted our discussion of critical success factors to generic factors that affect the operation of each instrument, as can be found in the literature (see OECD, 2007, 2009; Benus et al., 2009; Charney and Liebcap, 2000; Fayolle, 2005; Karlan and Valdivia, 2006; Zvirblis and Buracas, 2011; see also the 'Key success factors' column in Table 1). We also include the experiences gained in the start-up promotion programmes presented in Section 3.3.

- **Start-up grants:** The key challenge for this type of programme is to avoid the inefficiency that occurs when large amounts of funding are given to unsuccessful entrepreneurs or to people who do not really intend to run a business anyway. It is therefore crucial to select the most promising applicants, which means expending considerable resources on the proposal evaluation process. Programme managers need to have detailed market knowledge. In order to limit their administrative costs, many grant programmes focus on specific sectors or restrict their funding to a small number of start-ups.
- **Start-up loans delivered directly by public banks:** The key rationale for this kind of programme is to compensate for a lack of private financing for more risky start-up projects, or for start-up projects which do not fit the standard pattern of projects that private banks are used to financing (and which therefore involve high screening and evaluation costs for the banks). Such programmes must strike a balance between taking risks (i.e. accepting a lack of collateral) and focusing on projects that show high promise (in order to refinance funds from loan repayments). As is the case in any bank, this requires a diversified portfolio and highly skilled programme managers. If a loan programme of this kind is too small, this could jeopardise its diversity and raise the proportion of its administrative costs. A programme should therefore dispose of sufficient funds to be able to support at least a three-digit number of start-ups each year.
- **Start-up loans delivered indirectly via private banks:** These programmes are popular because they reduce administration costs, since major parts of the application and evaluation process are outsourced to private banks (which means they are ultimately borne by the start-ups). In this procedure, private banks select the start-up projects they think are suitable for co-funding with public loans. It is always possible that the private banks will only select good risks (i.e. start-ups projects that could just as easily have been funded by private banks alone) in order to acquire new customers while limiting their financial involvement. In this case, the programme is likely to be ineffective because start-ups that seem to be bad risks will not receive financing.
- **Venture capital investment:** The success of public VC programmes depends heavily on the detailed market knowledge of the programme managers, as well as on their managing and financing skills. Programmes will thus have to offer high salaries to their managers in order to compete with private VC funds for talented personnel. At the same time, either a diversified technology portfolio, or a clear focus on a few sectors or technologies tends to increase the success of a fund. For the first strategy, a large amount of capital is required, while the latter approach may end up limiting the impact of the programme.
- **Guarantees for private investments in start-ups, using loans or venture capital:** As with any guarantee programme, the main challenge here is to discourage the private actors from selecting bad risks, as this results in high failure costs for the public programme. Sector-specific knowledge and detailed financial acumen is therefore required on the part of the programme managers who make the decisions about the

guarantees. As that kind knowledge is typically available at banks, these guarantee programmes are often run by private or public banks.

- **Reduction of taxes or social security contributions for start-ups:** Tax incentives will only work when start-ups have a positive profit outlook. Reducing social security contributions or other types of mandatory contribution implies high windfall gains for successful start-ups, and might turn out to be a very costly measure, although the costs are less apparent than for most other programmes.
- **Legal and management advice:** Services of this nature must strike a balance between, on the one hand, repeating general information that can already be obtained from public sources, and probably adds little to an entrepreneur's success, and the provision, on the other hand, of time-consuming consultancy activities that consider each start-up case in detail (e.g. developing a business plan). The latter approach can make such programmes very costly and inefficient. At the same time, these programmes require adequate marketing so that potential entrepreneurs know they are available.
- **Infrastructure supply for start-ups:** Business incubators have become very popular measures, in part because they have high public visibility. In regional contexts, incubators should help to retain local resources, such as talented personnel, and to modernise the regional economy. Incubators can be seen as part of the office real estate market, since their main product is rented office space. In order to add value to privately run business centres, public incubators should offer specific services such as laboratory equipment or coaching. They should also look for a good age mix in the start-ups so that new entrepreneurs can learn from more experienced ones. A big challenge is to keep a balance between specialisation (e.g. in certain sectors), which encourages knowledge spill-over, and economies of scale (the need for a large number of start-ups in the centres), which reduce fixed costs per start-up. The choice will largely depend on the size and sector composition of the start-up potential in the region.
- **Marketing support for start-ups:** Since practically any start-up would be happy to receive support for the marketing of their products, the efficacy of such measures depends to a great extent on the ability to select worthy start-ups that have viable business ideas and products, but suffer a significant lack of marketing capacity. As this entails considerable effort for screening potential beneficiaries, marketing support measures often focus on specific sectors or technologies.
- **Awards for successful start-ups:** This type of measure can hardly fail as prizes and awards are only given out to start-ups that have proved successful in the market. Since the underlying rationale of such measures is to stimulate entrepreneurial activity in others by presenting cases of best practice, it is important that the start-ups selected for awards should be appropriate businesses to serve as role models (i.e. they should not be too specialised nor pursue very idiosyncratic business forms). They should nonetheless be clearly distinguishable from the average start-up. It is therefore crucial to nominate a balanced team of appropriate experts to select the award-winning start-ups.
- **Start-up competitions:** If a competition mobilises a large number of individuals to develop business plans, although only a very few receive funding in the end, this can be a very cheap measure. However, a low ratio of awards to the number of business plans submitted may also discourage people from participating in future events. When organising such measures over a longer period of time, it is therefore important to make sure that a fair share of the submitted business plans win awards. It is also good to retain the flexibility to increase the ratio in case a large number of high quality business plans are submitted. For such competitions, it is useful to

focus on different sectors or technologies, which also makes it easier to advertise the activity in the relevant communities.

- **Training for entrepreneurs:** To ensure training is delivered to the entrepreneurs who need it most – people with entrepreneurial attitudes but who lack the necessary business know-how (management, accounting, legal matters) – such programmes should either cooperate with other activities that also promote entrepreneurship, or they should be run by organisations that have contacts to a wide variety of potential firm founders. In practice, such measures are often run by local chambers of commerce or local business development authorities.
- **Teaching programmes for entrepreneurship skills:** Training courses in entrepreneurship should be integrated into the standard curricula of higher-education study programmes in order to reach all students. Most importantly, these teaching programmes should employ teachers who possess entrepreneurial attitudes and skills themselves. It is also helpful to involve older entrepreneurs who can provide their real-world view of starting a business.
- **Virtual start-up projects at schools and universities:** This type of activity is intended to demonstrate to students how to set-up and run a business successfully, which should influence their own decision on starting a business themselves later. It is therefore essential that start-up simulations should involve a realistic situation that takes into account the various barriers and challenges that face the founders of a new business. In particular, the market environment should be designed properly, for example with potential customers who are reluctant to demand services from new firms that have no reputation, and with realistic reactions by competitors.
- **Increasing entrepreneurial attitudes among university graduates:** These measures are intended to encourage entrepreneurship through institutions of higher education, by developing a climate favourable for students who want to become entrepreneurs. As the institutions themselves generally have limited resources to invest in entrepreneurship support, it is a good idea to develop partnerships with external actors, such as banks specialised in financing start-ups, incubators, business angels and other public programmes. Inside universities, the various activities targeting entrepreneurship, such as teaching programmes for entrepreneurial skills, coaching or virtual start-up projects, should be interlinked. It is also important to anticipate any specific attitudes and barriers to entrepreneurship, including the perceived opportunity costs of founding a new venture when there may be favourable employment opportunities elsewhere.
- **Public campaigns on entrepreneurship:** The effectiveness of public information campaigns is very difficult to assess as they do not address individual entrepreneurs. There may be a long lag before the likely benefits of such campaigns take effect, in terms of people's decisions to start businesses. It seems a promising approach to campaign broadly, while being honest about the challenges, skills and attitudes needed to become a successful entrepreneur. However, the overall need for such campaigns is still questionable, as it is difficult to argue that a general aversion to entrepreneurship is a major obstacle to individuals starting businesses.
- **Business angel networks:** Establishing these networks is a cheap and often effective measure, though one should always remain aware that business angels might be competitors looking for their own investment opportunities. Networks should try to include a large number of business angels to make them attractive to potential entrepreneurs, and also to increase the investment opportunities for the business angels. Alternatively, a regional focus may also be useful, as this will ease access to the network for entrepreneurs. The activities of such networks should be linked to other start-up initiatives, such as training and financing programmes.

4 Start-up promotion in the context of development policy

4.1 Entrepreneurship in developing countries

In many low- and middle-income countries, entrepreneurs make up a high proportion of the total workforce. These entrepreneurs are usually either self-employed people, or they run their own businesses on a small scale. Many of them are active in the informal economy, and many have to fight hard to earn their living. As Figure 1 shows, of the countries currently included in the Global Entrepreneurship Monitor (GEM), those with the highest rates of entrepreneurial activity are classed as middle- or low-income countries in terms of their per capita GDP. By contrast, only a few high-income countries have such high rates of entrepreneurship.³

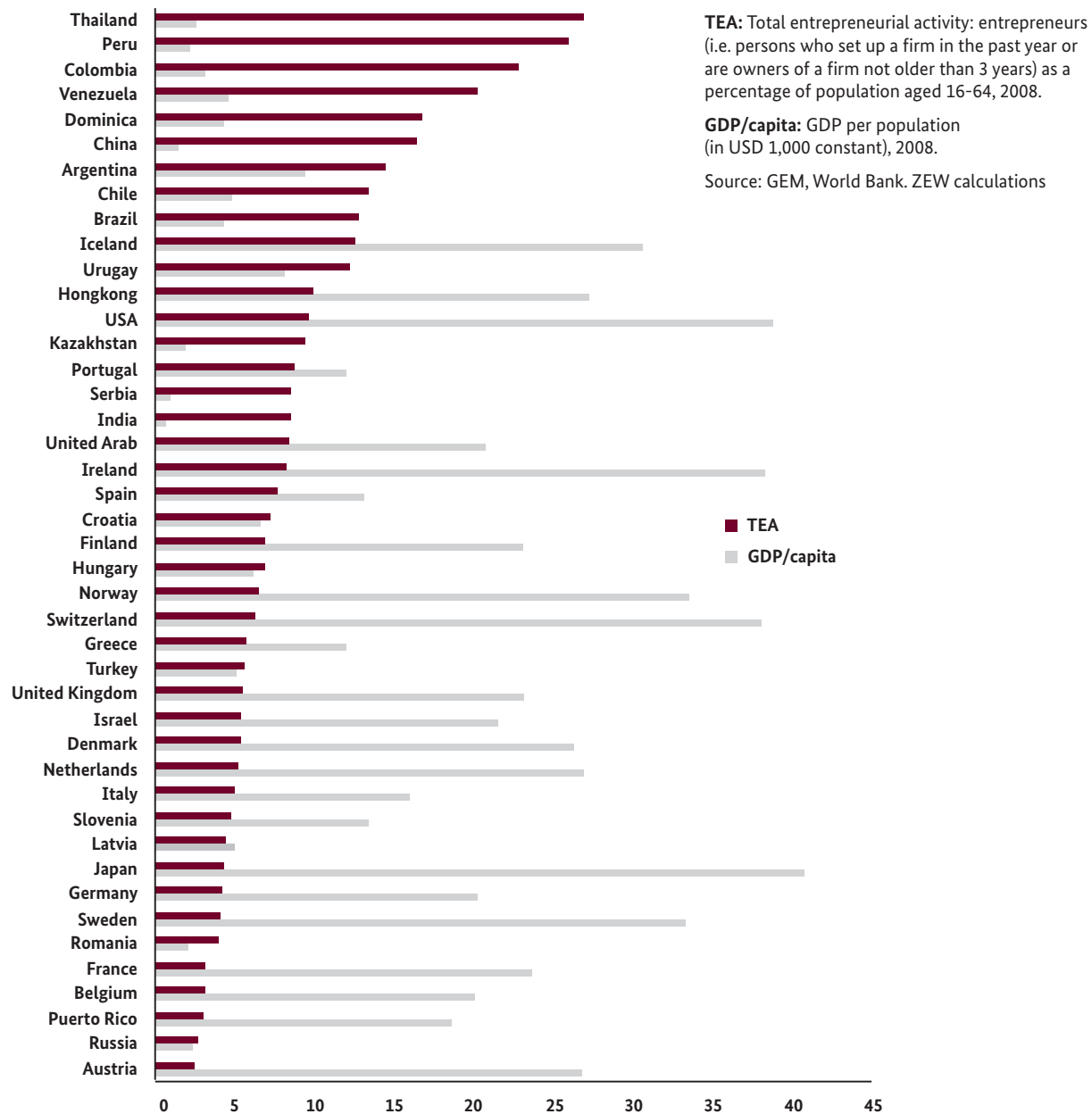
This reveals an important fact for those planning to support business start-ups in middle- and low-income countries: there is a high propensity for people to found their own business, but many start-ups have disadvantageous business prospects. They face intense competition and weak demand, and must cope with weak financial markets. Moreover, rather than pursuing innovative approaches, they are often based on business models oriented on what other existing businesses already do (copycat start-ups). Many start-ups in developing countries are necessity-driven, rather than being based on any sustainable business models or the entrepreneurial capacities of the founders. Entrepreneurship is primarily driven by imbalanced labour markets with an oversupply of labour than by demand (see Reinecke, 2002). By contrast, the lower entrepreneurial activity in high-income countries does not necessarily mean that people are reluctant to start businesses, but it reflects instead the high opportunity costs:

talented and well educated individuals are generally able to find attractive employment opportunities that promise higher incomes than they would earn by running their own firms – particularly when the risk of failure is taken into account (see Göggel et al., 2007).

At the same time, the high propensity to establish new businesses in low- and middle-income countries is not matched by a particularly favourable legal and regulatory environment for start-ups. World Bank data on the ease of doing business (World Bank, 2010) show that the legal and administrative conditions for starting a business tend to be less attractive in developing countries compared to developed countries. Figure 2 shows the same countries listed in Figure 1, ranked according to the attractiveness of their legal and regulatory environments for starting a new business. The ranking is based on four indicators: the number of procedures needed to establish a new business, the time it takes to register a new business, the cost of registering a new business, and the capital required to start a new business. Only a few middle-income countries appear among the top-ranking countries (Dominica, Romania, Kazakhstan, Peru), while most of the high-income countries do offer a favourable legal and regulatory environment for start-ups. This finding shows that individuals in low- and middle-income countries are still prepared to engage in entrepreneurial activity, despite the obstacles often placed in their way by the authorities. However, it is also important to note that the unfavourable legal and regulatory environment often goes along with a high percentage of start-ups operating in the informal economy.

³ The numbers in Figure 1 are based on a survey among the working age population in the respective country. To the extent that the respondents answer truthfully to the questions that aim at identifying the total entrepreneurial activity in a country, these numbers include both formal and informal businesses.

Figure 1: Entrepreneurship activity and GDP per capita



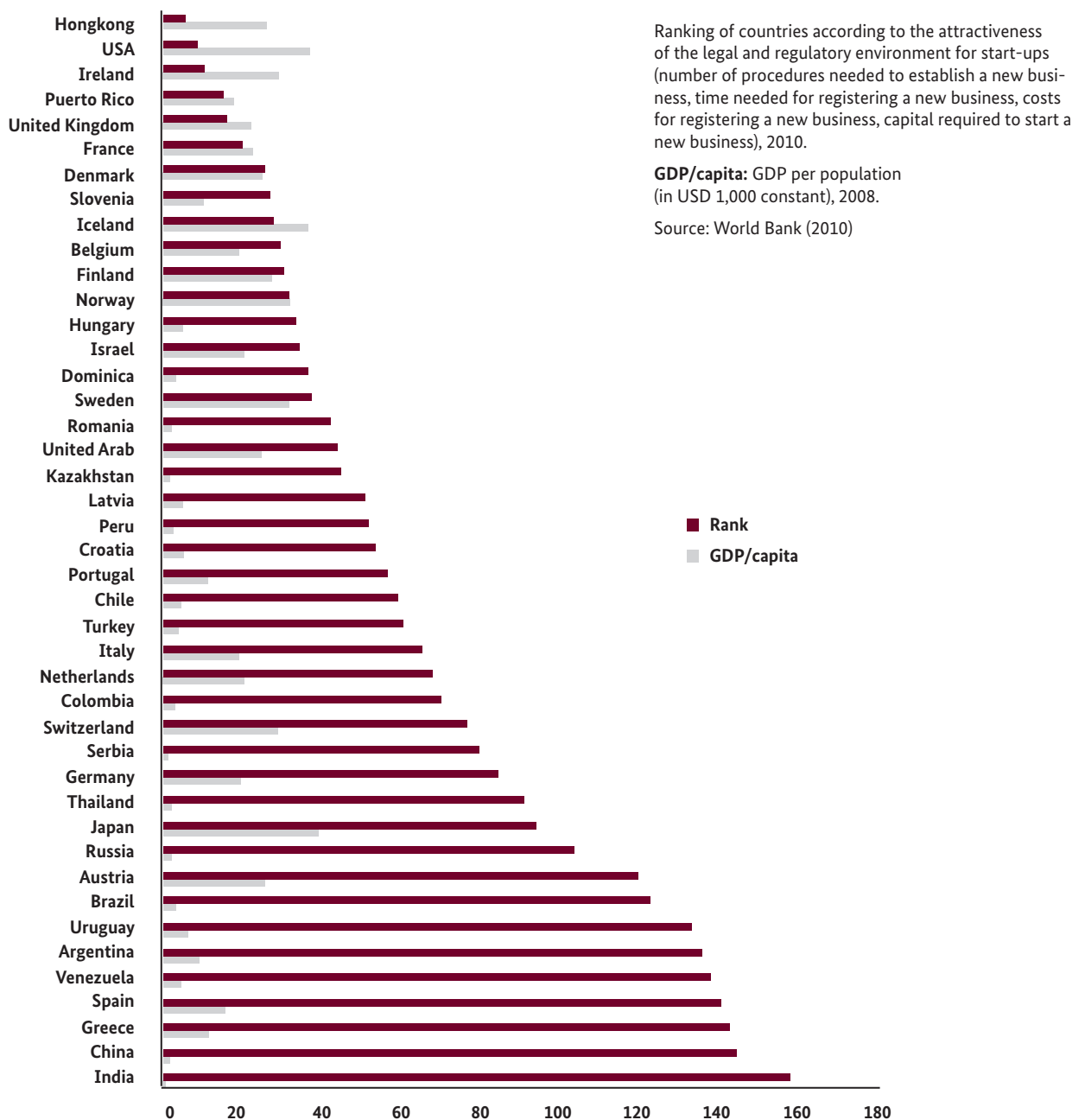
There is evidence that effecting major improvements in the regulatory environment can stimulate start-up activity significantly (see Chemin, 2009, for an example from Pakistan). For the sake of entrepreneurship promotion, this implies that simply reducing the administrative obstacles could be a good way to increase formal start-up

activity. This is also likely to be a low-cost answer, as simplifying administrative procedures rarely causes additional costs but instead saves money for both the public administration and the enterprises. At the same, the high propensity to start businesses despite an unfavourable environment represents a potentially fruitful starting point for

further policy initiatives – even if a high percentage of start-ups are operating in the informal economy. Starting with a large pool of start-ups, public policy and development cooperation could

concentrate on programmes that aim to upgrade new businesses and guide their business ideas in particularly promising directions, in order to maximise their long-term economic impact.

Figure 2: Legal and regulatory environment for starting a new business



4.2 Strategies for start-up promotion in LICs and MICs

If policy instruments from developed countries are used for start-up promotion in developing countries, those instruments must be adapted to the specific entrepreneurial environment in those countries. Many studies have been carried out on the drivers and barriers of entrepreneurship, but only a few have systematically investigated the differences between developing and developed countries (see Wennekers et al., 2005; Bennett, 2011; Hessels et al., 2008; Welter, 2005). Some of their main findings include the differing roles of institutions and effectiveness of public administrations, the contrasting relevance of corruption, social security and public safety, and the relative efficiency of financial markets. The way in which start-ups are financed also tends to differ significantly, as private banks play a much smaller part in developing countries, and informal investment by family members and microcredits from the non-banking system are more significant. A major factor hampering the growth of start-ups in developing countries is a lack of purchasing power on the demand side, with adverse market prospects. Many businesses in developing countries, including start-ups, are hampered by shortfalls in the technical infrastructure, including transport, communication and electricity.

Research into entrepreneurship has shown that start-up promotion should use different strategies in developing and developed countries. In developed countries, it is important to motivate a larger number of talented people to start businesses and realise the business ideas they would otherwise have passed up. To do this, the opportunity costs of founding a business have to be lowered, for example, by reducing the risk of failure or sharing some of the risk through publicly co-funded investments. Raising the social prestige of entrepreneurs by campaigning for entrepreneurship is sometimes also seen as important for increasing the level of entrepreneurial activity in developed countries.

In developing countries, start-up promotion strategies aim instead to upgrade existing entrepreneurial activities, particularly by raising the level of innovativeness shown by new businesses. Here, 'innovativeness' does not imply the use of high-technology; it means instead that start-ups should improve the quality characteristics of the goods and services they supply, rather than just increasing the quantity of goods and services offered on the market. This means that start-ups should create new markets, both locally and nationally, and should address needs that are not yet being adequately served. Of course, this is no easy task, as the enterprises from developing countries might start competing with firms from developed countries that have more market experience, better technological capacities and well developed networks.

Such strategies need to be translated differently to fit the different contexts of LICs and MICs.

For LICs, start-up promotion benefits from a large pool of entrepreneurs. In order to improve their prospects, promotion measures should aim to upgrade their business models and introduce innovatory aspects. For this purpose, a mix of instruments can be applied:

- Training of entrepreneurs may draw on experiences made by other programmes, such as CEFE, Start Your Business/Improve Your Business (SIYB) and Empretec (see Eckardt, 2003), but this should be redesigned to address issues of innovation management in start-ups and young firms. In particular, the process of generating, developing and testing innovative business ideas should form the core of training programmes.
- Such training activities should focus on a small number of entrepreneurs with promising business prospects and entrepreneurial attitudes. To identify and approach this group of entrepreneurs, it is useful to establish links to other activities, such as start-up competitions, entrepreneurial initiatives at universities and support networks for start-ups.

- Since innovative start-ups tend to require a significant amount of investment during their seed and start-up stages, training programmes should go hand in hand with the provision of sufficient funding sources. If, as is likely, the financial market is not adequately developed to serve the financing needs of innovative start-ups, funding programmes should be offered. These could take the form either of grant programmes (particularly for developing new products) or loan programmes (for standard investments).
- Giving awards to start-ups that have successfully established innovative business models or introduced innovative products can encourage other firm founders to think in terms of more innovative entrepreneurial activities.

In MICs, start-up promotion could be linked to innovation policy. It should be seen as one element in an innovation policy mix that attempts to modernise business practices and upgrade technological capacities, while also changing the sector composition of the economy towards more knowledge-intensive activities. Many MICs have developed innovation strategies in the past, and some have already established viable innovation-based industries, which range from high-tech sectors, to service provision in fields such as IT or media. Universities and public research centres could become the focal point for any innovation policy in MICs that stresses start-up promotion. This is because they contain the largest potential pool of entrepreneurs who could follow innovative business paths. Start-up promotion can contribute to such a policy mix at several points:

- Provision of infrastructure, such as incubators for start-ups, should be linked to technology initiatives, to initiatives at universities to raise entrepreneurial attitudes amongst graduates, or with start-up competitions in pre-selected fields of technology.
- Funding programmes could offer targeted financial support for start-ups that develop out of public research (academic spin-offs), which

will transform research results into marketable products.

- Awards for successful start-ups could stimulate innovative entrepreneurial activities by others, if the award-winning enterprises can serve as role models.
- Venture capital programmes and business angel networks can be useful, once a large enough group of prospective start-ups has emerged.

When following an innovation-based approach to entrepreneurship promotion, it is important to remember, firstly, that innovations are risky by nature and failure rates may be higher than for standard start-up programmes, and secondly, that promoting a large number of innovative start-ups in the same market may lead to cannibalisation effects. Innovation-oriented start-up programmes therefore need to be selective, in the sense that applicants should be carefully selected according to the prospects of their business plans. Instead of funding a large number of firms with few innovative ideas, support for a small number of high-quality start-ups can produce a greater economic impact. The Irish example is a good demonstration of this approach.

Even so, one must keep in mind that a start-up promotion strategy that focuses on innovative businesses is always subject to some risks. Being successful through innovation is far from easy, and enterprises in developing countries may enter into direct competition with firms from developed countries, which typically have more market experience, better technological capacities and well developed networks. This implies that a number of innovative start-ups may be unable to establish their business on the market permanently. Such failures should not be viewed as a shortcoming of the instrument, but rather as the inevitable consequence of innovation-oriented strategies.

4.3 Applying start-up promotion instruments in developing countries

Table 2 provides a brief summary of the applicability of various start-up promotion instruments in developing countries. It lists some basic economic, social and political prerequisites that a country needs to meet in order to implement the corresponding measures. This is followed by an assessment of which type of developing country the measure is most suited to. The final column contains some specifications and adaptations to the aims and designs of each measure, related to the start-up promotion strategies presented above.

Essentially, most start-up promotion instruments from developed countries can be applied in developing countries, provided that the basic requirements for the effectiveness and relevance of the instrument are in place. Specifications and adaptations are mostly intended to focus the instrument on certain types of start-up, and to link the start-up measures to other policy initiatives. For financial, consulting and training measures, it may be useful to restrict the focus to specific target groups in order to keep down the costs of the programme and increase its leverage.

As there is a high propensity to self-employment in developing countries, and therefore less need to provide a general stimulus to entrepreneurial activity, financing, consulting and training measures should be geared instead towards start-ups with a strong outlook for growth, or a high level of innovativeness. A focus on specific sectors may also benefit financing instruments, since these typically require in-depth market knowledge on the part of the programme managers who have to evaluate the viability of business ideas and avoid allocating public funds to unpromising new ventures that are likely to fail.

The effectiveness of start-up promotion could also be increased by offering interlinked packages of instruments. One example is to link business

plan competitions with specialised training and financing measures that provide targeted support to the award-winning start-ups. Another example would be to integrate start-up promotion into technology and innovation programmes. A promising approach often followed in developed countries is to fund new technology development projects undertaken in public research organisations and universities, and then encourage start-ups by scientists who want to commercialise their research results. Similar to this is the provision of pre-seed and seed funding for research projects conducted by start-ups, which is then followed by more funding and commercialisation support if the prototypes have been developed successfully.

Table 2: Applicability of start-up promotion instruments in developing countries

No.	Type of instrument	Basic requirements	Suitable for country group	Specification/adaptation
1	Start-up grants	Effective (non-corrupt) programme administration, skilled programme managers	MICs	Focus on specific sectors and fields of technology, link with innovation promotion measures
2	Start-up loans (delivered directly by public bank)	Lack of efficient private banks; Effective (non-corrupt) administration	LICs and MICs	Restrict to start-ups with innovative business ideas
3	Start-up loans (delivered indirectly via private banks)	Presence of efficient private banks	LICs and MICs	Restrict to start-ups with innovative business ideas
4	Venture capital investment	Lack of VC companies, availability of exit options (trade sales, IPOs (Initial Public Offerings)	MICs	Specialise on sectors and technologies with comparative advantages, involve international investors
5	Refinancing/guarantees for private investment in start-ups (loans, VC)	Presence of efficient private banks and VC companies as well as guarantee banks	none	
6	Reduction of taxes/social security contribution for start-ups	Effective taxation has to be in place	none	
7	Legal and management advice	Basic skills in management among potential entrepreneurs; Presence of private advisory businesses; Openness to learning from others	LICs	Link with training programmes that focus on developing and testing innovative business ideas
8	Infrastructure supply for start-ups	Lack of/inefficient private office real estate market	MICs	Link to technology programmes and universities, use incubators to facilitate networking and formation of critical mass in certain sectors/fields

No.	Type of instrument	Basic requirements	Suitable for country group	Specification/adaptation
9	Marketing support for start-ups	Presence of start-ups with products to be marketed beyond local markets	LICs	Restrict to innovative products and services with potential to be internationally competitive
10	Awards for successful start-ups	Lack of attention/positive attitudes towards entrepreneurship	MICs	Focus on best practice cases that can serve as role models for other start-ups
11	Start-up competitions	Presence of a pool of entrepreneurs	LICs and MICs	Focus on innovation, maybe combine with innovation competitions
12	Training for entrepreneurs	Openness to learning from others	LICs	Focus on generating, developing and testing innovative business ideas
13	Teaching programmes on entrepreneurship skills	Well developed school system	LICs and MICs	Include innovation management and internationalisation topics
14	Virtual start-up projects at schools and universities	Secondary/high-school education that includes education on marketable knowledge	MICs	Use as part of wider initiatives to increase commercialisation activities at universities
15	Raising entrepreneurship attitudes amongst university graduates	Secondary/high-school education that includes education on marketable knowledge, capability of the university organisation	MICs	Link with financing instruments for start-ups
16	Public campaigns on entrepreneurship	Lack of attention/positive attitudes towards entrepreneurship	none	
17	Business angel networks	Presence of business angels	MICs	Check whether the business angel capacity is large enough to finance start-ups in technology sectors, maybe involve foreign business angels

Monitoring the progress of entrepreneurship

Table 1 includes a brief summary of typical instruments that can be used to monitor and evaluate the success of the various start-up measures. When implementing measures in developing countries, these monitoring approaches should be applied accordingly. A big challenge for any monitoring system in this field is to relate the direct outputs of the measure, which can be measured quite easily by the programme administration (e.g. number of start-ups funded, number of jobs created, survival of start-ups after a certain period of time, innovativeness of start-ups), to the available information about general trends in entrepreneurial activity, in order to determine the actual net effects of the measure. Some studies have used control group approaches based on the micro-data of start-ups, which can take much effort in terms of collecting data through surveys (Egeln et al., 2010). A more realistic approach in the context of development

cooperation would be to carry out a more qualitative evaluation of the funded start-ups by the means of a short questionnaire or telephone/e-mail interviews. Consulting publicly supported start-ups some time after their foundation (e.g. in their third year) can provide information about the challenges and barriers they faced at the outset, and could suggest ways in which public programmes could improve the support available. Data on the international orientation of these start-ups, the innovativeness of their products and services, the skills required of the employees, and the links they have to universities is all relevant for assessing their contribution to economic development. Some useful approaches to the monitoring and evaluation of entrepreneurship programmes in developing countries can be found in some recent evaluation studies (Corporate Links, 2010; Coucet, 2010; Johanse and Schanke, 2008; National Institute for Micro, Small and Medium Enterprises, 2008).

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Appendix

Start-up promotion programmes: examples from Germany

The following list presents examples of start-up promotion measures from Germany, corresponding to the different types of instruments listed in Table 1.

Name of the measure	EXIST-Gründerstipendium
Type of instrument	1. Grants for start-ups
Type of support	Assurance of personal living expenses through a scholarship, Operating expenditure, Coaching; for max. 1 year (money depends on graduation and/or team size)
Target group	Students (at least half way through studies), graduates (up to 5 years after graduation) and scientists from universities and research institutes who want to create a business plan out of their start-up idea
Eligibility criteria	Innovative, technology-oriented or knowledge-based idea for start-up with a good economic success opportunity, visit of a one-day 'Gründerpersönlichkeit' seminar, founder submits idea to university/institute, university has to be in start-up network supported by the regional business sector, coach has to process at least two business plan-presentations with the founder and correct it if necessary, applicant offers use of infrastructure for founder
Application process	Submission of a business plan to the Federal Ministry of Economics and Technology (BMWi) in written and electronic forms, university submits the application
Evaluation process	BMWi checks business plan
Monitoring process	Report by the enterprise after 5 months, showing business plan after 10 months
Organisation responsible	BMWi
Online information	http://www.exist.de/exist-gruenderstipendium
Name of the measure	KfW-StartGeld
Type of instrument	3. Loans for start-ups indirectly by public bank
Type of support	KfW offers financing of investments for start-ups, self-employed professionals and small enterprises up to EUR 100,000 with certain conditions for up to 5 or 10 years (max. 2 years grace period)
Target group	All forms of start-up by individuals; self-employed professionals and small enterprises (SME definition of the EU) which have been active in the market for less than three years
Eligibility criteria	Technical and commercial qualification of individuals, active co-entrepreneurship of applicant; heading for full-time earnings; no support for struggling companies
Application process	Submission of the start-up to KfW by the house bank
Evaluation process	Selection of applications by house bank

Monitoring process	Through standard contacts by public bank to borrower
Organisation responsible	KfW-Bankengruppe
Online information	http://www.kfw.de/kfw/de/Inlandsfoerderung/Programmuebersicht/KfW-Gruenderkredit-StartGeld/index.jsp

Name of the measure

High-tech Gründerfonds

Type of instrument	4. Venture capital investment
Type of support	Investment and coaching/support of management of start-up in seed to expansion stages; equity capital of up to EUR 500,000 in first round of funding (up to EUR 2 million in follow-up financing)
Target group	New technology-based firms (SME definition) or start-ups from Germany with an R&D core, not older than 1 year, less than 50 employees, max. net sales of EUR 10 million
Eligibility criteria	Creation of a business plan, technical and commercial qualifications, not older than a year, significant competitive advantage and market opportunities in the relevant market; own funds of 20 % (10 % in Eastern Germany) are required
Application process	4 stages: submission of a business plan which is created with the help of coaches; after evaluation of the business plan and a personal speech, a term sheet with investment conditions is offered; after signing the term sheet, the due diligence is initiated, where a committee checks the company in detail; after a last presentation by the start-up, a committee of 15 people decides on participation
Evaluation process	During term sheet stage, by committee
Monitoring process	VC company through standard contacts to the firm
Organisation responsible	High-Tech Gründerfonds Management GmbH
Online information	http://www.high-tech-gruenderfonds.de

Name of the measure

ERP-Beteiligungsprogramm

Type of instrument	5. Refinancing/guarantees for private investment
Type of support	Refinancing of VC investment through a low-interest loan which is guaranteed by a guarantee bank
Target group	VC companies located in Germany that invest in small companies, including start-ups
Eligibility criteria	VC company provides equity to an enterprise with an annual turnover of less than EUR 50 million in order to finance cooperation, innovations, restructuring, expansion or rationalisation of production or the start-up of a new enterprise; equity investment may not exceed EUR 1 million and may run up to 10 years (Eastern Germany 15 years); investment has to be guaranteed by a guarantee bank
Application process	VC companies apply through their house bank prior to equity investment, house banks forward applications to KfW
Evaluation process	Application is evaluated by KfW

Monitoring process	KfW requires enterprises to fill in a statistical form which can be used for evaluations
Organisation responsible	KfW Bankengruppe
Online information	http://www.kfw.de/kfw/de/Inlandsfoerderung/Programmuebersicht/ERP-Beteiligungsprogramm/index.jsp
Name of the measure	NeuFöG Österreich⁴
Type of instrument	6. Reduction of taxes/social security contribution
Type of support	Tax reduction (stamp duties, federal administrative levies, property tax etc. which occur at time of foundation)
Target group	Natural or legal persons that plan to start a new business, opportunity-based start-ups
Eligibility criteria	Creation of a new company structure with foundation of a commercial business; at least one individual in company, not only a change of the legal form or owner, no similar work performed by the founder in the last 15 years, official support for establishment, proof of basic entrepreneurial skills
Application process	Completed form (NeuFö 1) has to be sent to authority
Evaluation process	The authority checks the form
Monitoring process	No monitoring
Organisation responsible	Ministry of Finance of the Republic of Austria
Online information	http://www.wkw.at/docextern/spedi/spediteurehp/datein/neufoeg.pdf
Name of the measure	IHK Gründerberatung
Type of instrument	7. Legal and management advice
Type of support	Free of charge or low-cost consulting services (public or private organisations) for pre-seed and seed stage
Target group	Copycat start-ups
Eligibility criteria	No
Application process	Creation of a business plan
Evaluation process	Business plan is evaluated by the Chamber of Industry and Commerce (IHK) strengths and weaknesses analysis by IHK
Monitoring process	Report by the enterprise (6 months to 1 year after start-up)
Organisation responsible	IHK
Online information	http://www.ihk-startup.de/gruenderberatung.html
Name of the measure	Gründerzentren
Type of instrument	8. Infrastructure supply for start-ups
Type of support	Free of charge/low-cost rents (e.g. conference rooms, flexible rent of offices or telecommunication supply) plus commercial services, consultation and

⁴ There is no tax-related start-up measure in Germany, therefore a recent example from Austria is provided.

Target group	other services in a start-up centre for seed to expansion stage firms
Eligibility criteria	Opportunity-based start-ups and innovative, new technology-based firms
Application process	A viable business plan
Evaluation process	Public support to establish and run an incubator is typically provided by municipalities or regional governments. Many centres are either owned by local or regional authorities or funding is based on long-term contracts; there is no application process in the strict sense, rather local or regional initiatives promote the establishment of such centres
Monitoring process	The need for establishing and running a start-up centre is evaluated by local/regional authorities, often based on feasibility studies prepared by external consultants
Organisation responsible	Report by the management of the start-up centre
Online information	Bundesverband Deutscher Innovations-, Technologie- und Gründerzentren (ADT), Various organisations http://www.adt-online.de/zentren.html
Name of the measure	BMWi-Vermarktungshilfeprogramm
Type of instrument	9. Marketing support for start-ups
Type of support	Organising trade fairs/grants to start-ups to participate
Target group	Opportunity-based start-ups and copycat start-ups in expansion stage
Eligibility criteria	Market strength of the products or services and a certain demand in the country
Application process	Applications for participation in the projects have to be sent to the promoter
Evaluation process	Applications are evaluated by the promoters
Monitoring process	Report by the enterprise on additional sales due to marketing activities
Organisation responsible	BMWi
Name of the measure	Deutscher Gründerpreis
Type of instrument	10. Awards for successful start-ups
Type of support	Increasing competition and reputation with improvement of public awareness for start-ups; individual (media) coaching, access to the alumni-network and a 2-year sponsorship for all nominees
Target group	Opportunity-based start-ups and copycat start-ups in pre-seed stage, which are not older than 3 years
Eligibility criteria	Viable business plan, secured financing, complete management team, successful market entry and development
Application process	Selection by over 300 experts
Evaluation process	From the submitted proposals, the jury will select the three best companies as nominees. The winner is chosen after a last presentation by all the nominees
Monitoring process	Change in the number of start-ups in the whole economy

Organisation responsible	Deutscher Gründerpreis
Online information	http://www.deutscher-gruenderpreis.de

Name of the measure**Gründerwettbewerb Multimedia**

Type of instrument	11. Start-up competitions
Type of support	Successful applications receive an award, coaching by experts (strategy workshops, certain seminars), qualifying offers and a grant. At each round of competition, six start-up ideas are awarded with a EUR 30,000 grant (6,000 immediately, 24,000 when the company is up and running), and 15 other firms get EUR 6,000
Target group	Opportunity-based start-ups and new technology-based firms in pre-seed stage
Eligibility criteria	Inhabitants of Germany who plan to start a new business, foundation of a company with given idea only allowed for the last 4 months, sketch of idea from 10 to max. 15 pages with description of first time plan, potential customers, technical and commercial expertise of founder, target market and competitors
Application process	Registration on website where it is possible to upload the sketch as a PDF; Submitting temporary business plan
Evaluation process	Business plans/idea sketches are evaluated by a jury with independent scientists and economics. Start-ups get feedback by jury regarding strengths, weaknesses, opportunities and risks
Monitoring process	Impact analysis by VDI/VDE-IT with help of a survey (participants in the competition have to take part)
Organisation responsible	BMW i
Online information	http://www.gruenderwettbewerb.de

Name of the measure**Gründercoaching Deutschland**

Type of instrument	12. Training for entrepreneurs
Type of support	Financial aid for coaching on economic, financial and organizational issues in the first five years of a business to increase the willingness to found start-ups (50% (75% East Germany) participation, 90 % for start-ups out of unemployment)
Target group	Copypat start-ups and start-ups by unemployed in pre-seed stage; no struggling firms, consultants, agricultural production and fishing
Eligibility criteria	Creation or takeover of a company in the past five years by entrepreneurs; no combination with other KfW-promotions; max. amount paid for coaching is EUR 6,000 (EUR 800 per day)
Application process	5 Steps: 1. Choice of a personal consultant on the KfW consultants exchange, 2. Application form filled out online, 3. Printed form is sent to regional KfW partner who checks if the formal and substantive conditions are good for a promotion and sends the application together with his decision to KfW, 4. After the KfW has sent the approval, the coaching contract is drawn up, 5. After coaching, the coach will write a final report. This and the bills are sent to KfW not later than 12 months after approval

Evaluation process	After coaching, the coach will write a final report. KfW checks bills and bank statement
Monitoring process	Standardised final reference
Organisation responsible	KfW-Bankengruppe
Online information	http://www.kfw.de/kfw/de/Inlandsfoerderung/Programmuebersicht/Gruendercoaching_Deutschland/index.jsp

Name of the measure

Initiative Gründungslehrstühle

Type of instrument	13. Teaching programmes on entrepreneurship skills
Type of support	Political (and partially financial) support for the establishment of chairs of entrepreneurship and teaching programmes for entrepreneurship at universities, financial support was limited to some of the costs for establishing a chair and a teaching programme, but not for ongoing expenses
Target group	Directly: universities that wish to improve their entrepreneurship education; indirectly: academics specialised in entrepreneurship management; students who are interested in establishing their own business
Eligibility criteria	The initiative (which ended in about 2005) was mainly a political one to encourage universities to establish entrepreneurship chairs and study programmes with only little financial stimulus. It was mainly the decision of the universities to introduce such chairs, using the available funds, sometimes complemented by external funding
Application process	No application process
Evaluation process	Lectures are evaluated by students, activity of chair is evaluated by the university
Monitoring process	Change in the number of start-ups by university graduates
Organisation responsible	BMWi, Förderkreis Gründungs-Forschung (FGF)
Online information	http://www.fgf-ev.de

Name of the measure

TRACE, FH Aachen

Type of instrument	14. Study programme for start-up projects at schools and universities
Type of support	Combination of formal education (lectures, seminars), creative trainings (generating ideas in team workshops etc.) and practical projects (participation in start-ups); raising awareness of entrepreneurship; teaching of soft skills and 'founder knowledge'; 2 semesters during studies
Target group	Students (15 per semester) of all subjects who are interested in creating a start-up
Eligibility criteria	Being a student at FH Aachen (Aachen University of Applied Sciences)
Application process	A transcript of grades, a CV and a motivation letter via e-mail at the beginning of every semester
Evaluation process	Application is evaluated by the chair
Monitoring process	Change in the number of start-ups in the whole economy, reports by students
Organisation responsible	FH Aachen

Online information	http://www.win.rwth-aachen.de/lehre/lehrveranstaltungen/trace-gruenderprogramm
Name of the measure	EXIST-Gründungskultur (Gründerhochschule/EXIST 3)
Type of instrument	15. Improving entrepreneurial attitude among university graduates
Type of support	Financial support for universities to establish a culture of entrepreneurial independence in their teaching strategy to strengthen the commercial thinking of students; up to 5 years of support (evaluation of progress after 3 years by a jury, then decision on the next 2 years of sponsorship); up to 3 universities are honoured with the title 'EXIST-Gründerhochschule'
Target group	Public and private universities and research institutes that are interested in developing and using the growth of start-up potentials
Eligibility criteria	Participation of start-up-network, coaching by university has to be guaranteed (to presentations by founder are checked), no combination with other programmes
Application process	Step 1: First sketches of idea are evaluated by BMWi and PtJ (20 universities are chosen). Step 2, concept phase: elaboration of a concept which should develop the (foundation-related) overall strategy; design of appropriate administrative structures; improvement of appropriate quality management; concrete implementation plan. Step 3, project phase: the operational implementation of the elaborated concept and the establishment of the foundation-related strategy
Evaluation process	BMWi and PtJ check applications before concept stage, then a jury tests the strategic concepts of the 20 remaining universities after the project phase
Monitoring process	A jury checks the progress of the start-up after three years (project stage 1)
Organisation responsible	BMWi
Online information	http://www.exist.de/exist-gruendungskultur/gruenderhochschule/index.php
Name of the measure	Gründerland Deutschland
Type of instrument	16. Public campaigns on entrepreneurship
Type of support	Wide range of campaigns to improve knowledge about founding (at schools, universities etc.): advertising, information events (Gründerwoche Deutschland - 'German Founders Week'), internet platform (existenzgruender.de), improve chances to restart after failing with first start-up
Target group	All individuals who are interested in building a start-up
Eligibility criteria	No financial measure, therefore no eligibility criteria
Application process	None
Evaluation process	None
Monitoring process	Change in the number of start-ups in the whole economy
Organisation responsible	BMWi, Deutscher Industrie- und Handelskammertag (DIHK), Zentralverband des Deutschen Handwerks (ZDH), Bundesverband der freien Berufe (BFB)
Online information	http://www.bmwi.de/BMWi/Navigation/Mittelstand/existenzgruendung.html

Name of the measure	Business angel networks (BAND)
Type of instrument	17. Business angel networks
Type of support	Financial support (between EUR 50,000 and EUR 1 million) and free management/consulting support by BAND (40 networks in Germany), BAND makes profit from its company shares
Target group	Opportunity-based, innovative start-ups/new technology-based firms in seed or start-up (to have the opportunity to intervene) stage with an outstanding chance to grow economically
Eligibility criteria	Technical, commercial and personal skills and a determination to lead a company to success; a complete business plan with great earning prospects and solvable financing issues; BAND expects start-ups to know what their market wants, and what the business angels can do for them
Application process	Application with a one-page proposal, sent to BAND via email
Evaluation process	Through participating by business angels
Monitoring process	Business angels through standard contacts to the firm
Organisation responsible	BMWi, BAND
Online information	http://www.business-angels.de

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