



Final Policy Brief 1

Policies in support of high-growth innovative enterprises

**Deliverable 3-1:
Characterisation of innovative high-growth firms**

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About this document

This document is a final Policy Brief 1 about characteristics of high-growth innovative enterprises (HGIEs). Together with Policy Brief 2 about "Policy measures to improve the conditions for the growth of innovative enterprises", it constitutes the final Deliverable in a study on behalf of the European Commission's General Directorate Research and Innovation about "Policies in support of high-growth innovative enterprises (HGIEs)".

This policy brief mainly reports on findings from a computer-assisted telephone interview (CATI) survey of HGIEs that took place in March 2013.

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Executive Summary

Background and objectives

There is evidence that high growth innovative enterprises (**HGIEs**) **contribute decisively to job creation**. However, there is a lack of knowledge about HGIE characteristics and policies that could support them. This study contributes new insights for both aspects.

Methodology

Results in this policy brief are mainly based on a survey of HGIEs in 36 innovative industries in eight countries: Germany, France, the United Kingdom, Poland, Switzerland, the USA, Republic of Korea and Japan. The **sample included 580 HGIEs**. The survey targeted companies whose number of employees had grown at least one third over three consecutive years in the past five years. For Poland, the target was 22% over two years due to data limitations. Only internal (organic) growth was considered; growth due to mergers and acquisition was not included. The size threshold was ten employees at the beginning of the growth period. The **data universe for sampling included 4% HGIEs**.

HGIE characteristics

Age: The majority of HGIEs in the sample were older than ten years. This applied to all countries and sectors. Thus, high growth is apparently not a start-up phenomenon but takes place after the initial struggle of establishing the enterprise in the market. Moreover, in the vast majority of HGIEs high growth started in the past ten years.

13% of the responding firms were found to be **spin-offs**. Most of them (68%) originated from other companies. This might question the current political focus on spin-offs from public research – or call for enhanced policy measures to support such spin-offs.

The dominant type of **customers** of HGIEs in the sample are other companies. Many HGIEs may thus not be known to the public because they do not sell to households.

For the majority of HGIEs the **national market** is the main market. Many HGIEs may thus have a potential to grow further into international markets.

The main **factors of high growth** appear to be a skilled workforce and directors actively targeting growth. This applies to all countries and almost all sectors. Successful product or service innovation is also important and apparently triggered by strong competition.

Three **barriers** were found to be most severe: (1) Bureaucratic hurdles and regulation, (2) difficult access to finance, and (3) finding skilled employees. This applies to all countries and sectors, while there are also national and sectoral specificities.

National specificities

Germany had the highest share of HGIE spin-offs with multiple origin. **France** had the largest HGIE share in the sampled countries. The **UK** had the largest share of spin-offs (19%, average 14%). Bureaucracy and regulation were found to be the single most important growth barrier in **Poland**. The share of young HGIEs was found to be largest in the **US** (21%, average 14%). In **Korea**, policy preferences for big business seem to be a specific barrier to growth. Access to finance was apparently not a problem for HGIEs in **Japan**. No notable specificity can be reported for **Switzerland**.

Sectoral specificities

In the data universe the **shares of HGIEs per industry** do not differ much. In all industries with a sufficient number of cases the shares were not higher than 7%.

Growth in **manufacturing and services** is partly driven by different factors: highly skilled employees were judged as more important by service companies, whereas entering new international markets was more important for manufacturers. However, each innovative industry appears to have its own distinct profile of growth factors.

1 Introduction: lack of knowledge about HGIEs

There is scientific evidence that high growth innovative enterprises (HGIEs) contribute decisively to job creation, innovation and economic growth. Their share in all enterprises is small, but the share of jobs they create is disproportionately large (e.g. Autio et al. 2007; Stangler (2010); WEF 2011). In particular, knowledge-based start-ups appear to grow faster than other start-ups (Czarnitzki et al. 2013, Ramboll/Creditreform 2012, p. 11). However, Europe has apparently performed relatively badly in generating HGIEs that quickly become global leaders. Thus, in recent years, policy makers in Europe have shown increased interest in fostering HGIEs. However, there is still a **lack of knowledge** about characteristics of HGIEs, the framework conditions under which they thrive, and policies that could possibly support their emergence and enable them to thrive. This policy brief aims to contribute to filling the gaps in such knowledge.

As regards the **structure** of this document, following this introduction (chapter 1), the methodology for this document is explained in chapter 2. Chapter 3 presents the main findings of a computer assisted telephone interview (CATI) survey which was conducted specifically for this study. The main distinction in data presentation is between countries and sectors. Finally, chapter 4 draws conclusions and provides an outlook.

Extended analyses are presented in an **annex**, facilitating follow up aspects that might remain unclear in the shorter main text.

2 Methodology: CATI survey as main data source

2.1 A framework for analysing enterprise growth

Characteristics and **factors of enterprises' development** can be subdivided into issues related to the personality of the entrepreneur, the business requirements of the enterprise, and the environment in which the enterprise operates. These aspects were taken up in conceptualising this study.

There is a vast array of literature about the **personality** of entrepreneurs. Research up to now has not come to an agreement about exactly which personal traits of entrepreneurs are conducive to enterprise growth. However, there are strong indications that particular personal characteristics are correlated with positive enterprise performance.¹

The **enterprise** as such can be characterised by the demographic characteristics of age, size, the economic sector in which it operates and its origin, e.g. as spin-off. Secondly, it can be characterised by the approaches it takes to fulfilling business functions, e.g. innovativeness, main type of customers, main geographic sales area, and ways of acquiring capital. The level of innovation orientation in fulfilling these functions is particularly important for this study.

An enterprise also depends on the **framework conditions** in which it operates, i.e. given situations which a single firm needs to take as they are because it cannot influence them: economic framework conditions such as the business cycle (with the extremes boom or recession) and the level of competition; political framework conditions in terms of bureaucratic requirements, regulation, taxation and support policies; and socio-cultural framework conditions such as attitudes towards entrepreneurship.

¹ See Obschonka et al. (2013) for a recent analysis of the prevalence of entrepreneurship-prone personality profiles in three of the countries covered by this study, Germany, the UK and the US.

2.2 Primary data collection

Sampling

The sampling was required to take place across **36 three-digit NACE categories** (“Nomenclature statistique des activités économiques dans la Communauté européenne”, the statistical classification of economic activities in the European Community), as listed in Annex 1 of this document. In a joint effort, the EC and the OECD had identified these 36 sectors as being particularly innovative. However, firms in other sectors may by all means also be innovative. The survey covered eight countries: Germany, France, the United Kingdom, Poland, Switzerland, the USA, the Republic of Korea (in the following simply “Korea”) and Japan. The survey thus included four of the largest European Member States (accounting for 49% of EU-28 population and 54% of EU-28 GDP) and four other countries which are among the main trading partners and competitors of the EU.

The survey targeted firms whose number of employees had grown at least one third over a period of three years in the past five years. For Poland, the target was revised to 22% in the past two years in order to be able to find a reasonably high number of enterprises qualifying for the survey. Only internal growth of enterprises was considered; enterprises which had grown due to mergers or acquisition were not included. The size threshold for enterprises to be included was **ten employees at the beginning of the growth period**. Thus the survey deliberately excluded micro enterprises which constitute more than 90% of firms in the EU (non-financial business economy, Eurostat figures for 2009). The targeted interviewees were directors or senior managers in smaller companies as well as managers in charge of strategy and planning in larger companies. Address data was acquired from Dun & Bradstreet (except for Japan, see Annex 1), which may offer some of the most comprehensive and reliable data on an international level. The data universe, i.e. all firms in the database, included 17,080 HGIEs, which was 4% of all firms.

Questionnaire, fieldwork and sample

The questionnaire for the HGIE CATI survey (see annex 3) had three main parts: drivers and barriers of growth, impact of governmental policies, and background information about the company. The questionnaire was pretested in Germany in early February 2013 and then very slightly modified. CATI survey fieldwork took place in March 2013 (by Ipsos) except for Japan (April to July 2013, by Dennis Tachiki, Tamagawa University).

The sample includes 580 enterprises: Germany (100), France (99), UK (84), Poland (49), Switzerland (39), USA (150), Korea (44), and Japan (15). Due to the small number of cases, further data breakdowns are generally not meaningful for Japan. In the survey, cases were collected in 32 of the 36 three-digit NACE categories (see annex 1). The number of HGIEs per NACE category differs widely, reflecting the number of all enterprises in the categories. In ten NACE categories, the number is at least 15 cases which the study team set as a tentative threshold for a breakdown by certain indicators.

2.3 Secondary statistics

There are as yet no solid official statistics about HGEs or HGIEs. The OECD’s Entrepreneurship Indicators Programme (EIP) provides data about HGEs which may be taken as a proxy for data about HGIEs. Data are available for 15 countries, divided by manufacturing and services. Of the eight countries included in this study, only the US was included in the OECD data. Eurostat is also developing HGE statistics. At the time of writing this report, their dataset comprised 13 countries, of which France is also dealt with in this study. Hence a comparison of the seven countries with official data is not possible here. In any case, official data would not offer specific HGE characteristics as included in the CATI survey analysed here.

3 HGIE characteristics

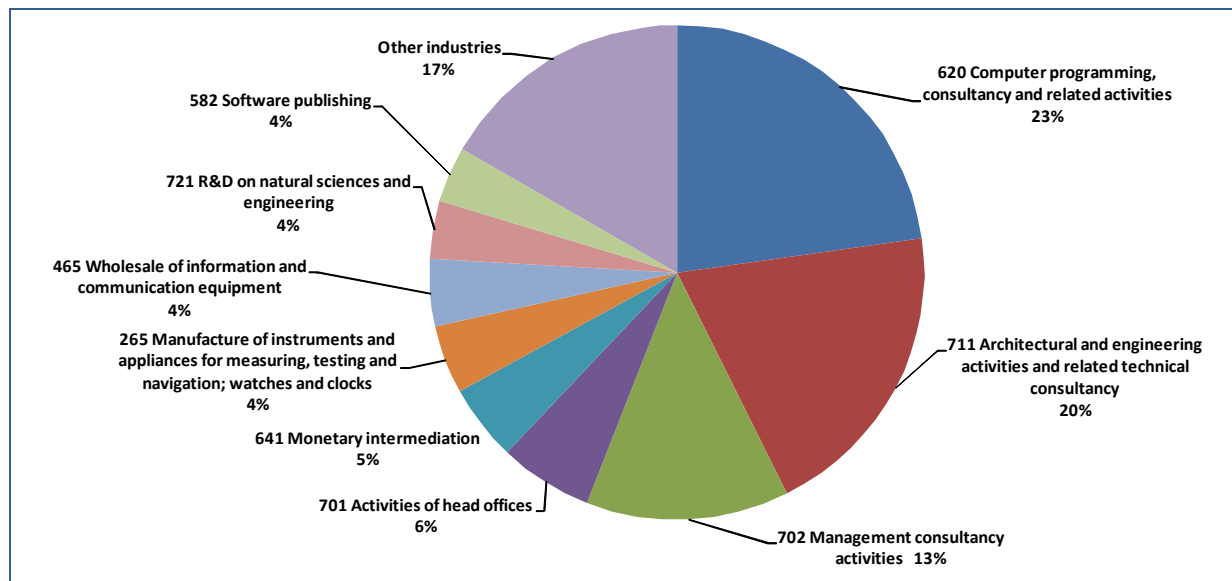
3.1 Characteristics of HGIEs in the sample

3.1.1 Enterprise specificities

Industries

Three industries were found to dominate the universe of enterprises as well as the universe of HGIEs: NACE 620 Computer programming; 702 Management consulting; and 711 Architectural and engineering activities. More than half of the HGIEs (56%) stem from these three industries. Exhibit 3-1 shows the largest industries; all others are subsumed.²

Exhibit 3-1: Overview about ten sectors with the largest share of HGIEs in data universe



Source: Dun & Bradstreet address universe for DE, FR, UK, PL, CH, US, KR. HGIE survey 2013.

Size classes

As in the data universe, the majority of HGIEs in the sample (58%) are small, i.e. they had between 10 and 49 employees. There was also a considerable share of medium-sized HGIEs (33%) but only a small share (9%) of large HGIEs. Notably, in the data universe the shares of medium-sized and large HGIEs were larger than the related shares of all enterprises in the selected sectors; for small enterprises it was the other way round. This may indicate that for many enterprises at least medium size is required to take off for high growth, which may be due to a necessary level of economies of scale and scope.

Company age

The majority of HGIEs in the sample are older than ten years: 59% of the HGIEs were founded between 1988 and 2003. 24% were founded before 1988, 14% between 2004 and 2008, and only 2% after 2008 (which means founded in 2009 so that the companies qualify for three years of consecutive growth until 2012). The share of HGIEs founded before 2004 in all HGIEs is larger than the share of all innovative enterprises founded before 2004 across all enterprises; i.e. older HGIEs were overrepresented. Apparently, high growth is generally not a start-up phenomenon but may take place once the initial struggles of establishing the firm in the market have been overcome. The share of younger HGIEs might be larger if firms with less than 10 employees were included.

² Excluding Japan because the data universe covered selected regions, not the whole of Japan.

Year when fast growth started

46% of the HGIEs said their high growth started recently, after 2008. Almost the same share (44%) stated that their high growth started between 2004 and 2008. The share of HGIEs saying their high growth started in the period of 1999-2003 (7%) or 1998 or earlier (3%) was considerably smaller. Thus, **growth of the vast majority of HGIEs started in the past ten years.**

Moreover, while HGIEs constitute a small share of all firms, there appears to be a small share of HGIEs achieving continuous high growth for more than ten years. Characteristics of HGIEs stating that their high growth started before 2004 were found to be the following: Their largest share is among medium-sized enterprises (50-49 employees); the share in EU-4 is larger than in sample countries outside the EU; highest shares in all HGIEs were found in France (18%) and Germany (12%); and their share is considerably larger in the services sector (12%) than in manufacturing (5%).

HGIE characteristics by type of company: spin-offs

The interviewees were asked "When your company was founded, was it based on research findings from another organisation?" **14% of the responding enterprises were found to be spin-offs.** Those interviewees who said "yes" were asked whether this other organisation was a university, a public research organisation other than a university, or another company. 25% of the spin-offs originated from a university, 17% from a public research organisation, and **71% from another company.** These shares amount to more than 100%, indicating that a certain share of the HGIEs spun out from different types of organisations, e.g. as an outcome of joint research. The relatively small share of spin-offs from universities may be due to persistent barriers to this type of knowledge transfer from public research to the business sphere.

Main customer groups

The interviewees were asked how much of their total sales of products or services was sold to certain customer groups. It turned out that **other companies are the dominant customers of HGIEs in the sample.** The average percentage of products or services sold to other companies was 70%, while the average percentage for households was only 9% and for the public sector 21%. This may support the idea that many HGIEs are "hidden champions", i.e. market leaders or forthcoming leaders that are not known to the wider public because they do not sell to households.

Most significant sales market

The interviewees were asked what their company's most significant sales market is: mainly the regional market, the national market, or international markets. It turned out that for the majority of HGIEs (57%), the national market is the main market. Further, 25% stated that their main market is international, and only 17% said that their main market is regional. Even among firms with more than 249 employees, the share of firms mainly selling to international markets is only 33%. These figures show that **many HGIEs may have a potential to grow further into international markets.**

Venture capital and private equity funding

The companies were asked whether their assets include private equity (PE) or venture capital (VC).³ This question was meant to find out how important these types of external

³ For definitions see <http://evca.eu/what-is-private-equity> (last accessed 7/6/2013): "Private equity is a form of equity investment into private companies that are not quoted on a stock exchange. Private equity (...) seeks to deliver operational improvements in its companies (...). Venture capital is a type of private equity focused on start-up companies."

finance are for high growth. It turned out that 25% of the companies had private equity investments, and 12% venture capital. PE and VC investment is similar across size classes and in manufacturing versus service sectors. While such assets affect only a minority of HGIEs, **the shares of VC and private equity may be higher than in the universe of firms**, i.e. including non-innovative industries (compare with OECD 2013, p. 91, “venture-backed companies’ rate”).

Companies that are part of an international enterprise group

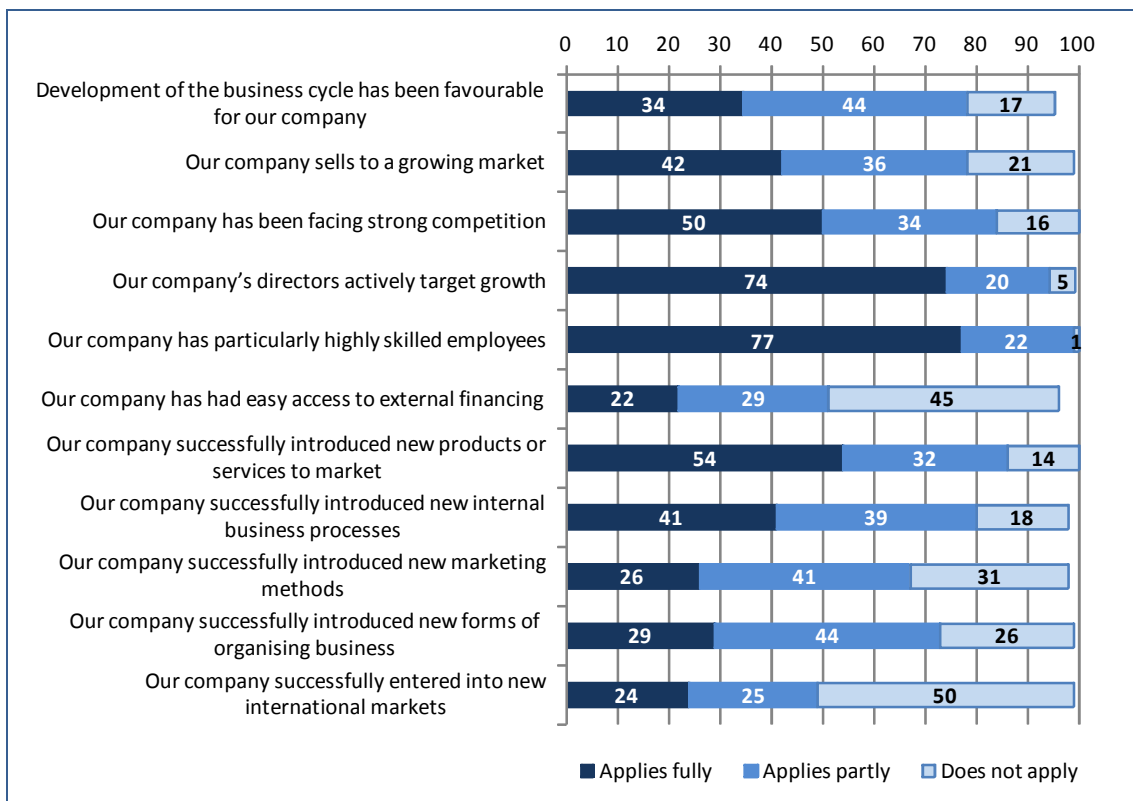
15% of the interviewees said that their company is part of an international enterprise group. In firms with more than 249 employees the share was 33%. These interviewees were asked to “answer all further questions about the activities of your company only for this business in [your country], not for the entire group, to the extent that a distinction is possible”.

3.1.2 Factors and barriers for growth

Drivers and barriers of growth

The interviewees were asked about the reasons for the growth of their company in the past five years. They were presented with eleven items and asked to assess whether they apply fully, partly or not at all to their company. From these answers one can draw conclusions about drivers and barriers of the companies’ growth.

Exhibit 3-2: Reasons for growth in HGIEs (whole sample) in %



Source: empirica, HGIE survey 2013

Two characteristics stand out as fully applying to three quarters of the HGIEs in the sample: “our company has particularly highly skilled employees” (77% “applies fully”) and “our company’s directors actively targeted growth” (74% “applies fully”). Against the indicators asked in the survey, **the main factors of high growth appear to be a skilled workforce and directors actively targeting growth.**

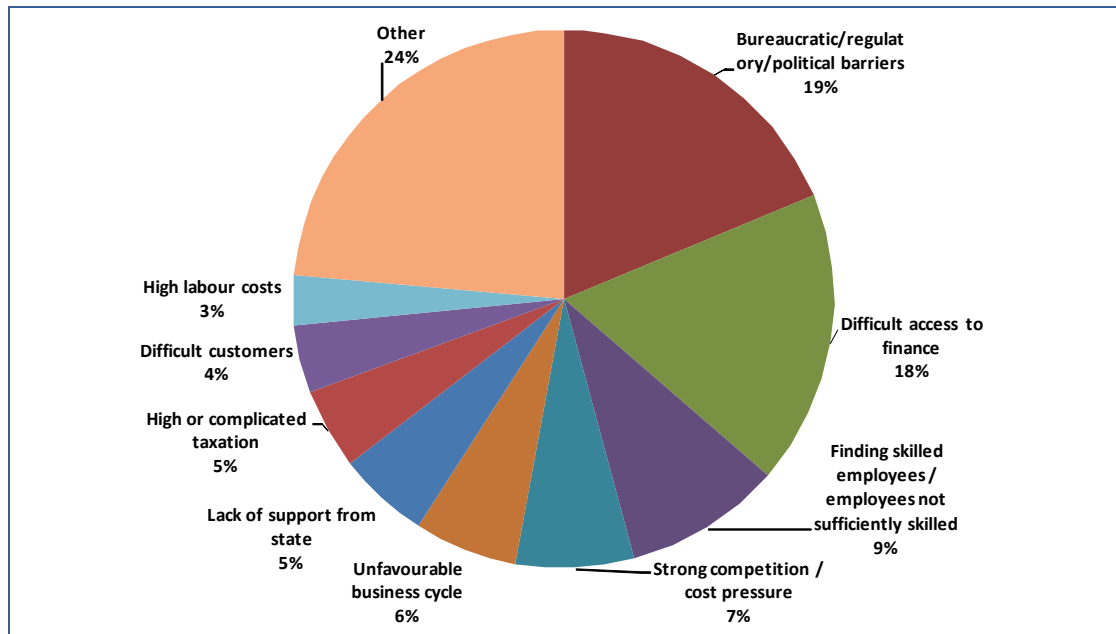
Further two items were found to apply fully to the majority of HGIEs: 54% “successfully introduced new products or services to the market”, which means that product or service innovation may be decisive for high growth. 50% fully agreed that the company has been facing strong competition, which means that HGIEs’ success is not easily achieved.

At the other end of the scale, the lowest share of answers of “applies fully” (22%) was found for “our company has had easy access to external financing”. **Access to finance may be the most severe barrier to growth.** However, the figures may also indicate that difficult access to finance did not hamper high growth of the enterprises, or that access to finance was not important. Furthermore, entering new international markets (24% “applies fully”), new marketing methods (26% “applies fully”) and new forms of organising business (29% “applies fully”) were found to not be particularly important.

Perceived main barriers to growth

The interviewees were asked an open-ended question about barriers to growth: “In a few words: What is in your opinion the main obstacle in [your country] for innovative companies to grow?” The interviewees mentioned 674 single items; multiple answers were counted. The answers were coded into groups. Exhibit 3-3 shows the nine most important groups and a bulk group for other items.

Exhibit 3-3: Perceived barriers for HGIEs’ growth – share of barriers in % of all answers



Source: empirica, HGIE survey 2013

Across all countries in the sample the most important barriers appear to be in two areas: bureaucracy, regulation and political issues (including e.g. “administrative hurdles” and “frequently changing political requirements”), comprising 19% of the answers, and difficult access to finance (18%). The third most important barrier reflects a key reason for growth found in question D2: finding skilled personnel as well as currently insufficiently qualified employees (9%). Further items that were frequently stated include strong competition or cost pressure (7%), an unfavourable business cycle (6%), lack of support from the state (5%), high or complicated taxation (5%), difficult customers (4%) and high labour costs (3%). Beyond these nine items, almost a quarter (24%) of the answers were related to other barriers such as difficult or weak marketing, high risk or lack of willingness to take risks, the interviewee him- or herself or the directors. Notably, unfavourable cultural attitudes were mentioned only four times (0.6%). There were also 14 respondents (2%) who said that there are no barriers.

3.2 HGIE characteristics by country

3.2.1 Synopsis: main commonalities and differences between the countries⁴

Differences between EU and non-EU countries

There are some particularities within the countries which lead to differences between EU4 and non-EU countries, most notably for “reasons for growth”. Differences of more than 5 percentage points apply for five of eleven issues: HGIEs in EU4 were less prone to face “strong competition” (EU4 47% “applies fully”, non-EU 53%); relied stronger on “particularly highly skilled employees” (EU4 79% “applies fully”, non-EU 72%); had a smaller share of “easy access to external finance” (EU4 18% “applies fully”, non-EU 27%); relied more on successful introduction of new products (EU4 57% “applies fully”, non-EU 51%); but had a smaller share of successful introduction of new forms of organising business (EU4 26% “applies fully”, non-EU 33%). (See Exhibit 6-1 in Annex 3, beginning of chapter 6.) There are also slight differences with regard to the articulated “most important barriers”. (See Exhibit 8-1 in Annex 3, beginning of chapter 8.)

Industries

The shares of HGIEs within a certain industry and country were fairly in line with the shares of enterprises in these industries within the universe of enterprises in that country. In other words: There was hardly any country-industry with a particularly high share of HGIEs. No industry in any country (with a sufficiently high number of cases) was found to have a share of HGIEs at least 10% and at least twice as high as the overall share of HGIEs. Notable deviations from the average (more than 50%) include the industry of “Manufacture of optical instruments and photographic equipment” in Germany (14% HGIEs, n = 32), as well as Manufacture of pharmaceutical preparations (35%, n = 69) and Manufacture of air and spacecraft and related machinery (34%, n= 36) in France.

Size classes

In all countries the majority of HGIEs are small (between 10 and 49 employees). There is a considerable share of medium-sized HGIEs but only a small share of large HGIEs. The share of medium-sized HGIEs is larger than the share of medium-sized enterprises in the data universe; for small enterprises it is the other way round.

Enterprise age

In all countries, the vast majority of HGIEs is older than ten years and most were founded between 1988 and 2003. The share of younger HGIEs, i.e. founded after 2003, is largest in the US (21%). The US and Japan are the only countries where firms founded after 2008 are included in the sample. Poland has the second largest share of younger HGIEs (16% founded 2004-2008). In most countries about nine out of ten HGIEs were founded before 2004: UK (90%), France and Germany (89% each) and Switzerland (88%).

Growth factors and bottlenecks

When considering the whole sample, “our company’s directors actively target growth” and “our company has particularly highly skilled employees” were found to be the most important reasons for growth in all countries surveyed. Poland was the only country where companies’ directors actively targeting growth (94% “applies fully”) was more important than highly skilled employees. The highest share of HGIEs with “highly skilled employees” was found in Switzerland (90% “applies fully”). Easy access to external finance was found to be the item with the lowest shares of agreement in four countries: Germany (17% “applies fully”), the UK (12%), Poland (14%), and Switzerland (23%).

⁴ This section does not include data breakdowns for Japan because the sample size was too small.

The highest share of HGIEs fully agreeing that access to external finance was easy was found in Korea (30%). Korea was, however, also the country with the lowest share of HGIEs fully agreeing that the “development of the business cycle has been favourable for our company” (11%).

Spin-offs

The highest share of spin-offs in the sample, 19%, was found in the UK. The share of spin-offs was lowest in the US (9%). The share of spin-offs with multiple origins was found to be highest in Germany, followed by Poland and Switzerland.

Companies part of international enterprise group

The largest share of companies that are part of an international enterprise group was found in Korea (30%), followed by France (20%). The lowest shares were found in the UK and Switzerland (10% each).

Year when high growth started

In all countries, in the vast majority of HGIEs, high growth was found to have started in the past ten years. In some countries (Germany, UK, US) the share was higher for the period after 2008, in the other countries the share was higher for 2004-2008.

Main customer groups

In all countries, other companies are the main customer group, differing between an average share of 67% sold to businesses in Poland and 79% in France. Furthermore, the public sector is the second most important customer group in all countries. France has the lowest average share in this respect (16%) and the US the highest (27%). Private households are the least important customer group in all countries.

Most significant sales market

In all countries the national market was found to be most important, differing between 53% in Poland and 68% in Korea. The international market was second most important in Germany (35%), France (24%) and Korea (30%). The regional market was found to be second most important in Poland (27%) and the US (21%).

Private equity and VC

The role of private equity and venture capital (VC) in HGIEs was found to differ between the countries. Polish HGIEs reported an exorbitantly high share of private equity (67%), followed by the UK (41%) and France (28%). Private equity was found to be particularly low in Korea (7%) as well as Germany and Switzerland (13% each). VC was found to be most frequent in Korea (18%) and Switzerland (13%), while the share in the UK was astonishingly low (5%) considering that the UK is the most developed market for VC in Europe. In any case the share of VC-backed HGIEs is much higher than the share of VC-backed firms at large which is normally below 1 in 1000 firms (OECD 2013, p. 91).

Comparison of typical HGIE profiles

Some peculiarities apply to the profiles of typical HGIEs in the sample countries. Germany has a relatively large share of HGIEs in manufacture of instruments and appliances, reflecting the relatively large share of enterprises in this sector in Germany. In France, HGIEs were found to be well represented in various manufacturing industries. Poland has a relatively large share of HGIEs – and also enterprises at large – in monetary intermediation. In Switzerland, the sector with the highest share of HGIEs is manufacture of motor vehicles. While UK HGIEs were found to be a bit older than other firms, it appears to be the other way round in the US.

3.2.2 Germany

HGIE and sample characteristics in Germany

Sectors: The German sample includes HGIEs from 15 sectors, most of them from five NACE categories with 15 firms each: 265 Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks; 620 Computer programming, consultancy and related activities; 702 Management consultancy activities; 711 Architectural and engineering activities and related technical consultancy; 721 R&D on natural sciences and engineering. In the other sectors the highest number of cases is 6.

Size-classes: 62% of the HGIEs in the German sample have 10-49 employees, 29% have 50-249 employees, and 9% have more than 249 employees. The share of 9% for large firms is the second highest of the countries in the sample.

Age / start of high growth: 66% of the German HGIEs were founded between 1988 and 2003, 23% were founded before 1988, and 9% were founded between 2004 and 2008. The sample included no firms founded after 2008. In almost half of the HGIEs in the German sample (48%), high growth started after 2008. This is the third highest percentage for this period of the eight countries, possibly reflecting Germany's quick recovery from the economic crisis.

Spin-offs: 11% of the German HGIEs were spin-offs, thereof 55% from universities, 45% from other PROs, and 55% from other companies. This means that many spin-offs are based on research findings from different types of organisations, possibly joint research.

Factors and bottlenecks for HGIEs' growth in Germany

Growth factors: The single most important factor for growth mentioned by the German HGIEs is that the company has particularly highly skilled employees (82% "applies fully", 17% "applies partly" and only 1% "does not apply"). The second most important factor mentioned was that the companies' directors actively target growth (70% "applies fully" and 23% "applies partly"). Successful introduction of new products or services is the third most important factor (59% "applies fully", 31% "applies partly"). On the other hand, introducing new forms of organising business does not appear to be particularly important (17% "applies fully" but in quite a high share of 47% it "applies partly"). Access to finance appears to be the single most important barrier (53% did not agree that they have easy access). For more details see Exhibit 5-1 in the Annex.

Main obstacles: The interviewees perceived three "main obstacles" for growing an innovative company in Germany: Finding skilled employees or the firm's employees are not sufficiently qualified (stated by 19%), bureaucratic or regulatory hurdles (18%), and difficult access to finance (17%). 9% mentioned strong competition or cost pressure. 4% said there are no barriers. Beside these barriers there were a multitude of other issues, e.g. the business cycle, difficult customers, "oneself" (i.e. the interviewed manager), lacking vision of directors, high labour costs, social security law and labour law, and public agencies preferring vendors with which they have established business connections.

Typical HGIE profiles in Germany

In Germany no innovative sector had an outstandingly large share of HGIEs (maximum share 14%). More than half of the German HGIEs stem from three industries: (1) computer programming, (2) architectural and engineering activities, (3) manufacture of instruments and appliances. In these industries most enterprises and HGIEs are small, but in computer programming as well as architectural and engineering activities apparently a medium size is often favourable for taking off for high growth. Furthermore, in these three industries most enterprises, as well as HGIEs, are between 10 and 25 years old; HGIEs are over-represented in this age group.

3.2.3 France

HGIE and sample characteristics in France

Sectors: The French sample includes firms from 10 sectors, most of them from four sectors with 15 cases: wholesale of ICT equipment (NACE 465, for which France is the only country with 15 cases), NACE 620 "Computer programming, consultancy and related activities", NACE 702 "Management consulting activities", and NACE 711 "Architectural and engineering activities and related technical consultancy". France contributed the single highest number of interviews in software publishing (NACE 582) to the sample, 12 cases.

Size-classes: 55% of the HGIEs in the French sample have 10-49 employees, 37% have 50-249 employees, and 8% have more than 249 employees. France has an above average share of medium-sized firms and a below-average share of small firms in the sample.

Age / high growth start: The majority (60%) of the French HGIEs were founded between 1988 and 2003. 29% were founded before 1988, which is the highest share in the sample. 11% were founded between 2004 and 2008. The sample included no firms founded after 2008. In almost half of the HGIEs in the French sample (45%), high growth started between 2004 and 2008. Most strikingly, France has the highest share of HGIEs whose growth started before 2004: 13% between 1998 and 2003 and 5% before 1998.

Spin-offs: 18% of the French HGIEs were spin-offs, which is the second highest share in the sample. 22% of these spin-offs originate from universities, 17% from other PROs, and 56% from other companies.

Factors and bottlenecks for HGIEs' growth in France

Growth factors: The single most important factor for growth mentioned by the French HGIEs is that the company has particularly highly skilled employees (79% "applies fully", 20% "applies partly" and only 1% "does not apply"). The second most important factor mentioned was that the company's directors actively target growth (64% "applies fully" and 24% "applies partly"). Successful introduction of new products or services is the third most important factor (57% "applies fully", 27% "applies partly"). Entering new international markets appears to be the most important shortcoming (43% did not agree that they successfully entered into new international markets). For more details see Exhibit 5-1 in the Annex.

Main obstacles: The "main obstacles" for growing an innovative company in France were found to be bureaucracy and regulations (e.g. "legislators do not have a global vision of our activity"), finding qualified personnel, access to finance, individual character traits of the entrepreneur, and strong competition. Beside these issues that were mentioned frequently there was a multitude of other issues mentioned, e.g. the international economic crisis, high labour costs, social security law and labour law.

Typical HGIE profiles in France

In France, the percentage of HGIEs among all firms was found to be very high. Conforming to cross-country patterns, most firms (in absolute terms) are located in the sectors of Architectural and engineering activities (NACE 711), Computer programming, consultancy and related activities (NACE 620), and Management consultancy agencies (NACE 702). Relative to the number of firms within each sector, however, HGIEs are particularly present in various manufacturing industries. The most occurring type of HGIEs, based on sectors, are somewhat bigger than other firms in the same sectors. There is no such difference for the age of HGIEs.

3.2.4 United Kingdom

HGIE and sample characteristics in the UK

Sectors: The United Kingdom's sample includes firms from 15 sectors, most of them from three sectors with 15 cases: NACE 620 "Computer programming, consultancy and related activities", NACE 702 "Management consulting activities", and NACE 711 "Architectural and engineering activities and related technical consultancy". The United Kingdom is the only country contributing NACE 652 "Reinsurance" to the sample.

Size-classes: 75% of the HGIEs in the United Kingdom's sample have 10-49 employees, 21% have 50-249 employees, and 4% have more than 249 employees. The UK has a clearly above average share of small firms and a below-average share of medium-sized firms in the sample.

Age / high growth start: The majority (69%) of the United Kingdom's HGIEs were founded between 1988 and 2003. 21% were founded before 1988, only 8% were founded between 2004 and 2008, which is the lowest share in the sample. The sample included no firms founded after 2008. In more than half of the HGIEs in the United Kingdom's sample (53%), high growth started between 2004 and 2008, the highest share of all surveyed countries. The shares of HGIEs whose growth started before 2004 (8% between 1998 and 2003 and 1% before 1998) is quite average.

Spin-offs: 19% of the United Kingdom's HGIEs were spin-offs, which is the highest share in the sample. 19% of these spin-offs originate from universities, none from other PROs, and 75% from other companies.

Factors and bottlenecks for companies' growth in the UK

Growth factors: The single most important factor for growth mentioned by the United Kingdom's HGIEs is that the company has particularly highly skilled employees (83% "applies fully", 14% "applies partly" and only 2% "does not apply"). The second most important factor mentioned was that the company's directors actively target growth (82% "applies fully" and 14% "applies partly"). Successful introduction of new products or services is the third most important factor (54% "applies fully", 24% "applies partly"). Access to finance appears to be the single most important barrier (67% did not agree that they have easy access). For more details see Exhibit 5-1 in the Annex.

Main obstacles: The "main obstacles" for growing an innovative company in the United Kingdom were found to be funding issues, finding qualified personnel, regulations and strong competition. Beside these issues which several interviewees mentioned, there were a multitude of other issues mentioned, e.g. the international business cycle, high labour costs, social security law and labour law, protectionism and an anti-British mentality. Few interviewees said that there are no barriers at all.

Typical HGIE profiles in the UK

The HGIEs in the UK are relatively concentrated, with 66% being located in Architectural and engineering activities, Computer programming, consultancy and related activities or Management consultancy agencies. Compared to all other UK firms, the share of HGIEs is quite modest; an average proportion of 5% is distributed relatively equally over the various sectors, with a maximum of 13% in Manufacture of basic chemicals. On average, British HGIEs are a bit larger and older than regular UK firms. In the occasion state support is achieved, this happens by means of consultancy.

3.2.5 Poland

HGIE and sample characteristics in Poland

Sectors: The Polish sample includes HGIEs from 13 sectors, most of them from four NACE categories with 6 to 8 firms each: NACE 641 “Monetary intermediation”, NACE 702 “Management consultancy activities” and NACE 465 “Wholesale of information and communication equipment”. In the other sectors the highest number of cases is smaller than 6.

Size-classes: 45% of the HGIEs in the Polish sample have 10-49 employees, 47% have 50-249 employees, and 8% have more than 249 employees. The share of 47% for medium-sized firms is the second-highest of all countries in the sample.

Age / start of high growth: 55% of the Polish HGIEs were founded between 1988 and 2003, 24% were founded before 1988, and 16% were founded between 2004 and 2008. The sample included no firms founded after 2008. In more than half of the HGIEs in the Polish sample (52%), high growth started between 2004 and 2008. This is the second highest percentage for this period of the seven countries.

Spin-offs: 10% of the Polish HGIEs were spin-offs, all of them from other companies and 20% percent from other PROs. This means that some spin-offs are based on research findings from different types of organisations, possibly joint research. Poland is one of only two countries in the survey to have no company foundation based on research findings from universities.

Factors and bottlenecks for companies’ growth in Poland

Growth factors: The single most important factor for growth mentioned by the Polish HGIEs is that the company’s directors actively target growth (94% “applies fully”, 6% “applies partly”). The second most important factor mentioned was that the company has particularly highly skilled employees (65% “applies fully” and 35% “applies partly”). Successful introduction of new products or services is the third most important factor (61% “applies fully”, 35% “applies partly”). Entering new international markets appears to be the most important barrier (59% did not agree that they successfully entered into new international markets). For more details see Exhibit 5-1 in the Annex.

Main barriers: The single most important “main obstacle” for growing an innovative company in Poland mentioned by the interviewed HGIEs was bureaucracy and regulation (32%). Difficult access to finance followed (18%). Strong competition or cost pressure (10%) and lack of support from the state (8%) were also mentioned frequently.

Typical HGIE profiles in Poland

The typical HGIE in Poland was founded between 1988 and 2003 and is from the sector for monetary intermediation (NACE 641) or the sector of management consultancy (NACE 702). It has between 50 and 249 employees. Its innovation activity in the past five years was characterized by new products or services and also, to a lesser extent, new business processes. It sells mainly to other companies, and its high growth started between 2004 and 2008.

3.2.6 Switzerland

HGIE and sample characteristics in Switzerland

Sectors: The comparatively small Swiss sample includes HGIEs from 14 sectors, with NACE 711 “Architectural and engineering activities and related technical consultancy” being the single biggest one with eight cases. In the other sectors the highest number of cases is five or smaller.

Size-classes: 77% of the HGIEs in the Swiss sample have 10-49 employees, 23% have 50-249 employees. Switzerland is the only country to have no big firms in the sample. The share of 77% for small firms is the highest of all countries in the sample.

Age / start of high growth: 62% of the Swiss HGIEs were founded between 1988 and 2003, 26% were founded before 1988, and 13% were founded between 2004 and 2008. The sample included no firms founded after 2008. In more than half of the HGIEs in the Swiss sample (56%), high growth started between 2004 and 2008. This is the highest percentage for this period of the seven countries.

Spin-offs: Only 7% of the Swiss HGIEs were spin-offs, this is the lowest percentage of all countries in the sample. 67% of them are based on research findings from other companies, 33% on research findings from universities and 17% from other PROs. This indicates that many spin-offs are based on research findings from different types of organisations, possibly joint research.

Factors and bottlenecks for companies’ growth in Switzerland

Growth factors: The single most important factor for growth mentioned by the Swiss HGIEs is that the company has particularly highly skilled employees (90% “applies fully”, 10% “applies partly”). The second most important factor mentioned was that the company’s directors actively target growth (77% “applies fully” and 23% “applies partly”). Successful introduction of new products or services is the third most important factor (56% “applies fully”, 23% “applies partly”). Entering new international markets appears to be the most important barrier (51% did not agree that they successfully entered into new international markets).

Main barriers: The “main obstacles” for growing an innovative company in Switzerland were found to be access to finance, the strong Swiss franc, finding qualified personnel, and strong competition, especially from Asia. Beside these issues that were mentioned frequently there were several other issues mentioned, e.g. bureaucracy and regulations or a lack of domestic demand.

Typical HGIE profiles in Switzerland

The typical HGIE in Switzerland was founded between 1988 and 2003 and is from the sector for architectural and engineering activities and related technical consultancy (NACE 711) or the sector of computer programming, consultancy and related activities (NACE 620). It has less than 50 employees. Its innovation activity in the past five years was characterized by new products or services and also, to almost the same extent, new business processes. It sells mainly to other companies, and its high growth started between 2004 and 2008.

3.2.7 United States

HGIE and sample characteristics in the US

Sectors: The US sample includes HGIEs from 29 sectors, the biggest sectors being “Computer programming, consultancy and related activities” (NACE 620), “Management consultancy activities” (NACE 702) and “Architectural and engineering activities and related technical consultancy” (NACE 711) with 15 cases each. In the other sectors the highest number of cases is 13 or smaller. The US sample is the only one to contain NACE 304 “Manufacture of military fighting vehicles”, NACE 601 “Radio broadcasting”, NACE 722 “R&D in social sciences and humanities” and NACE 742 “Photographic activities”.

Size-classes: 57% of the HGIEs in the US sample have 10-49 employees, 36% have 50-249 employees and 7% more than 250 employees. The size-classes’ distribution is pretty much average.

Age / start of high growth: 51% of the US HGIEs were founded between 1988 and 2003, 27% were founded before 1988, and 18% were founded between 2004 and 2008. The US sample is the only one to include firms founded after 2008 (3%). In more than half of the HGIEs in the US sample (51%), high growth started after 2008. This is the second highest percentage for this period of the seven countries.

Spin-offs: 9% of the US HGIEs were spin-offs; this is the second lowest percentage of all countries in the sample. 64% of them are based on research findings from other companies, 21% on research findings from universities and 14% from other PROs. This indicates that many spin-offs are based on research findings from different types of organisations, possibly joint research.

Factors and bottlenecks for companies’ growth in the US

Growth factors: The two most important factors for growth mentioned by the US HGIEs are that the company has particularly highly skilled employees (75% “applies fully”, 24% “applies partly”, 1% “does not apply”) and that the company’s directors actively target growth (75% “applies fully” and 18% “applies partly”, 6% “does not apply”). Facing strong competition is an important factor (57% “applies fully”, 27% “applies partly”). Entering new international markets appears to be the most important shortcoming (55% did not agree that they successfully entered into new international markets).

Main barriers: The “main obstacles” for growing an innovative company in the United States were found to be access to finance, bureaucracy and regulations and finding qualified personnel. Several interviewees said that there are no hurdles. Beside these issues, that were mentioned frequently, many other issues mentioned, e.g. the international business cycle, high labour costs and overall tax burden and an underperforming education system.

Typical HGIE profiles in the US

Compared to the absolute number of US firms, the percentage of HGIEs is rather low. The 2% of HGIEs are mainly found in the sectors Computer programming, consultancy and related activities, Architectural and engineering activities, and Management consultancy agencies. The sector with the highest share of HGIEs is Manufacture of basic pharmaceutical products, but even here the proportion is only 6%. The US HGIEs are larger than regular firms. Yet, at the same time, they are also significantly younger. With respect to age, variations exist between the most common types of US HGIEs. Being relatively young, most firms experienced their growth in the last years. If supported by government policy, which happens relatively rarely, this tends to occur in the form of participation in state-funded offers at reduced cost.

3.2.8 Republic of Korea

HGIE and sample characteristics in Korea

Sectors: The Korean sample includes HGIEs from 14 sectors, the single biggest sector being “Computer programming, consultancy and related activities” (NACE 620) with 12 cases. In the other sectors the highest number of cases is 6 or smaller.

Size-classes: 11% of the HGIEs in the Korean sample have 10-49 employees, 52% have 50-249 employees and 36% more than 250 employees. Korea thus bears the highest share of medium- and especially large-sized firms within the sample, unsurprisingly resulting in the lowest share of small firms.

Age / start of high growth: 70% of the Korean HGIEs were founded between 1988 and 2003, 14% were founded before 1988, another 14% between 2004 and 2008. In almost half of the HGIEs in the Korean sample (49%), high growth started between 2004 and 2008.

Spin-offs: 14% of the Korean HGIEs were spin-offs. They are all based on research findings from other companies. Korea is the only country in the sample, where no foundations based on research findings from either universities or other PROs were reported.

Factors and bottlenecks for companies’ growth in Korea

Growth factors: The single most important factor for growth mentioned by the Korean HGIEs is that the company’s directors actively target growth (70% “applies fully” and 27% “applies partly”). The second most important factor mentioned was that the company has particularly highly skilled employees (55% “applies fully”, 43% “applies partly”). Successful introduction of new products or services is the third most important factor (45% “applies fully”, 45% “applies partly”). Entering new international markets appears to be the most important barrier (36% did not agree that they successfully entered into new international markets).

Main barriers: The “main obstacles” for growing an innovative company in Korea which the interviewees mentioned were bureaucracy and regulations mainly favouring big companies (41%). The “big company issue” was found to be a specific and important barrier to SMEs’ growth in Korea. Beside these issues, that were mentioned frequently, there were other issues mentioned, e.g. difficult access to finance (11%), strong competition (9%), and marketing difficulties (7%).

Typical HGIE profiles in Korea

The typical HGIE in Korea was founded around the year 1995 and is from the sector for computer programming, consultancy and related activities (NACE 620). It has between 50 and 249 employees. Its innovation activity in the past five years was characterised by new products or services and also, to a lesser extent, new business processes. It sells mainly to other companies, and its high growth started between 2004 and 2008.

3.2.9 Japan

HGIE characteristics in Japan

The indications from the HGIE Survey 2013 in Japan made in the following need to be interpreted very cautiously because the number of cases in the Japanese sample was only 15.

Sectors: A breakdown of Japanese HGIEs by sector is not available. Japan's *tankan* (diffusion) index, an important economic index and a measure of business confidence, offers some indications as to where HGIEs can mainly be expected to be found in Japan. The service sector is currently at plus 12, meaning that 12% more companies are optimistic than pessimistic about their business. The service sector is faring better than the manufacturing sector which is at minus 4. Overall Japan's economy can be considered as perennially sluggish.

Size-classes: 87% of the HGIEs in the Japanese sample have 10-49 employees, and 7% each have 50-250 and more than 250 employees.

Age / start of high growth: 27% of the HGIEs in the Japanese sample were founded after 2008, which is by far the highest share of all countries surveyed. 47% were founded between 2004 and 2008, 13% between 1988 and 2003, and 13% before 1988. In the vast majority of cases, high growth started after 2008, reflecting the large share of young enterprises in the sample.

Spin-offs: Almost half of the HGIEs in the Japanese sample, 47%, said they originate in research findings from another organisation. This is by far the highest share of all countries surveyed. Several of these HGIE spin-offs did not answer the question on what type of organisation they originated from. In 14% of these cases, the HGIEs spun off from a university, similarly 14% spun off from a public research organisation other than a university, and in 29% from another company. Thus, in line with results from the other countries, the highest share stemmed from another company.

Factors and bottlenecks for HGIEs' growth in Japan

As regards reasons for growth of Japanese HGIEs, the largest share of answers of "applies fully" were found for "our company's directors actively target growth". Furthermore, large shares of HGIEs stated that the company has particularly highly skilled employees (47% "applies fully", 33% "applies partly") and that the company successfully introduced new products or services to the market (33% "applies fully", 60% "applies partly"). This corresponds with the findings from the other sample countries. The findings for most other indicators are also largely in line with the findings from other countries. However, one item is quite different: 47% of the Japanese HGIEs agreed fully and 40% partly that they had easy access to external funding. There may be specific national circumstances in Japan currently offering a better environment for financing innovative enterprises.

The answers to the open-ended question about the most important barrier to growth of innovative enterprises in Japan brought a number of different answers. The "legal system" was mentioned twice. Issues related to employees' skills were also stated twice: "lack of English ability" and "decrease in student population".

3.3 HGIE characteristics by sector⁵

3.3.1 Factors and barriers for companies' growth by sector

Manufacturing versus service sectors

Subdividing the sectors of the survey into manufacturing and service sectors, one finds that there are hardly any notable differences between these two groups. There are **only two factors where manufacturing and service sectors differ**: As regards "our company has **particularly highly skilled employees**", 80% of the service sectors agreed fully but only 71% of the manufacturing sectors. It might be that the service sectors are overall more attractive than manufacturing sectors for skilled employees, e.g. due to wages and working conditions.

The second item with notable differences is "our company successfully **entered into new international markets**": 37% of the manufacturing sectors agreed fully but only 20% of the service sectors. Specificities of manufactured products versus services may explain this difference; it may be easier to export products than services because services may often imply a higher level of personal interaction with the customers.

Single sectors

In almost all of the ten sectors with a sufficiently high number of cases, the two items "Our company's directors actively target growth" and "Our company has particularly highly skilled employees" were found to be the most important factors for growth, and access to external financing was the most problematic issue. However, there are exceptions from the rule. Focussing on extreme characteristics of the ten sectors in terms of highest or lowest shares of full approval of a certain issue, it appears that **each sector has its own distinct profile of growth factors** for companies:

- 201, Manufacture of basic chemicals has the lowest shares of answers of "applies fully" for "Our company successfully introduced new products or services to market" (33%). It was however found to be above average in the other three forms of innovation, i.e. introducing new internal business processes, new marketing methods and new ways of organising business.
- 265, Manufacture of instruments and appliances was found to have the highest product and service innovation activity (70% "applies fully" for this item) and also by far the highest share of full approvals for "entering new international markets" (42%). This may reflect the fact that companies in this sector sell highly specific goods that need an international market to allow companies to grow quickly. In this international market competition is apparently below average.
- 465, Wholesale of information and communication equipment reported the highest share of "applies fully" for "facing strong competition" (62%) which goes hand in hand with the second highest share for "introducing new products or services". On the other hand, this sector reported the lowest shares of "applies fully" for "successful introduction of new internal business processes" (24%) and "successful introduction of new forms of organising business" (17%).
- 582, Software publishing was the sector with the highest share of companies reporting to have introduced new internal business processes (50%). This may reflect a strong propensity to adopt new business process software in this sector because the companies in the sector are very familiar with them as it is their core business. There may also have been a misunderstanding of the issue among some

⁵ This chapter does not include data for Japan.

interviewees, believing the issue is introducing new business software to other companies.

- 620, Computer programming, consultancy and related activities reported the highest share of “applies fully” for “our company sells to a growing market” (49%), and it also reported an above-average share for “favourable business cycle” (38).
- 641, Monetary intermediation was found to have the highest share of “applies fully” for successful introduction of new marketing methods (39%). It was also found to have the lowest shares of “applies fully” for “business cycle has been favourable for our company” (18%) – which may truly reflect the situation of financial markets in Europe –, “our company sells to a growing market” (14%) and for “successfully entering new international markets” (11%). However, it had the highest share for “directors actively target growth” (82%), which may reflect a necessity in an unfavourable economic environment.
- 701, Activities of head offices were found to have by far the highest share of “applies fully” for “easy access to external finance” (53%). This sector also had the lowest shares of “applies fully” for “directors actively target growth” (63%), “particularly highly skilled employees” (37%), “successful introduction of new marketing methods” (5%) and “successfully entering new international markets” (11%).
- 702, Management consultancy activities reported the highest level of approval for successful introduction of new forms of organising business (37%). This may partly reflect a misinterpretation of the question because introducing new forms of organising business is a core activity of management consultancy itself. This sector also reported the second highest share of full approval for “skilled employees”.
- 711, Architectural and engineering activities and related technical consultancy reported the highest share of “applies fully” for “business cycle has been favourable” (44%). The sector also reported the second lowest approval of “successful introduction of new products or services” (35%) which may reflect the good business cycle and a related lower need to innovate.
- 721, R&D on natural sciences and engineering was found to have the highest share of “applies fully” for “our company has particularly highly skilled employees” (95%). It also had the lowest share of “applies fully” for “our company has been facing strong competition” (37%) and for “our company has had easy access to external financing” (9%). Financing difficulties might be related to specific risks of R&D, e.g. uncertainties of R&D success.

For details about the factors and barriers for growth described in this section see Exhibit 8-1 in the annex.

3.3.2 HGIE characteristics by sector

Overall share of HGIEs

In the data universe the shares of HGIEs per industry did not differ much. In all industries with a sufficient number of cases the shares were not higher than 7%.⁶

⁶ For two industries, NACE 663 “fund management activities” and 749 “Other professional, scientific and technical activities”, data were only available for Germany and France because for the other countries a different statistical categorisation applied.

HGIE by sector and size classes

While HGIEs are generally small, **the shares of HGIEs of a particular size differ across the sectors**. In all sectors except one, most companies in the sample are small, i.e. they have 10-49 employees. The exception is NACE 701, activities of head offices, with an equal share of 42% for both small and medium-sized enterprises. In this sector, the share of large companies with more than 249 employees was largest (16%). No large HGIEs were interviewed in NACE 201 (basic chemicals) and 582 (software publishing). The largest share of small companies was interviewed in NACE 702, management consultancies. There are apparently **no notable differences in size class distribution between manufacturing and service sectors**. These figures will have to be compared with the size class distributions in the universe of the address material in order to check whether the sample reflects the actual distributions in the sectors. Exhibit 7-2 in the Annex shows the distribution of companies across the ten sectors by size class.

HGIEs' age groups (year of foundation) by sector

In all ten sectors, the largest share of HGIEs were founded between 1988 and 2003. While it may be surprising that, on average, HGIEs were founded more than ten years ago, it may be even more surprising that this applies to all sectors in the sample. Furthermore, in almost all sectors the second highest share of HGIEs in the sample turned out to be for companies founded before 1988. Exceptions are software publishing (NACE 582) and management consulting (NACE 702) with a higher share of firms founded 2004-2008. Interviews with very new companies could only be carried out in four sectors, most of them (6%) in basic chemicals manufacturing (NACE 201).

Year when fast growth started by sector

In six of the ten sectors the start of high growth is fairly evenly distributed over the most recent period (after 2008) and the period 2004-2008. In three sectors, the share of HGIEs was found to be largest for high growth having started after 2008: basic chemicals (NACE 201), wholesale of IC equipment (NACE 465) and R&D on natural sciences and engineering (NACE 721). In one sector, software publishing (NACE 582), 65% of the companies have been experiencing high growth since the period of 2004-2008. Software publishing is also the sector in which the share of HGIEs who have been growing since before 1998 is largest (10%).

Spin-offs by sector

Spin-offs were found to be almost equally prevalent among HGIEs in the manufacturing sector (17%) and the service sector (14%). However, spin-offs from another company were found to be more frequent (77% in manufacturing versus 63% in services). The breakdown for spin-offs by innovative industries in three-digit NACE categories is tentative due to the small number of cases per industry. In the four sectors for which more than 50 cases are available, particularly high shares of spin-offs were found in R&D on natural sciences and engineering (NACE 721, 26%) and manufacture of instruments and appliances (NACE 265, 21%).

Venture capital and private equity investment by sector

Private equity and venture capital investments were found to not differ between the manufacturing and the service sector. In manufacturing, 13% of the HGIEs reported VC investment and 27% private equity investment; in services the shares were 12% and 24%. Particularly high shares of PE and VC were found in 721 R&D on natural sciences and engineering (19% VC, 21% PE) and 265 Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks (16% VC, 23% PE).

4 Conclusions and outlook

Conclusions – key insights

As regards enterprises' **age**, the finding that high growth of HGIEs mainly takes place more than ten years after founding the company – which applies to all countries and to all industries in the sample for which a sufficient number of cases is available – may indicate the importance of policy measures for somewhat developed companies. While start-up promotion and support for young companies – i.e. “newborn and infant companies” – may still be helpful, policy makers may be well advised to also consider companies in their “youth stage”.

The most severe **barriers to growth** were found to be bureaucratic and regulatory hurdles, access to finance and finding skilled employees. If policy makers seek to foster the emergence and growth of HGIEs they may be well advised to consider these perceived barriers.⁷

The finding that two thirds of the HGIE **spin-offs** originated from companies shows an origin that possibly does not yet receive sufficient attention from academic research and public policy makers.⁸ Academic entrepreneurship research and public policy measures may currently be rather targeting spin-offs from universities and other PROs. However, one could also argue that the figures suggest doing more or enhancing action to foster spin-offs from public research.

Hardly any notable differences were found for growth factors and barriers between **manufacturing and service sectors**. This may indicate that HGIE policies may not have to distinguish much between manufacturing and services in this respect. The only two factors with differences were “particularly highly skilled employees” (more agreement from service sectors) and “entering new international markets” (more agreement from manufacturing sectors). This finding may also be considered in public policy programmes.

The survey found that each of the ten industries on three-digit NACE level for which a sufficiently large number of firms was available has a unique profile in terms of growth factors. Policy may thus be well advised to consider such **differences between industries**, e.g. if regional policy makers seek to strengthen growth of company clusters in a certain sector. The drivers and barriers may however change over time so that careful monitoring of economic developments will be necessary.

The second policy brief of the HGIE study deals with “policies for HGIEs”. It takes up on the insights about HGIE characteristics noted here and elaborates on further study findings related to policy measures.

Outlook

While the dataset of the HGIE study survey reveals important insights about HGIE characteristics, **future surveys** could bring even broader and deeper insights for understanding HGIEs. The HGIE survey was limited in some ways, above all in the number of countries and sectors included. In the future, it may be highly insightful to have control groups of HGIEs in sectors not deemed as innovative as the 36 NACE categories focused in the HGIE Survey 2013 of this study. It would also be insightful to have control groups of companies that did not attain high growth.

⁷ This applies even without knowing perceived main barriers in non-HGIEs or non-innovative firms. Surveying control groups, while insightful, would have been beyond the scope of the study.

⁸ See also Mason/Brown (2013).

References

- Autio, Erikko; Kronlund, Mathias; Kovalainen, Anne (2007): High-Growth SME support initiatives in nine countries: analysis, categorisation, and recommendations. Report prepared for the Finnish Ministry of Trade and Industry. MTI Publications 1/2007.
- Czarnitzki, Dirk; Rammer, Christian; Toole, Andrew A. (2013): University Spinoffs and the "Performance Premium". ZEW Discussion Paper No. 13-004.
- European Commission (2013): Measuring innovation output in Europe: towards a new indicator. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. COM(2013) 624 final. Brussels, 13.9.2013.
- Mason, Colin; Brown, Ross (2013): Creating good public policy to support high-growth firms. In: Small Business Economics, February 2013 , Vol. 40, No. 2, pp. 211-225.
- Obschonka, M.; Schmitt-Rodermund, E.; Silbereisen, R.K.; Gosling, S.D.; Potter, J. (2013): The regional distribution and correlates of an entrepreneurship-prone personality profile in the United States, Germany, and the United Kingdom: A socioecological perspective. Journal of Personality and Social Psychology, DOI: 10.1037/a00322752013.
- OECD (2013): Entrepreneurship at a glance 2013. OECD Publishing.
- Ramboll/Creditreform (2012): Study on Fast Growing Young Companies (Gazelles) – Summary. On behalf of the Bundesministerium für Wirtschaft und Technologie. June.
- Stangler, Dane (2010): High-growth firms and the future of the American economy. Kauffman Foundation Research Series: Firm Formation and Economic Growth. March. Available at <http://www.kauffman.org/uploadedfiles/high-growth-firms-study.pdf>.
- WEF, World Economic Forum (2011): Global Entrepreneurship and the Successful Growth Strategies of Early-Stage Companies. A World Economic Forum Report in collaboration with Stanford University, Graduate School of Business, SPRIE and STVP. (Available at http://www3.weforum.org/docs/WEF_Entrepreneurship_Report_2011.pdf.)

Annex 1: Description of CATI method

CATI methodology

CATI surveys are a preferred method for conducting standardised enterprise surveys, in particular when the survey population is sufficiently large, business directories or similar sources can be used as sample frames, and small sampling fractions are required. Interviews are conducted by telephone; the interviewer reads questions from a screen and enters the answers directly into the computer ("computer assisted"); the programme then automatically shows the next question. This approach offers the advantage of quick and reliable data collection from a central telephone unit for each geographical area selected.

CATI has some advantages over other methods, in particular postal surveys, sometimes used for surveys of this kind:

- interviewers can increase comprehension of questions by directly answering to respondents' questions;
- feedback on the fieldwork is instantly available and can be fed into adjustments of procedure such as changes to interviewer instructions;
- it also allows for advanced control of the interview situation such as reasons for refusal;
- it is in many cases the most cost efficient approach and reduces the time needed for field-work;
- an electronically controlled CATI questionnaire almost completely eliminates interviewer errors;
- the response rate is usually higher than in postal surveys, with implications for self-selection sampling distortions.

A challenge of CATI surveys is that surveys among a small sample can be expensive because of the disproportionately high fixed costs for the set-up of surveys. "Fixed costs" which occur irrespectively of the number of interviews that are conducted include those for the questionnaire translation, the CATI programming, and the sampling (purchase of addresses from business directories, and the like).

For the HGIE survey, a CATI enterprise survey was conducted in the eight countries of Germany, France, UK, Poland, Switzerland, USA, Korea, and Japan. The targeted interlocutors were decision makers, i.e. in smaller companies directors or general managers and in larger companies managers dealing with strategic planning.

Sampling

Building a relevant sample of HGIEs in the targeted countries with the resources given required a fine-tuned approach. The terms of reference required that the period of three-year consecutive growth should be "as recent as possible". The address material available to Ipsos allowed pre-selecting enterprises with a relevant growth performance in previous years. The most recent period growth period was 2009-2012. Since these were years of unfavourable economic framework conditions in many European countries, the sample was made up of companies that were able to grow despite a distressful economic environment. In order to increase the number of firms fulfilling the growth criterion, the eligible period of time was extended back to 2007.

Oversampling was necessary because it needed to be assumed that only one in ten or one in 25 of the companies for which address material is available can actually be interviewed. There are several reasons limiting their actual availability or suitability:

- The address material does not correctly indicate growth performance, which does actually not fulfil the criterion of ten percent growth in three consecutive years.
- The company refuses to participate in the interview. In some companies, particularly in larger ones, there is a general policy not to respond to surveys at all.
- The targeted interlocutor cannot be reached on the phone in the given period of time. The targeted interlocutors are decision makers in enterprises which may not be easily available.

While the optimal target was 100 interviews per country (150 in the US, 50 in Switzerland), due to the restrictions in terms of sectors and growth performed, the maximum number of possible interviews per country was limited.

For Japan, a data universe of 450 enterprises in the targeted innovative sectors was compiled and contacted. The data universe included firms from several Japanese regions, not from the whole of Japan, and included a share of all enterprises in these regions. The included regions are Kanto, which includes Tokyo and Yokohama; Kansai, which includes Osaka; and Kyushu, which includes Fukuoka. The database was merged from the following sources. Primary sources: (1) Kigyō Joho (Teikoku Databank of Japanese Companies, <http://www.tdb.co.jp/index.html>); (2) Nikkei Kaisha Joho (Nikkei Company Information), Nihon Nikkei Shimbun Shuppansha, quarterly, (3) Kaisha Shikohō (Company Handbook), Toyo Keizai Shinposha, quarterly; (4) Kaisha Shikohō—Mijojo Kaisha Ban (Company Handbook, Unlisted Company Edition), Toyo Keizai Shinposha, biannual. Secondary sources: (5) “Chusho Kigyō 300” (Small and Medium-Sized Enterprises 300), Ministry of Economy, Industry and Trade (METI); (6) “Japan Venture Award”, METI; (7) “Best Venture 100”, Bencha Tsushin Online; (8) “Zenkoku Hirogaru Sapooto Taisei” (Nationwide Support), Organization for Small & Medium Enterprises and Regional Innovation, JAPAN (SMRJ).

Representativity of the sample

The sample used in this study is representative for HGIEs in the selected countries (except for Japan), considering that (a) the address database used (supplier for all countries except Japan: Dun & Bradstreet) was the most comprehensive one available, (b) all enterprises in the address database had a similar likelihood to be taken up into the sample, (c) the questionnaire included a filter question for verifying whether the enterprises really fulfilled the high growth criteria as stated in the database.

The following limitations apply:

- On request of the European Commission, the sample should not include more than 15 enterprises in any of the 36 innovative industries. There are a few industries dominating the universe of enterprises, notably 702 - Management consultancy activities; 711 - Architectural and engineering activities and related technical consultancy; 620 - Computer programming, consultancy and related activities. These industries would have a higher number of enterprises in the sample for the four countries of Germany, France, the UK and the US if there would have been no such restriction. For calculations in which the actual share of HGIEs in innovative sectors is needed, appropriate weighting would need to be applied.
- The address database used includes a share of enterprises in a certain country and industry, compared to official statistics. The share differs between country and industry.

- As in any non-obligatory survey, there is an unavoidable degree of self-selection of the responding enterprises.

Screenouts

A certain share of interviews was ended at the beginning when certain questions about the enterprise's characteristics were asked ("screenout"). This applies to the following items:

- **Mergers and acquisitions:** The survey was supposed to only include enterprises with organic high growth, as also stipulated in the OECD definition of high growth. Question C2 took care of this. A considerable share of enterprises was screened out because their growth was due to mergers or acquisitions (M&A). This provides interesting findings beyond a purely technical description of screenouts. The single highest share of M&A was found in the US (27%). In the other countries the shares of M&A were fairly similar: UK and Switzerland 19%, Poland 18%, France 17%; somewhat lower in Korea (15%) and Germany (13%).
- **High growth:** A relatively large share of enterprises with which an interview was begun was found to not fulfil the high growth criterion, while the database stated they performed high growth. In order to have a valid sample of HGIEs, this issue was verified in question C4. The largest share of screenouts for this reason was encountered in Korea (49%), followed by Poland (32%), France (26%), Switzerland (23%) and Germany (20%). The lowest shares of screenouts for not performing high growth were found in the US (10%) and the UK (15%).
- **Enterprise size:** A small share of enterprises (8% in UK, 5% in CH, 3% in US, 1% in all other countries) was filtered out because they did not fulfil the criterion of having at least 10 employees at the beginning of the growth period.
- **Technical:** A small share of interviews – not more than 6% in any country – was ended for technical reasons, e.g. no target person could be reached or the interviewee decided to abandon the call.

Fieldwork

In order to increase readiness to participate in the survey, the study team included official letters from DG RTD at a dedicated website hosted by Ipsos, the company carrying out the survey. The letters asked the targeted respondents in their national language to participate in the survey.

Final sample

The final sample included 580 HGIEs.

The following table lists the sampled HGIEs by sector and country.

Exhibit 4-1: Sampled HGIEs by sector and country

NACE	DE	FR	UK	PL	CH	US	KR	JP	Σ
201 Manufacture of basic chemicals, fertilisers and nitrogen compounds, plastics and synthetic rubber in primary forms	1	0	1	3	0	13	0	1	19
202 Manufacture of pesticides and other agrochemical products	1	0	0	0	0	0	0	0	1
211 Manufacture of basic pharmaceutical products	0	0	0	1	0	4	0	1	6
212 Manufacture of pharmaceutical preparations	0	0	0	0	0	5	5	0	10
262 Manufacture of computers and peripheral equipment	3	0	1	1	1	2	1	0	9
263 Manufacture of communication equipment	3	0	0	1	1	5	3	0	13
264 Manufacture of consumer electronics	3	0	2	0	0	2	0	1	8
265 Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks	15	11	5	5	4	13	4	0	57
266 Manufacture of irradiation, electromedical and electrotherapeutic equipment	1	0	0	0	2	1	1	0	5
267 Manufacture of optical instruments and photographic equipment	5	0	3	0	1	4	0	0	13
291 Manufacture of motor vehicles	0	0	0	0	0	1	1	0	2
303 Manufacture of air and spacecraft and related machinery	0	0	2	0	0	5	0	0	7
304 Manufacture of military fighting vehicles	0	0	0	0	0	1	0	0	1
465 Wholesale of information and communication equipment	0	15	0	6	0	3	6	0	30
582 Software publishing	0	12	1	2	4	3	1	0	23
601 Radio broadcasting	0	0	0	0	0	3	0	0	3
602 Television programming and broadcasting activities	0	0	0	0	1	3	0	0	4
612 Wireless telecommunications activities	0	1	0	0	0	2	0	0	3
613 Satellite telecommunications activities	0	0	0	0	0	0	0	0	0
619 Other telecommunications activities	0	0	8	0	0	2	1	0	11
620 Computer programming, consultancy and related activities	15	15	15	6	5	15	12	8	91
639 Other information service activities	0	0	0	0	0	1	1	0	2
641 Monetary intermediation	1	2	4	8	4	9	0	1	29
643 Trust funds and similar financial entities	1	0	0	0	1	0	0	0	2
651 Insurance	0	0	0	1	0	2	2	0	5
652 Reinsurance	0	0	4	0	0	0	0	0	4
663 Fund management activities	0	0	0	0	0	0	0	0	0
701 Activities of head offices	6	4	2	0	0	7	0	1	20
702 Management consultancy activities	15	15	15	7	3	15	0	1	71
711 Architectural and engineering activities and related technical consultancy	15	15	15	5	8	15	4	0	77
721 R&D on natural sciences and engineering	15	9	6	3	2	6	2	0	43
722 R&D on social sciences and humanities	0	0	0	0	0	5	0	0	5
741 Specialised design activities	0	0	0	0	2	2	0	1	5
742 Photographic activities	0	0	0	0	0	1	0	0	1
743 Translation and interpretation activities	0	0	0	0	0	0	0	0	0
749 Other professional, scientific and technical activities	0	0	0	0	0	0	0	0	0
Total	100	99	84	49	39	150	44	15	580

Source: empirica, HGIE survey 2013

Exhibit 4-2: All enterprises and HGIEs by country in the data universe

Country	Total number of enterprises in targeted sectors	Number of HGIEs in targeted sectors	% of HGIEs in targeted sectors
Germany	40,220	3,645	9
France	18,359	3,834	21
United Kingdom	55,181	2,807	5
Poland	15,769	447	3
Switzerland	8,752	304	3
United States	233,709	5,743	2
Korea	17,753	301	2
Japan*	718	140	19
Total	390,461	17,221	4

Notes: The number of HGIEs in the targeted sectors is based on information in Dun & Bradstreet's database about the companies' levels of employment in the past five years, multiplied with the actual share of HGIEs that was identified in the CATI survey. Genuine HGIEs are those that confirmed employment growth of at least one third over three consecutive years in the past five years and those that did not grow due to mergers or acquisitions.

* The data universe for Japan included enterprises in the targeted sectors in selected Japanese regions: Kanto (including Tokyo and Yokohama), Kansai (including Osaka), and Kyushu (including Fukuoka). The number of HGIEs is estimated. Figures for the whole of Japan would be higher.

Source: empirica, HGIE survey 2013

Annex 2: Typical HGIE characteristics by country

Method description

The following typical HGIEs by country are derived from the universe address data provided by the Dun & Bradstreet (D&B) Company as well as from the CATI survey findings. The typical HGIEs are shaped by seven criteria: The overall distinguishing criterion is industry, followed by two other business demographic criteria, size class and year of enterprise foundation. These three criteria are taken from D&B data. In the next step, three principal criteria from the CATI survey are taken: main customer group, year when fast growth started, and use of state support.

Germany

In Germany **no innovative sector has an outstandingly large share of HGIEs**; the maximum share of HGIEs is 14%. More than half of the German HGIEs stem from the three industries of (1) computer programming, (2) architectural and engineering activities as well as (3) manufacture of instruments and appliances. In these three industries most enterprises and **HGIEs are small**, but in computer programming as well as architectural and engineering activities apparently a medium size is often favourable for taking off for high growth. Furthermore, in these three industries most enterprises as well as HGIEs are **between 10 and 25 years old**; HGIEs are over-represented in this age class.

Most of the German HGIEs originate from three **industries**: NACE 620 Computer programming, consultancy and related activities; NACE 711 Architectural and engineering activities and related technical consultancy; and NACE 265 Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks. Together the HGIEs from these industries constitute more than half of the HGIEs in the German data universe. NACE groups 620 and 711 are among the five groups with the highest number of all enterprises, i.e. including non-HGIEs, across all seven countries included here. The large number of HGIEs in NACE 620 and 711 is thus nothing special. However, the relatively large number of enterprises and HGIEs in NACE 265 can be considered a German specialty. The share of HGIEs in this sector is 12%. Overall, the share of HGIEs in innovative sectors in Germany varies between 4% (in 641 Monetary intermediation as well as 643 Trust funds and similar financial entities) and 14% (in 211 Manufacture of basic pharmaceutical products and 267 Manufacture of optical instruments and photographic equipment). Since 14% is relatively low, the conclusion may be justified that no innovative sector in Germany has an outstandingly high share of HGIEs.

As regards **size classes**, in all of these three industries (NACE 620, 711 and 265), most enterprises as well as HGIEs are small (10-49 employees), some are medium-sized (50-250 employees), and few – less than a tenth – are large (> 250 employees). In NACE 265 the shares of HGIEs by size class are almost the same as the shares of all enterprises by size class. However, in NACE 620 and 711 the share of medium-sized HGIEs is 10 percentage points larger than the share of medium-sized enterprises overall. Accordingly, the share of small HGIEs is smaller. This may mean that in these two industries a certain size is often required for being able to take-off for high growth.

As regards enterprise **age**, in all of the three industries (NACE 620, 711 and 265) most enterprises as well as HGIEs were founded between 1988 and 2004. However, the share of HGIEs founded in this period of time is even higher than the share of all enterprises; in

all industries more than 10 percentage points. This may mean that HGIEs in Germany tend to be “medium-aged”; neither particularly young nor particularly old.

Beyond industry specificities, German HGIEs **mainly sell to other enterprises** (average share 75%, which is the second highest share of the sample countries after France), **most HGIEs made use of governmental support measures** (55%, which is also the second highest share after France), and in almost half of them **high growth started after 2008** (48% which is slightly above average compared with the other countries).

France

In France, the **percentage of HGIEs among all firms was found to be very high**. Conform cross-country patterns, most firms (in absolute terms) are located in the sectors of Architectural and engineering activities (NACE 711), Computer programming, consultancy and related activities (NACE 620), and Management consultancy agencies (NACE 702). Relative to the number of firms within each sector, however, HGIEs are particularly frequent in various manufacturing industries. The most occurring type of HGIEs, based on sectors, are **somewhat bigger than other firms** in the same sectors. There is **no such difference for the age of HGIEs**.

Most of the French HGIEs were found in Architectural and engineering activities (NACE 711), Computer programming, consultancy and related activities (NACE 620), and Management consultancy agencies (NACE 702). This corresponds almost exactly with the general impression emerging from comparison across all the surveyed countries; only the order of the first two sectors is reversed in comparison to the average. Together, the HGIEs in the three aforementioned sectors account for more than half of all French HGIEs. The share of HGIEs compared to other firms in these sectors seems relatively high, ranging from 17% up to 24%. However, according to the database, some sectors contain an even higher percentage of HGIEs. Particularly notable are manufacturing industries in the field of military fighting vehicles (44%), pharmaceutical preparations (35%), air and spacecraft and related machinery (34%), and pesticides and other agrochemical products (33%). **The remarkably high share of HGIEs** in French industries is demonstrated by an overall average of 21%. This implies that also across other French sectors, the share of HGIEs is above the share in other countries. The only sector where less than 10% is HGIE, is Reinsurance (5%, NACE 652).

With respect to **size classes**, HGIEs from the top three sectors NACE 711, 620 and 702 (i.e. in which most of the French HGIEs are registered) are on average larger than other firms in these sectors. Only between 64%-76% of HGIEs in these industries have between 10 and 49 employees, which is 10 to 15 percentage points lower than the general share of firms in this size class. Stated reversely, the share of HGIEs falling in the size class 50-250 employees is relatively large when compared to the entire French firm population.

The average **age** of HGIEs in the three selected sectors does not differ substantially from other firms in those sectors. In all cases, most firms are established between 1988 and 2004. This holds especially for the sector of Computer programming (77%, versus 62% and 68% in the other two sectors). The ages of HGIEs from the sector Architectural and engineering activities correspond exactly with the averages of French HGIEs stemming from all other industries.

Beyond industry specificities, it is noteworthy that the percentage of **firms selling products to other companies** (79%), rather than households or the public sector, is higher than in any other surveyed country. Moreover, the 45% of HGIEs stating that their **growth started between 2004 and 2008** is in line with the cross-country average, but also the 13% of firms where growth started between 1999 and 2003 is relatively high. A similar observation holds for the percentage of firms stating that they **used specific**

support measures from the state (62%, versus average of 41%). This concerned mainly measures in the form of direct financial support (82%).

United Kingdom

The HGIEs in the UK are **relatively concentrated**, with 66% being located in Architectural and engineering activities, Computer programming, consultancy and related activities or Management consultancy agencies. Compared to all other UK firms, the share of HGIEs is quite modest; an average proportion of 5% is distributed relatively equally over the various sectors, with a maximum of 13% in Manufacture of basic chemicals. On average, British HGIEs are a bit **larger** and **older** than UK firms overall. If HGIEs receive **state support**, this happens mainly by means of **consultancy**.

In line with the patterns observed in most other surveyed countries, most UK HGIEs are registered in the sectors Architectural and engineering activities (NACE 711), Computer programming, consultancy and related activities (NACE 620), and Management consultancy agencies (NACE 702). Especially in the first, the share of HGIEs (29% of all UK HGIEs) is disproportionately large. As a result, no less than **66% of all HGIEs in the UK are concentrated** in the three aforementioned sectors. This does not imply that also within those sectors the share of HGIEs is large (in comparison to all the firms in these sectors). A proportion of 6% or 7% is relatively modest, yet above the average of 5% across all sectors. Particularly high is the share in Manufacture of basic chemicals, fertilisers and nitrogen compounds, plastics and synthetic rubber in primary forms (NACE 201), where 13% of the firms is marked as an HGIE.

HGIEs from the UK are predominantly **small to medium-sized**. The percentage of small firms, having 10-49 employees, is comparable (67% UK average, 69% HGIEs), but certain differences exist when looking at medium size (23% versus 27% having 50-250 employees) and large firms (10% of ordinary UK firms having more than 250 employees, as opposed to 4% of the UK HGIEs). Within the three sectors containing most of the UK HGIEs, these differences are more pronounced. For instance, whereas 78% of the UK Management consultancy agencies and Computer programming firms are small-sized, this proportion is only 66% and 70% for HGIEs in these sectors (respectively).

Just like regular UK firms, 26% of the HGIEs in the UK has been established before 1988. However, whereas an additional 50% of UK firms was founded between 1988 and 2004, this percentage for HGIEs lays at 66%. HGIEs of younger age, established after 2004, are relatively scarce in comparison to regular UK firms (6% versus 20%). This indicates that UK HGIEs are **relatively old**. Also within the three selected sectors, such a pattern can be observed. For example, 81% of computer programming firms was founded between 1988 and 2004, compared with 63% of other firms in that sector. For regular UK firms occupied with Architectural activities, the high percentage of 36% being founded before 1988 is still modest in comparison with the 42% of HGIEs in this sector. In that period computer programming was still relatively unknown, as evidenced by the roughly 12% of firms (both regular and HGIEs) founded before 1988.

Although being relatively old, many HGIEs (53%, compared to cross-industry average of 41%) indicate that their **growth started only after 2008**. Only 33% of these HGIEs benefitted from **support measures from the state**. At the same time, a proportion of 39% of beneficiaries indicating that this support had the form of consultancy is exceptionally high. A large part of HGIEs (41%, versus 12% on average) also states that its establishment is **based on the research findings from another organisation**. The percentage of HGIEs funded by venture capital is very low (2%, versus 13%). Finally, the distribution of sales over various types of clients (i.e. other companies, households and public sector) is conform cross-country average (69%, 9% and 21% respectively).

Poland

In Poland **no innovative sector has an outstandingly large share of HGIEs**; the shares in industries with a reasonably high number of cases are all below 10%. Almost half of the Polish HGIEs stem from the three industries of (1) monetary intermediation, (2) wholesale of information and communication equipment as well as (3) management consultancy activities. In these three industries most enterprises and **HGIEs are small**, but the share of medium-sized HGIEs is 20 percentage points higher than it could be expected. In monetary intermediation, the majority of HGIEs was older than 25 years; while only a quarter of all enterprises in this group were in this age group.

Most of the Polish HGIEs were found in three industries: 641 Monetary intermediation, 465 Wholesale of information and communication equipment, and 702 Management consultancy activities. Together the HGIEs in these three industries make up almost half of HGIEs in the Polish sample. The large number of HGIEs in NACE groups 641 and 702 is nothing particular because these industries are among the five industries with the largest number of enterprises across all survey countries. The large share of HGIEs in NACE 465 is due to an also large number of enterprises in this industry in Poland, which is a Polish specific. The share of HGIEs within NACE 465 is however not particularly large (5%). In Poland there is **no innovative industry with a particularly large share of HGIEs**; in all industries with a reasonably high number of cases the share of HGIEs is below 10%.

As regards **size classes**, in all of these three industries (NACE 641, 465 and 702), most enterprises as well as HGIEs are small (10-49 employees), some are medium-sized (50-250 employees), and few – less than a tenth – are large (> 250 employees). However, in these three NACE groups the share of medium-sized HGIEs is 16-20 percentage points larger than the share of medium-sized enterprises overall. Accordingly, the share of small HGIEs is smaller. This may mean that a certain size is often required for being able to take-off for high growth.

As regards enterprise **age**, in two of the three industries, wholesale of IC equipment and management consulting activities, the majority of enterprises were founded between 1988 and 2004. In monetary intermediation, long-established HGIEs were overrepresented: while only 27% of all enterprises in this NACE group were founded before 1988, 59% of the HGIEs in this group were founded before 1988.

Beyond industry specificities, Polish HGIEs **mainly sell to other companies** (Polish average 67% which is slightly below the average of all survey countries, 70%). The share of Polish HGIEs that have used state support measures was about average (39% compared to an average of 41%). In half of the Polish HGIEs (52%), **high growth started between 2004 and 2008**.

Switzerland

The percentage of HGIEs in Switzerland is rather low with only 3%. HGIEs are mainly found in the sectors Computer programming, consultancy and related activities, Architectural and engineering activities, and Software publishing. Swiss HGIEs have mostly fewer than 50 employees. If **supported by government policy**, which happens relatively rarely, this tends to occur in the form of direct financial support; however, consultancy support and participation in state-funded offers at reduced cost are also considerably more common than in the other countries.

In Switzerland, as in many other countries, the industry Computer programming, consultancy and related activities (NACE 620) has the largest number of HGIEs, followed by Architectural and engineering activities and related technical consultancy (NACE 711). Software publishing (NACE 582) follows third which is somewhat exceptional, Monetary intermediation (NACE 641) and Manufacture of instruments and appliances for measuring,

testing and navigation; watches and clocks (NACE 265) are in 4th and 5th place. Together these industries contribute two thirds of all HGIEs. In relative terms (HGIEs divided by total number of firms), the industries Manufacture of motor vehicles (NACE 291), Manufacture of computers and peripheral equipment (NACE 262), and Reinsurance (NACE 652) have the largest importance of HGIEs with 10-11%.

In regard to size we find that 62% of the Swiss HGIEs have 10-49 employees, 29% 50-250, and 8% more than 250. This is fairly similar to the overall distribution of firms across size classes (10-49 employees: 66%; 50-250 employees: 23%; more than 250 employees: 12%).

41% of all Swiss firms in the D&B database was founded before 1988 and 46% between 1988 and 2003. Only 10% was founded after 2003. This share is even lower for HGIEs with only 5% of firms founded after 2003; this, however, is also an artefact resulting from the definition of HGIEs (firms with 33% of employment growth within three years in the period 2007-2012). Consequently, HGIEs are slightly older than all firms.

Only in 5.6% of the interviewed Swiss HGIEs growth started before 2004, in the remaining 94.4% it started in 2004 or later. Across all Swiss firms the average year when growth started is 2007. The main customers are - as in all other countries - other companies. Among Swiss HGIEs the share of those stating that they made use of **specific support measures from the state was lowest** with only 23% (average across all countries 41%). The companies received most often direct financial support – 56% of those receiving support. However, compared to the other countries participating in state-funded offers at reduced cost and consultancy were also received fairly often (each by a third of the HGIEs receiving state support).

United States

The percentage of HGIEs is rather low compared to other countries. The 2% of HGIEs are mainly found in the sectors Computer programming, consultancy and related activities, Architectural and engineering activities, and Management consultancy agencies. The sector with the highest share of HGIEs is Manufacture of basic pharmaceutical products, but even here the proportion is only 6%. The US HGIEs are **larger** than regular firms. Yet, at the same time, they are also significantly **younger**. With respect to age, variation exist between the most common types of USA HGIEs. Being relatively young, most firms experienced their growth in the last years. If **supported by government policy**, which happens relatively rarely, this tend to occur in the form of participation in state-funded offers at reduced cost.

In line with the patterns observed in most other surveyed countries, most US HGIEs (58%) are registered in the sectors Computer programming, consultancy and related activities (NACE 620), Architectural and engineering activities (NACE 711), and Management consultancy agencies (NACE 702). Remarkable, however, is the relative share of HGIEs, when compared to other firms in the same sectors. In the US, **only 2% of firms fit the criteria for being a HGIE**. The sectors where most US HGIEs are located do not form a real exception to this finding. With a very modest share of 6%, the highest proportion of HGIEs is found in the sector Manufacture of basic pharmaceutical products (NACE 211).

Looking at the size of USA HGIEs, they appear to be significantly larger than average US firms. If we look at all sectors, it seems that most firms in the US (78%) has 10-49 employees. In addition, 17% has 50-250 employees and 5% has over 250 employees. For HGIEs these numbers differ: only 55% of the HGIEs has 10-49 employees, 37% has 50-250 employees and 9% has over 250 employees. These differences are also observed in the three sectors in which most US HGIEs are to be found. In the three sectors, on average 81% of US enterprises have between 10-49 employees, 16% between 50 and

250 employees and only 3% has more than 250 employees. If we look at the HGIEs in these sectors it seems that only 57% has 10-49 employees. 37% of the HGIEs has 50-250 employees and 6% has more than 250 employees.

Although US HGIEs are so much larger than regular firms, they do not turn out to have a higher **age** as well. In fact, the HGIEs are younger than other US firms: while 28% of the latter group was founded before 1988, this is only the case for 21% of the HGIEs. Not only is the percentage of HGIEs being founded between 1988 and 2004 relatively high (62%, versus 43%), but also the share of firms established only between 2004 and 2008 (15%, versus 11%). On the other hand, the 1% of HGIEs founded after 2008 is much lower than the 6% of regular firms. Between the sectors with a large number of HGIEs, significant differences exist. Only 9% and 15% of HGIEs from Computer programming and Management consultancy agencies (respectively) is established before 1988, as opposed to 26% of the HGIEs from Architectural and engineering activities.

Finally, with respect to non-industry related specificities, the US HGIEs are characterized by the fact that more than half of them (51%) experienced its **growth particularly after 2008**. This growth might stem from the products sold to other companies, private households and the public sector. Relatively, the percentage sold to the latter (27% in the US) is above the cross-country average of 21%. However, the majority of products, 63%, is sold to other companies. Relatively few of these sales concern international markets. The 31% of US HGIEs stating that they **used specific support measures** from the state is below the cross-country average of 41%. Especially direct support is provided relatively scarcely (50%, versus 74%), whereas relatively many firms received state support in the form of participation in discounted state-funded offers (24% versus 15%).

Korea

In Korea, a small share of 2% of firms was found to be HGIEs. No industry sector was found to have a particularly large share of HGIEs in that sector. A relatively large share of Korean HGIEs is in manufacture of **communication equipment** as well as **manufacture of instruments and appliances**, reflecting the country's overall large shares of enterprises in these NACE categories. Medium-sized HGIEs were found to be over-represented compared to the share of all HGIEs in the data universe; the share of HGIEs in this size class was found to be 30 percentage points larger than expected. Korean HGIEs mainly sell to other companies, and the share of HGIEs having received state support is slightly smaller than in the other sample countries.

In Korea, a small share of 2% of firms was found to be HGIEs. Together with the US this was the smallest share in the sample countries. Most HGIEs stem from the industries of NACE 620 Computer programming, consultancy and related activities; NACE 711 Architectural and engineering activities and related technical consultancy; NACE 263 Manufacture of communication equipment; and NACE 265 Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks. The high shares of HGIEs from NACE 263 and 265 in all HGIEs are specificities of Korea, reflecting the overall large share of firms in these NACE categories in Korea. In Korea there is **no innovative industry with a particularly large share of HGIEs** within that industry. In all industries, particularly in those with a reasonable number of cases, the share of HGIEs is below 10%.

As regards **age**, HGIEs in Korea were found to be relatively young. Three quarters of HGIEs (77%) were founded between 1988 and 2004, which is the largest share of all countries in the sample, while the share of companies founded before 1988 was smaller than in other countries. Due to a very large share of firms in the universe with missing data for year of foundation (not so much for HGIEs in particular), no statements comparing HGIEs' age with the age of the overall Korean sample can be made.

Beyond industry specificities, Korean HGIEs **mainly sell to other companies** (Korean average 70% which is right the average of all survey countries). The share of Korean HGIEs that have used state support measures was slightly below average (36% compared to an average of 41%). In half of the Korean HGIEs (49%), **high growth started between 2004 and 2008**.

Japan

Specific conditions for analyses apply to Japan. Due to the small size of the Japanese sample with only 15 HGIEs and due to limited data breakdowns about the universe of firms and HGIEs, assessments of characteristics of Japanese HGIEs are very limited.

As in the other countries, Japanese HGIEs were found to mainly sell to other companies. The percentage of Japanese HGIEs saying they received state support was right the average of all sample countries. The share of HGIEs stating that their high growth started after 2008 was considerably larger than in the other countries which is however due to the fact that a quarter of the Japanese HGIEs in the sample was founded after 2008.

Annex 3: Data tables

5 Country comparison tables

Exhibit 5-1: HGIEs that are part of an international enterprise group by country, in %

	DE	FR	UK	PL	EU4	CH	US	KR	JP	Ø
Part of international enterprise group	12	20	10	14	14	10	13	30	(40)	15
Questionnaire reference: question C1. Figures for Japan tentative due to small number of cases.										

Exhibit 5-2: HGIEs' age by country – year of foundation in four groups, in %

Age group / foundation year	DE	FR	UK	PL	EU4	CH	US	KR	JP	Ø
Founded after 2008	0	0	0	0	0	0	3	0	(27)	2
Founded between 2004 and 2008	9	11	8	16	11	13	18	14	(47)	14
Founded between 1988 and 2003	66	60	69	55	63	62	51	70	(13)	59
Founded before 1988	23	29	21	24	25	26	27	14	(13)	24
Total	98	100	98	95	99	100	99	98	100	99
Questionnaire reference: question G1. Difference to 100% due to answers of "don't know". Figures for Japan tentative due to small number of cases.										

Exhibit 5-3: Year when high growth of HGIEs started, in five groups, by country, in %

Year when high growth started	DE	FR	UK	PL	EU4	CH	US	KR	JP	Ø
High growth started after 2008	48	35	53	40	44	39	51	42	(71)	46
High growth started 2004-2008	40	45	38	52	43	56	45	49	(21)	44
High growth started 1998-2003	10	13	8	4	9	0	4	7	(0)	7
High growth started before 1998	2	5	1	4	3	6	0	2	(7)	3
Total	100	100	100	100	100	100	100	100	100	100
Questionnaire reference: question C5. Figures for Japan tentative due to small number of cases.										

Exhibit 5-4: HGIEs' growth factors ("applies fully") by country in %

Growth factor	DE	FR	UK	PL	EU4	CH	US	KR	JP	Ø
Business cycle has been favourable for our company	36	35	35	41	36	31	41	11	(13)	34
Our company sells to a growing market	45	52	39	37	44	36	44	27	(40)	42
Our company has been facing strong competition	40	48	46	61	47	51	57	41	(47)	50
Our company's directors actively target growth	70	64	82	94	75	77	75	70	(60)	74
Our company has particularly highly skilled employees	82	79	83	65	79	90	75	55	(47)	76
Our company has had easy access to external financing	17	27	12	14	18	23	25	30	(47)	22
Our company successfully introduced new products or services	59	57	54	61	57	56	53	45	(33)	54
Our company successfully introduced new business processes	41	21	49	51	39	54	47	32	(47)	41
Our company successfully introduced new marketing methods	25	16	33	24	24	33	34	9	(27)	26
Our company successfully introduced new forms of organising business	17	24	36	29	26	18	42	14	(47)	29
Our company successfully entered new international markets	20	21	31	27	24	28	28	14	(7)	24

Questionnaire reference: question D2. Figures for Japan tentative due to small number of cases.

Exhibit 5-5: Spin-offs in the HGIEs by country, in %

	DE	FR	UK	PL	EU4	CH	US	KR	JP	Ø
Spin-offs	11	18	19	10	15	15	9	14	(47)	14
<i>Thereof:</i>										
From university	55	22	19	0	26	33	21	0	(14)	25
From other public research organisation	45	17	0	20	18	17	14	0	(14)	17
From another company	55	56	75	100	66	67	64	100	(29)	71

Questionnaire reference: question G2. Difference to 100% due to answers of "don't know". Figures for Japan tentative due to small number of cases.

Exhibit 5-6: HGIEs' average share of goods sold to target group by country in %

Customer groups	DE	FR	UK	PL	EU4	CH	US	KR	JP	Ø
Other companies	75	79	69	67	74	71	63	70	(79)	70
Private households	8	5	9	10	8	11	11	11	(21)	9
Public sector	17	16	21	23	19	18	27	19	(0)	21
Total	100	100	100	100	100	100	100	100	100	100

Questionnaire reference: question G3. Difference to 100% due to answers of "don't know". Figures for Japan tentative due to small number of cases.

Exhibit 5-7: Most significant sales markets of HGIEs by country, in %

Most significant sales market	DE	FR	UK	PL	EU4	CH	US	KR	JP	Ø
International	35	24	26	18	15	44	18	30	(0)	17
National	54	60	60	53	57	31	59	68	(87)	57
Regional	10	16	13	27	27	28	21	2	(13)	25
Total	99	100	99	98	99	100	98	100	100	99

Questionnaire reference: question G5. Difference to 100% due to answers of "don't know". Figures for Japan tentative due to small number of cases.

Exhibit 5-8: Private equity and venture capital in HGIEs by country, in %

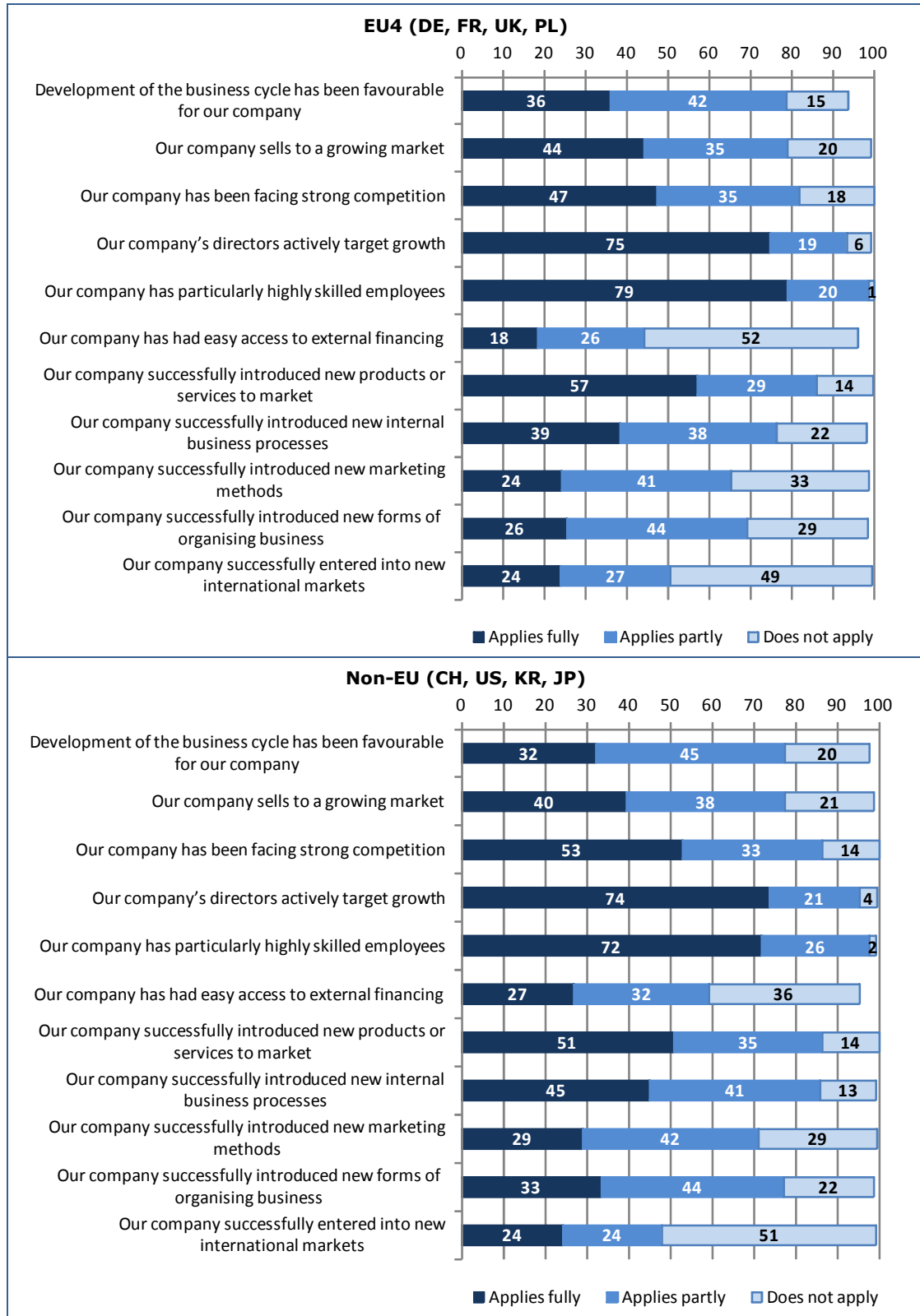
Asset	DE	FR	UK	PL	EU4	CH	US	KR	JP	Ø
Private equity	13	28	19	67	27	28	23	7	(47)	25
Venture capital	12	12	2	10	9	28	11	18	(7)	12

Questionnaire reference: question G7. Figures for Japan tentative due to small number of cases.

6 Country tables: reasons for growth

EU4 versus non-EU countries

Exhibit 6-1: Reasons for growth in HGIEs (EU4 versus non-EU countries) in %



Source: empirica, HGIE survey 2013

Germany

Exhibit 6-2: Reasons for growth in HGIEs in Germany in %

Indicator	Applies fully	Applies partly	Does not apply
Development of the business cycle has been favourable for our company	36	44	18
Our company sells to a growing market	45	40	14
Our company has been facing strong competition	40	35	25
Our company's directors actively target growth	70	23	7
Our company has particularly highly skilled employees	82	17	1
Our company has had easy access to external financing	17	24	53
Our company successfully introduced new products or services to market	59	31	10
Our company successfully introduced new internal business processes	41	43	15
Our company successfully introduced new marketing methods	25	44	30
Our company successfully introduced new forms of organising business	17	47	36
Our company successfully entered into new international markets	20	27	52

N = 100 enterprises from Germany whose number of employees grew more than one third in a period of three years in the past five years. Reference number in questionnaire: question D2. Differences to 100% due to "don't know".

France

Exhibit 6-3: Reasons for growth in HGIEs in France in %

Indicator	Applies fully	Applies partly	Does not apply
Development of the business cycle has been favourable for our company	35	38	14
Our company sells to a growing market	52	29	18
Our company has been facing strong competition	48	38	13
Our company's directors actively target growth	64	24	9
Our company has particularly highly skilled employees	79	20	1
Our company has had easy access to external financing	27	33	35
Our company successfully introduced new products or services to market	57	27	16
Our company successfully introduced new internal business processes	21	32	42
Our company successfully introduced new marketing methods	16	26	55
Our company successfully introduced new forms of organising business	24	33	39
Our company successfully entered into new international markets	21	34	43

N = 100 enterprises from Germany whose number of employees grew more than one third in a period of three years in the past five years. Reference number in questionnaire: question D2. Differences to 100% due to "don't know".

United Kingdom

Exhibit 6-4: Reasons for growth in HGIEs in the UK in %

Indicator	Applies fully	Applies partly	Does not apply
Development of the business cycle has been favourable for our company	35	46	15
Our company sells to a growing market	39	36	25
Our company has been facing strong competition	46	39	14
Our company's directors actively target growth	82	14	4
Our company has particularly highly skilled employees	83	14	2
Our company has had easy access to external financing	12	18	67
Our company successfully introduced new products or services to market	54	25	20
Our company successfully introduced new internal business processes	49	36	15
Our company successfully introduced new marketing methods	33	49	18
Our company successfully introduced new forms of organising business	36	44	18
Our company successfully entered into new international markets	31	24	45
N = 100 enterprises from Germany whose number of employees grew more than one third in a period of three years in the past five years. Reference number in questionnaire: question D2. Differences to 100% due to "don't know".			

Poland

Exhibit 6-5: Reasons for growth in HGIEs in Poland in %

Indicator	Applies fully	Applies partly	Does not apply
Development of the business cycle has been favourable for our company	41	41	10
Our company sells to a growing market	37	33	29
Our company has been facing strong competition	61	18	20
Our company's directors actively target growth	94	6	0
Our company has particularly highly skilled employees	65	35	0
Our company has had easy access to external financing	14	29	57
Our company successfully introduced new products or services to market	61	35	4
Our company successfully introduced new internal business processes	51	41	6
Our company successfully introduced new marketing methods	24	51	24
Our company successfully introduced new forms of organising business	29	57	14
Our company successfully entered into new international markets	27	14	59
N = 49 enterprises from Poland whose number of employees grew more than one third in a period of two years in the past five years. Reference number in questionnaire: question D2. Differences to 100% due to "don't know".			

Further breakdowns for Poland are not possible because of a too small number of enterprises in the survey.

Switzerland

Exhibit 6-6: Reasons for growth in HGIEs in Switzerland in %

Indicator	Applies fully	Applies partly	Does not apply
Development of the business cycle has been favourable for our company	31	51	18
Our company sells to a growing market	36	41	23
Our company has been facing strong competition	51	36	13
Our company's directors actively target growth	77	23	0
Our company has particularly highly skilled employees	90	10	0
Our company has had easy access to external financing	23	26	38
Our company successfully introduced new products or services to market	56	23	21
Our company successfully introduced new internal business processes	54	31	15
Our company successfully introduced new marketing methods	33	38	28
Our company successfully introduced new forms of organising business	18	44	38
Our company successfully entered into new international markets	28	21	51
N = 39 enterprises from Switzerland whose number of employees grew more than one third in a period of three years in the past five years. Reference number in questionnaire: question D2. Differences to 100% due to "don't know".			

Further breakdowns for Switzerland are not possible because of a too small number of enterprises in the survey.

US

Exhibit 6-7: Reasons for growth in HGIEs in the US in %

Indicator	Applies fully	Applies partly	Does not apply
Development of the business cycle has been favourable for our company	41	36	23
Our company sells to a growing market	44	33	22
Our company has been facing strong competition	57	27	15
Our company's directors actively target growth	75	18	6
Our company has particularly highly skilled employees	75	24	1
Our company has had easy access to external financing	25	25	48
Our company successfully introduced new products or services to market	53	33	14
Our company successfully introduced new internal business processes	47	38	14
Our company successfully introduced new marketing methods	34	38	28
Our company successfully introduced new forms of organising business	42	36	20
Our company successfully entered into new international markets	28	17	55
N = 150 enterprises from the US whose number of employees grew more than one third in a period of three years in the past five years. Reference number in questionnaire: question D2. Differences to 100% due to "don't know".			

Korea*Exhibit 6-8: Reasons for growth in HGIEs in Korea in %*

Indicator	Applies fully	Applies partly	Does not apply
Development of the business cycle has been favourable for our company	11	68	18
Our company sells to a growing market	27	50	23
Our company has been facing strong competition	41	55	5
Our company's directors actively target growth	70	27	2
Our company has particularly highly skilled employees	55	43	0
Our company has had easy access to external financing	30	61	2
Our company successfully introduced new products or services to market	45	45	9
Our company successfully introduced new internal business processes	32	59	9
Our company successfully introduced new marketing methods	9	61	27
Our company successfully introduced new forms of organising business	14	75	11
Our company successfully entered into new international markets	14	48	36
N = 44 enterprises from Korea whose number of employees grew more than one third in a period of three years in the past five years. Reference number in questionnaire: question D2. Differences to 100% due to "don't know".			

Japan*Exhibit 6-9: Reasons for growth in HGIEs in Japan in %*

Indicator	Applies fully	Applies partly	Does not apply
Development of the business cycle has been favourable for our company	13	53	7
Our company sells to a growing market	40	47	7
Our company has been facing strong competition	47	27	27
Our company's directors actively target growth	60	33	7
Our company has particularly highly skilled employees	47	33	13
Our company has had easy access to external financing	47	40	7
Our company successfully introduced new products or services to market	33	60	7
Our company successfully introduced new internal business processes	47	40	13
Our company successfully introduced new marketing methods	27	33	40
Our company successfully introduced new forms of organising business	47	27	27
Our company successfully entered into new international markets	7	27	60
N = 15 enterprises from Japan whose number of employees grew more than one third in a period of three years in the past five years. Reference number in questionnaire: question D2. Differences to 100% due to "don't know".			

7 Sector tables

The sector tables do not include data for Japan.

Exhibit 7-1: HGIEs' growth factors ("applies fully") by sector in %

NACE group	201	265	465	582	620	641	701	702	711	721	M	S	All
Growth factor													
Business cycle has been favourable for our company	28	35	24	40	38	18	32	40	44	26	33	35	35
Our company sells to a growing market	39	42	38	40	49	14	21	43	44	35	41	40	42
Our company has been facing strong competition	56	44	62	40	53	61	58	51	48	37	47	51	50
Our company's directors actively target growth	72	79	79	75	72	82	63	79	78	65	77	75	75
Our company has particularly highly skilled employees	44	79	66	85	79	79	37	89	81	95	71	80	77
Our company has had easy access to external financing	22	23	28	30	20	29	53	21	19	9	23	22	21
Our company successfully introduced new products or services to market	33	70	59	55	60	57	47	47	35	58	61	51	55
Our company successfully introduced new internal business processes	44	40	24	50	44	46	42	37	38	37	41	39	41
Our company successfully introduced new marketing methods	33	23	24	25	29	39	5	31	22	16	25	25	26
Our company successfully introduced new forms of organising business	33	21	17	25	31	32	26	37	22	21	24	28	28
Our company successfully entered into new international markets	22	42	14	15	26	11	11	17	17	30	37	20	25
M = Manufacturing sectors' average; S = Service sectors' average. 201 Manufacture of basic chemicals, fertilisers and nitrogen compounds, plastics & synthetic rubber in primary forms 265 Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks 465 Wholesale of information and communication equipment 582 Software publishing 620 Computer programming, consultancy and related activities 641 Monetary intermediation 701 Activities of head offices 702 Management consultancy activities 711 Architectural and engineering activities and related technical consultancy 721 R&D on natural sciences and engineering													

Exhibit 7-2: HGIEs by sector and size class in % of all companies

Size class	NACE group	201	265	465	582	620	641	701	702	711	721	M	S	All
10-49 employees		61	61	48	65	49	50	42	76	58	63	61	58	57
50-249 employees		39	35	38	35	40	46	42	20	34	28	36	34	34
250 employees or more		0	4	14	0	10	4	16	4	8	9	3	8	9

M = Manufacturing sectors' average; S = Service sectors' average.
201 Manufacture of basic chemicals, fertilisers and nitrogen compounds, plastics & synthetic rubber in primary forms
265 Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks
465 Wholesale of information and communication equipment
582 Software publishing
620 Computer programming, consultancy and related activities
641 Monetary intermediation
701 Activities of head offices
702 Management consultancy activities
711 Architectural and engineering activities and related technical consultancy
721 R&D on natural sciences and engineering

Exhibit 7-3: HGIEs by sector and age groups (foundation years) in % of all companies

Size class	NACE group	201	265	465	582	620	641	701	702	711	721	M	S	All
Founded after 2008		6	2	0	0	0	0	5	0	0	0	3	0	1
Founded 2004-2008		22	9	0	20	15	11	11	16	9	16	12	13	13
Founded 1988-2003		39	60	62	65	77	25	53	76	55	51	55	62	61
Founded before 1988		33	30	34	15	8	64	26	7	32	33	31	23	24

M = Manufacturing sectors' average; S = Service sectors' average.
201 Manufacture of basic chemicals, fertilisers and nitrogen compounds, plastics & synthetic rubber in primary forms
265 Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks
465 Wholesale of information and communication equipment
582 Software publishing
620 Computer programming, consultancy and related activities
641 Monetary intermediation
701 Activities of head offices
702 Management consultancy activities
711 Architectural and engineering activities and related technical consultancy
721 R&D on natural sciences and engineering

Exhibit 7-4: HGIEs by sector and groups of years when fast growth started in % of all companies

Size class	NACE group	201	265	465	582	620	641	701	702	711	721	M	S	All
High growth started after 2008		50	46	45	10	42	46	47	46	41	58	47	44	45
High growth started 2004-2008		22	44	38	65	42	46	47	42	45	26	39	42	45
High growth started 1998-2003		0	4	7	5	12	4	5	9	12	7	3	9	7
High growth started before 1998		0	2	3	10	8	4	0	1	1	7	1	3	2
M = Manufacturing sectors' average; S = Service sectors' average. 201 Manufacture of basic chemicals, fertilisers and nitrogen compounds, plastics & synthetic rubber in primary forms 265 Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks 465 Wholesale of information and communication equipment 582 Software publishing 620 Computer programming, consultancy and related activities 641 Monetary intermediation 701 Activities of head offices 702 Management consultancy activities 711 Architectural and engineering activities and related technical consultancy 721 R&D on natural sciences and engineering														

Exhibit 7-5: HGIEs by sector and spin-off type in %

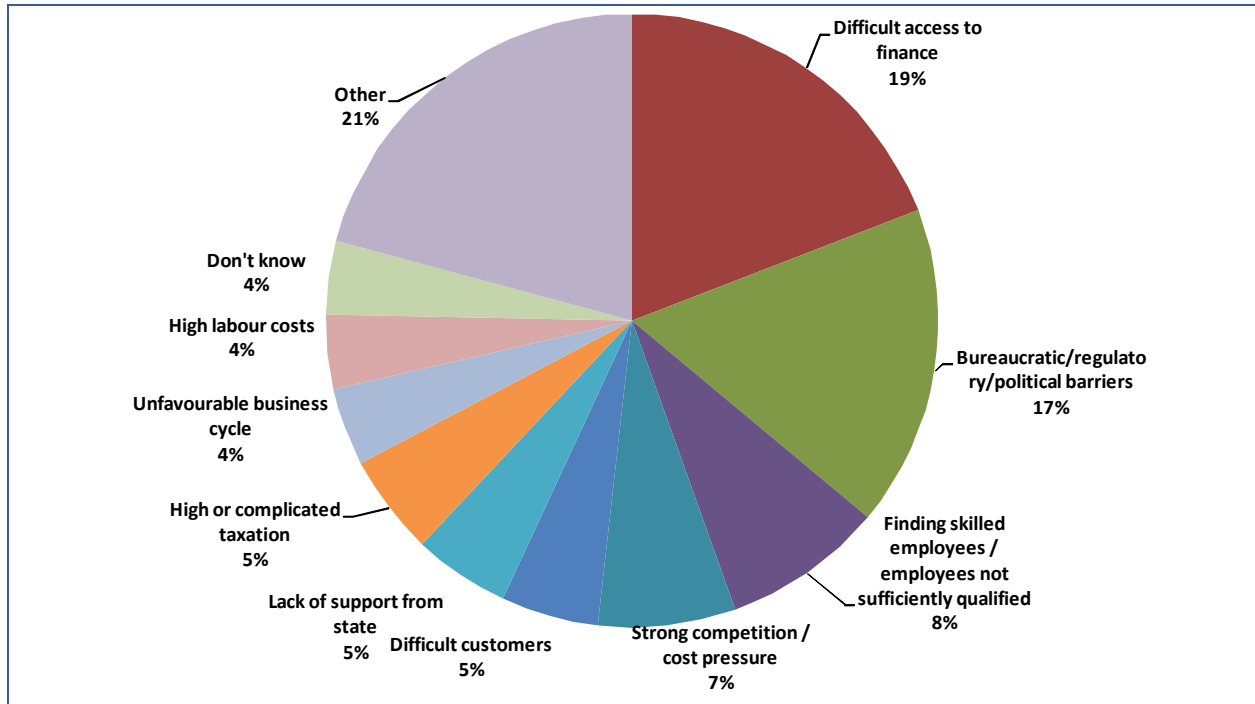
Size class	NACE group	201	265	465	582	620	641	701	702	711	721	M	S	All
Spin-offs		n.a.	21	n.a.	n.a.	15	n.a.	n.a.	n.a.	12	26	17	14	13
<i>Thereof:</i>														
From university		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	23	25	24
From public research organisation other than university		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	15	17	16
From another company		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	77	63	68
Total		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	132	119	121
n.a. = not available due to small number of cases. M = Manufacturing sectors' average; S = Service sectors' average. 201 Manufacture of basic chemicals, fertilisers and nitrogen compounds, plastics & synthetic rubber in primary forms 265 Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks 465 Wholesale of information and communication equipment 582 Software publishing 620 Computer programming, consultancy and related activities 641 Monetary intermediation 701 Activities of head offices 702 Management consultancy activities 711 Architectural and engineering activities and related technical consultancy 721 R&D on natural sciences and engineering														

Source: HGIE Survey 2013

8 Statements about “main barriers” to growth by country

EU countries (Germany, France, United Kingdom, Poland)

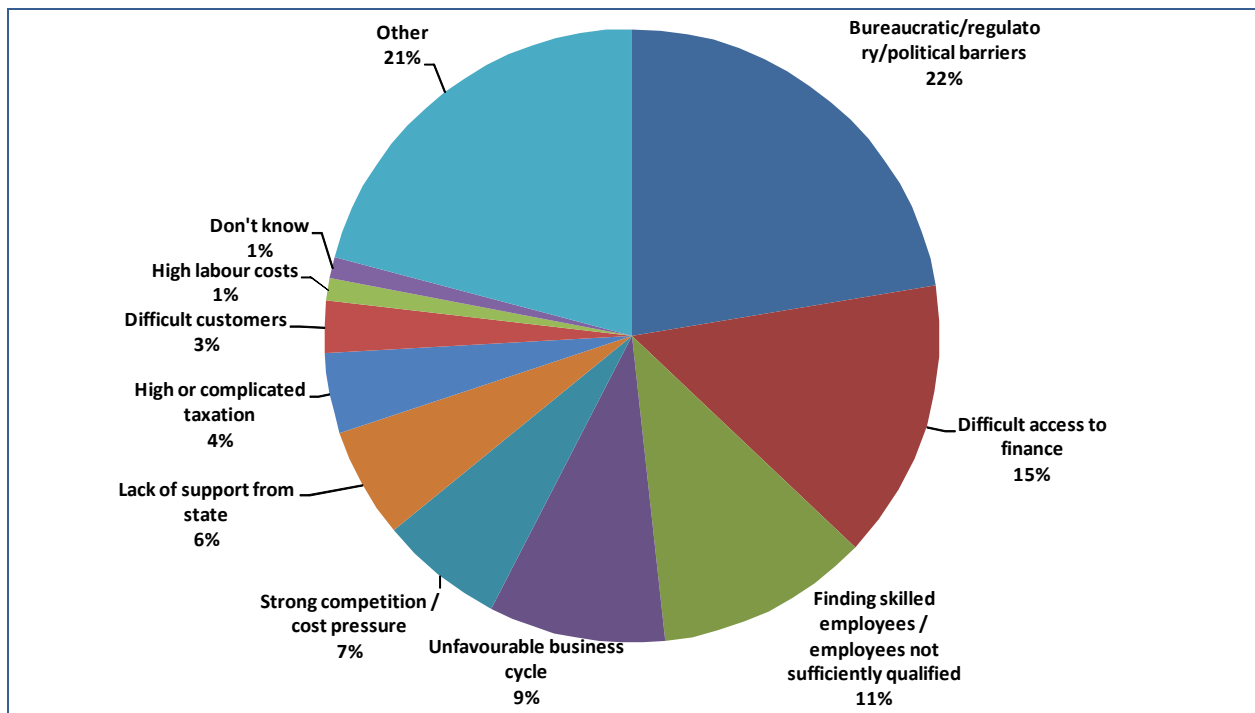
Exhibit 8-1: Perceived barriers for HGIEs’ growth in EU countries (in % of all answers)



Source: HGIE survey 2013

Non-EU countries (Switzerland, US, Korea, Japan)

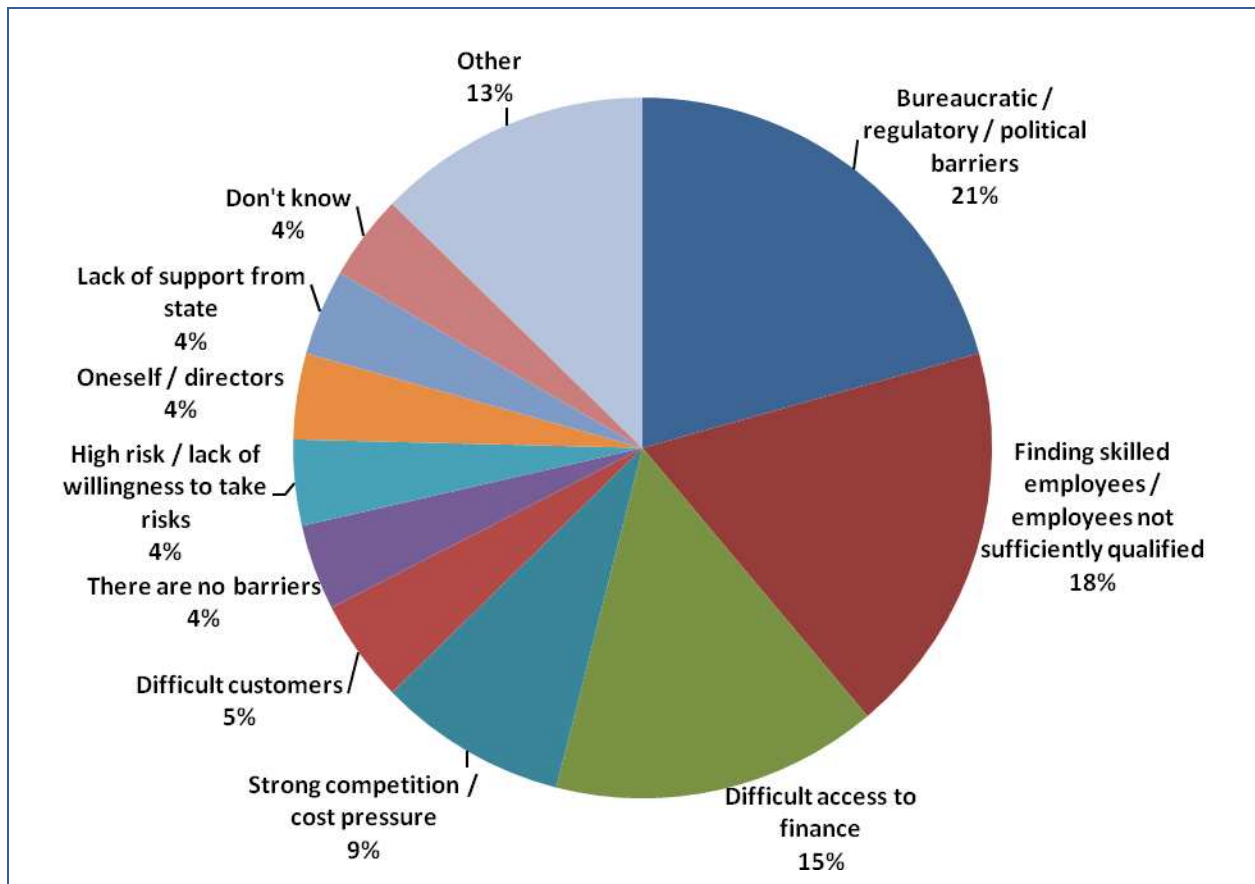
Exhibit 8-2: Perceived barriers for HGIEs’ growth in non-EU countries (in % of all answers)



Source: HGIE survey 2013

Germany

Exhibit 8-3: Perceived barriers for HGIEs' growth in Germany (in % of all answers)



Source: HGIE survey 2013

The statements in the following were made by German HGIEs in the HGIE survey 2013. They are answers to an open-ended question (D4): "In a few words: What is in your opinion the main obstacle in Germany for innovative companies to grow?" The answers were provided in the national language and translated by the study team. The answers are listed in the sequence of interviews carried out. Each table cell represents answers from one interviewee.

Bureaucracy, numerous authorities and therefore in the end also cartels are in charge of approvals; this is very laborious.
Personell
Bureaucracy, inconceivable legal barriers (regulations), e.g. you don't get visas for visitors from China.
The biggest barrier is to get round/to take the time to canvass for new customers; business cycle; to find qualified staff; what is crucial are your own skills/is your own competence
The public procurement is nearly solely geared to the lowest price and does this regardless of the type of the task/work; the numerous public authorities often violate the directives of tendering (price-performance ratio – this is being ignored).
To build international business relations
Cost pressure
Competition and shortage of manpower in computer sciences.
Mature managers
High level of administrative burden
don't know

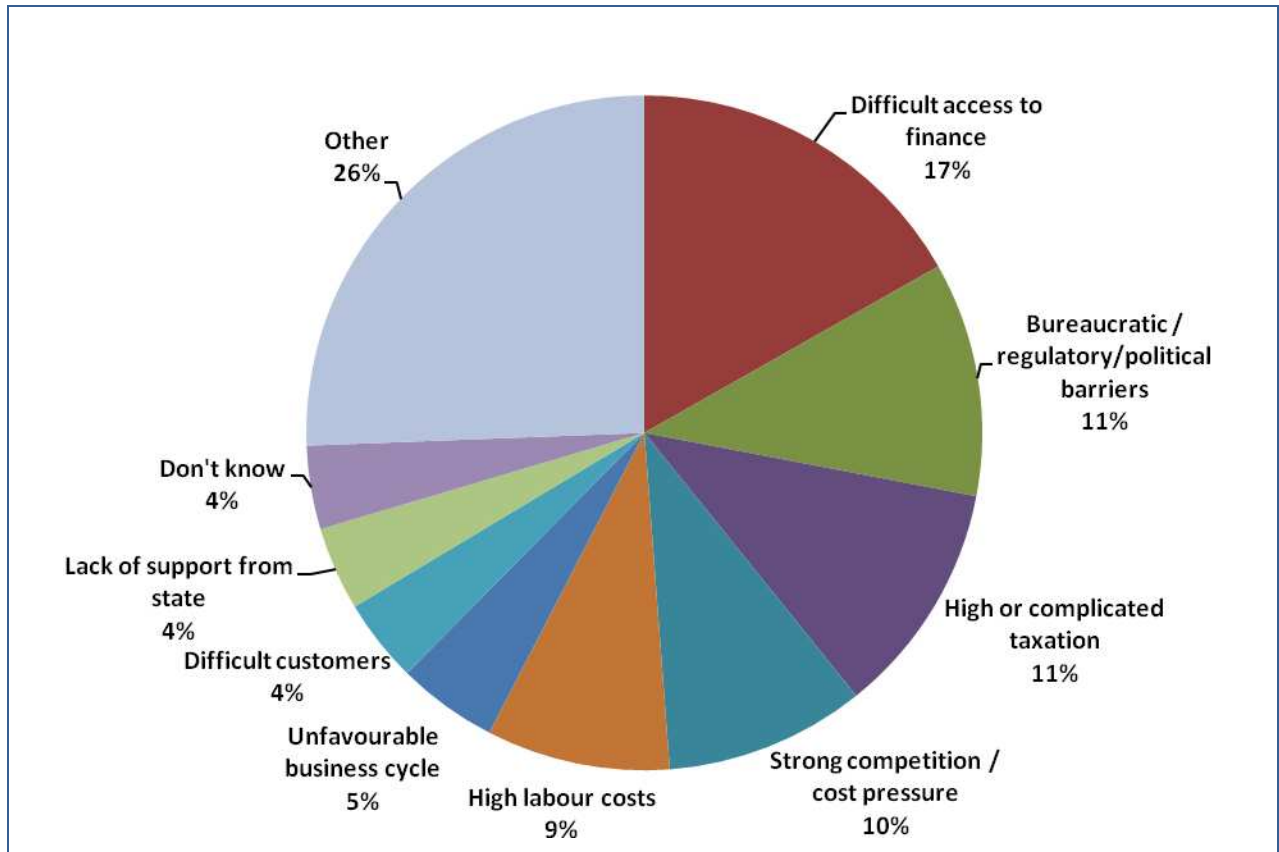
Too little support for us as a limited liability company (LLC) in contrast to e.g. 'Fraunhofer institutes'.
Too slow development, lagging behind the market
The necessity of investing in order to be 'up-to-date'
Qualified staff in the technology sector
Regulations, bureaucracy, we are subject to two different supervisory authorities, the necessity to make a complete balance, heavily increasing regulations at six-month intervals
Sluggishness
The unstable financial situation, too few dare to invest in capital goods
Financing
the competition, the pace you have to keep up
What is worst is the legal uncertainty in the EU. Due to the ECB there is a massive/severe loss of confidence.
There is the tendency that development expenses are no longer assumed. Because of this, it is difficult to launch new products.
The labour market
qualified staff
to find qualified staff
The price fight on the market
The market success of a company lies in the innovation itself. I do not see any barriers.
there are no barriers
Politics, the slow and unsteady decision of politics
oneself
Legal regulations, high administrative expense/workload
Being afraid of your own courage
the belief of investors
Financing is the biggest barrier.
Don't know.
The complexity of products – we operate in the energy market which is highly depending on the respective legal framework.
To find personnel/staff, the associates'/shareholders' willingness to take risks.
no barriers
Financing
I cannot think of any barrier.
Fiscal and administrative processes (rules/regulations, legal frameworks and regulations)
Access to research funds
Lack of qualified staff
National statutory provisions and – what is worse – European bureaucracy. Low awareness of marketing in the companies. Little appreciation of SMEs from the perspective of the national economy. To major corporations, the shareholder value is more important than SMEs. The focus on stock value is too large.
Access to finance
High investment costs and thus the associated risks.
Shortage of skilled employees, willingness to take risks when financing innovative ideas (this is where the willingness to take risks particularly lacks).
Barriers on the legislator's side (Renewable Energies Act [EEG] in Germany)
I don't know.
Qualified staff (in the field of engineering)
Customers'/consumers' wait-and-see attitude. Fears for the future/uncertainties.
The lack of investment/funds for development
Social legislation and laws on working hours
1. The shortage of skilled employees 2. The political uncertainty in planning, keyword: agriculture 3. Putting research findings into practice is stony/hard.
Our customers' decision makers (executives/managers) often are older than 60 and have a low affinity to digital media (insurance business)

Pre-financing of products that are to be launched
The staff
Lack of financing options for good ideas, lack of willingness to take risks, particularly at SMEs.
Administrative frameworks, norms, price regulations
Competition
Lack of money (especially for new ideas)
Partly very conservative decision-making processes of potential customers. The customers preferably stick to well-tried products and fear the risk of innovative products.
Insufficient support from the state; too much bureaucracy, e.g. when it comes to loans
Essentially, the financial viability of projects
Local legislation, protectionism.
Bureaucracy, new and uncertain laws coming up in the future, permanent political changes, uncertainty of investments on the market (generally), nobody knows where to
Lack of qualified staff.
When visions are lacking, too strongly regulated market, lack of faith in god (church bank), wrong employees
Bureaucracy
To find target groups
Lack of employees' and trainees'/apprentices' qualifications. Little possibilities for initial financing. Difficult location selection. Lack of guiding visions of the management/management boards. Detrimental priorities of investors
Bureaucracy
Bureaucracy
Shortage of skilled employees. Unqualified new recruits . Since the introduction of the Bachelor's- / Master's degrees the university graduates lack development of personality and character (acting independently, taking responsibility), they are not ready and mature for the world of employment. Before the reform, this has been better.
Bureaucracy
We have hardly any barriers/bottlenecks to growth, I couldn't tell any aspect right now.
Competition
Availability of qualified staff/personnel.
Bureaucracy
To find suitable staff/personnel
Bureaucracy
Worldwide business cycle
The european financial crisis, bureaucratic obstacles, high duties: taxes and energy costs.
We are an educational service provider. Our customers – the companies – need to get sufficient support in the area of human resources development
Don't know.
Don't know.
Habitual processes and ways of thinking
Labour costs
Probably financing
Basically, skilled employees are lacking
Pricing and wage development
For us, the competition from Asia – thus the price.
Support for market launches
To acquire cost-effective money (financing) in the present times.
To acquire adequate financing
Internal processes, weaknesses in marketing, ignorance on the market (the customers do not know exactly what they want). The potential of the product is not yet transparent or unknown.
The biggest barrier lies in oneself. I do not have own barriers.
To find qualified staff

Your own competency/ability to launch innovations in such a way that they are well received. Innovations have to be oriented towards the market. The market has to be satisfied with the required/needed products.
 To organize financing, venture capital via the stock exchange

France

Exhibit 8-4: Perceived barriers for HGIEs' growth in France (in % of all answers)



Source: empirica, HGIE survey 2013

The statements in the following were made by French HGIEs in the HGIE survey 2013. They are answers to an open-ended question (D4): "In a few words: What is in your opinion the main obstacle in France for innovative companies to grow?" The answers were provided in the national language and translated by the study team. The answers are listed in the sequence of interviews carried out. Each table cell represents answers from one interviewee.

I think funding is difficult to obtain, not only from banks but also from other companies.
I don't see any.
Insufficient sales and marketing competence for SMEs
In my opinion, there is a lack of coordination and assistance support, that is to say that we are always running after them. There is also a lack of support from major groups, which accounts for a large proportion of subsidies. One could be more involved in large projects.
First of all the paperwork, for example to start a business, since in France you are asked to pay taxes before even achieving a turnover. Then the difficulty in accessing finance due to the reluctance of banks, who are reluctant to lend and are therefore not doing their job.
I think the biggest problem is the fear of mobility

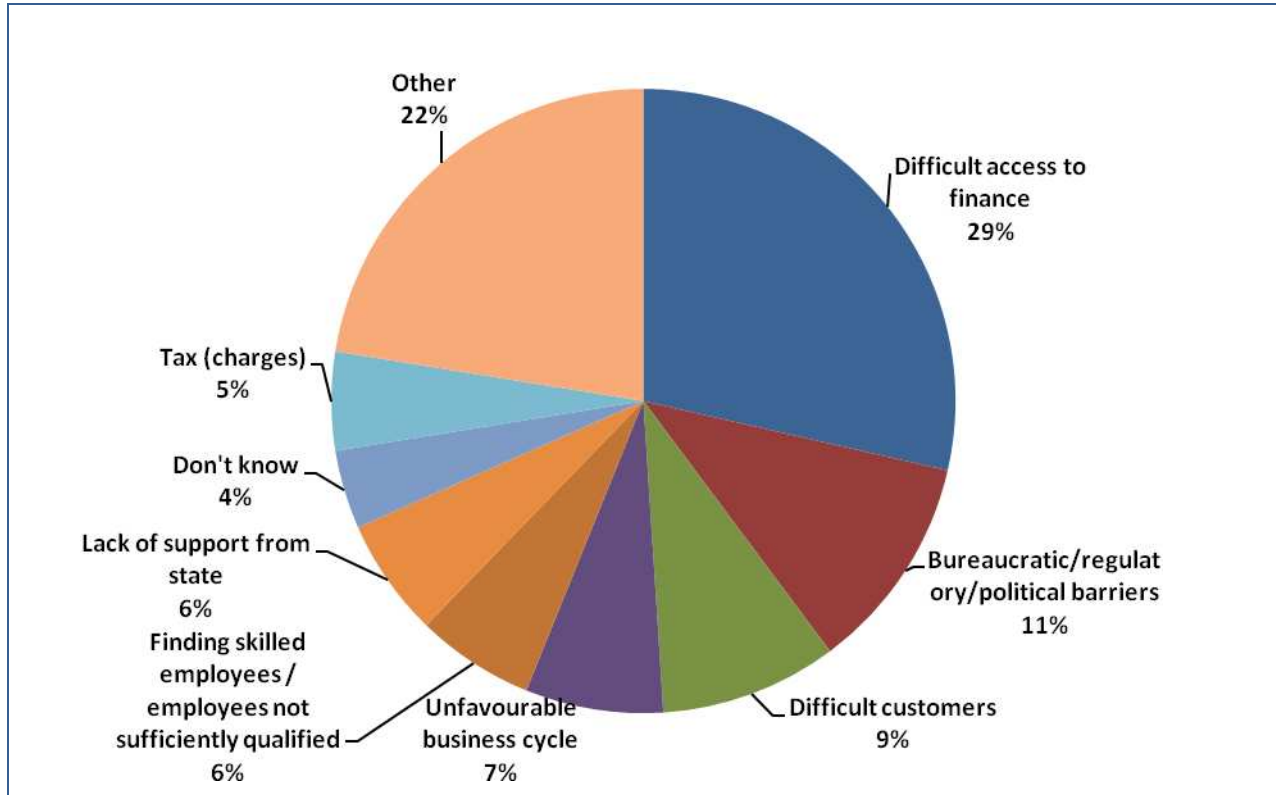
The big concern is managing to maintain the margins, there are big commercial investments raised in relation to the blocked prices for the past 5 or 6 years, a margin problem
Bankers are not courageous. Policies do not favour businesses. If I had to create a business today I would do it elsewhere.
Salary costs for specialised personnel. The wage costs for staff, that we have people trained and are extremely qualified
I can't say
The requirements of banking financing are difficult to obtain, the cost of charges, the social protection of each contract
The state (public policy taxation etc.)
Access to export
Personally I think that there is a lack of sales force in other companies; in my opinion, the government doesn't support SMEs enough.
I think it is a matter of clients who are quite unadventurous, who do not have the vision of a fairly long-term business, and thus block recruitment. The two successive economic crises of 2008 and 2012 also affected the investments of our clients with regard to our services.
Customer credit has penalised us enormously. We mostly work for the French state and have a payment period of 70 days. The slowdown in orders in general
A lot of social charges for wage earners and we're on the financial market in crisis since 2008
It is difficult to find qualified staff
Lack of bank financing // amount of social charges and taxation
The weight of the large group faced with SME (as a client)
Competition // Planning regulations
The competitiveness in relation to other global companies and a lack of flexibility in tax.
Initial costs for implementing innovation. The initial cost to implement the innovation.
Regulatory framework quite strict
The fact of raising awareness among customers.
Lack of ambition // Psychological barrier
Expenses, the difficulty of investing
The difficulty of access external financing
The competitiveness // financial instability
The cost of employees (Wages Bill)
Problem of recruitment: we have difficulty recruiting qualified and experienced staff within our business. We are facing considerable competition even at a recruitment level
International competition
Our customers are very conservative, not very dynamic (large firms) innovation is difficult because of this and because of lack of funding // access to finance is difficult /// a complicated framework programme has been set up // the executives as well as the engineers have a poor level of English
Labour cost, question unclear
Economic context complicates general economic situation
Payroll and tax system
Lack of equity // Difficulty in accessing finance
don't know
No insight into the medium-term outlook
The administrative and financial process

The cost of labour // administrative burden in relation to the business operation // intense procedures for the export of capstone projects
I don't know what to say
General environment
The mentality of bosses
Normally, the main obstacle is funding. This was not our case since we received a lot of government assistance. In our field (automotive), the French market is very careful and specific, which hampers it with regard to the international market.
Social security
Complexity of local markets, takes time and investment + travel costs + commercial development investment + request of confirmed profiles
We are in a target area // difficult to develop in such a small structure // structurally difficult
The cost of labour
Taxation
Critical mass, companies are too small. A lack of innovation on the part of firms.
The scope of the research and bid
Recruitment assistance too low // the effect of the threshold when the company exceeds 50 salaries has a negative influence
Taxes and also the red tape
Competition which plays on the prices competition between different companies in the same industry
Cash and financing (support)
It is a global dynamic // general context //
don't know
Charges
Competition // High employer charges // Labour law is not very flexible labour (condition of employment: it is difficult to have short-term contracts easily renewed // when one is part of a group, one doesn't always agree to)
The acceptance of companies to invest in new products
Economic crisis
General form competition
Administration, everything that relates to tax
Charges
Administrative burden
Export fear
The cost of labour
The access to finance
Problem of capital too low
The lack of funding our growth should be more important
Tax and social charges and the decline of activity
Charges
The access to risk capital, access to capital over one million euro
The crisis
The scope of work
Conditions related to equity and administrative regulation
Competition with emerging countries (China) // price of labour in France
The cost of work
Companies financial resources
Unfair competition due to taxation
lack of support at subsidy level, such as assistance in the recruitment of seniors. Subsidy records are hard to get, you need partners, grants are hard to get.

Charges // Administrative complexities // Cost prices are too high in France // Labour Law
Lack of investment capacity
Funding of research // competition with public services such as universities. As well as service society in internal research, the company finds it more difficult to obtain financing // the universities are competition
The reluctance of banks not involved in innovation
The administrative complexity of French make-up
Fees, taxes, charges
Finance and the industrial organisation of the RED, we are extremely academic, the development of the industry cannot be done that way in France, we are not sufficiently focused on the product
Regulatory aspects of the instability of the regulatory legislation // legislators do not have a global vision of our activity / this inconsistency is an obstacle // we are dependent on the selling price of electricity
Labour costs // we are overtaxed in France
Obstacle: funding of the innovation through operational profit
Taxation on companies is too high
Funding the balances of companies from the third year. The funding of the balance of companies from the third year
Purchasing power
In our situation, we must be in a growth phase. In our situation, we must be in a growth phase continuously
Too little aid, market focused on short-term returns
don't know
It is the lack of funds to develop // regulations demand huge sums patents etc

United Kingdom

Exhibit 8-5: Perceived barriers for HGIEs’ growth in the United Kingdom (in % of all answers)



Source: empirica, HGIE survey 2013

The statements in the following were made by British HGIEs in the HGIE survey 2013. They are answers to an open-ended question (D4): “In a few words: What is in your opinion the main obstacle in the United Kingdom for innovative companies to grow?” The answers were provided in English. The answers are listed in the sequence of interviews carried out. Each table cell represents answers from one interviewee.

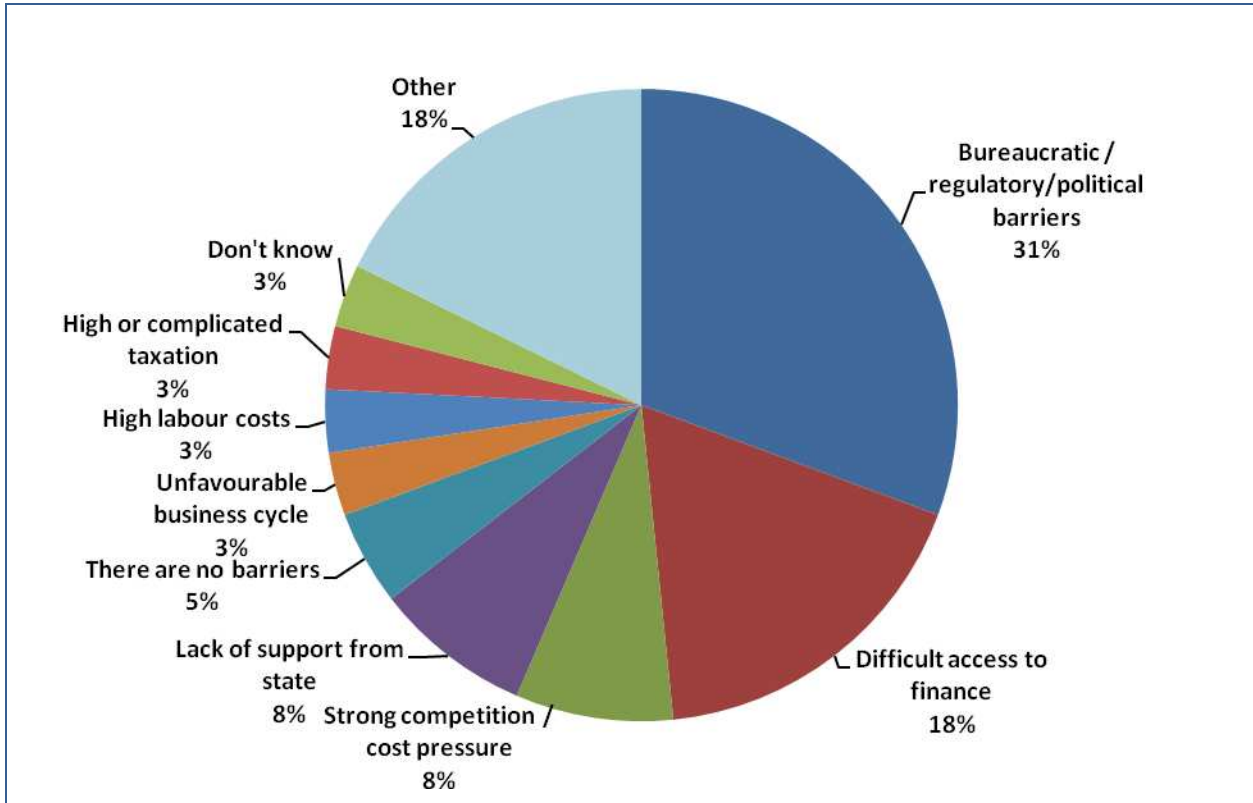
There is a reluctance to invest by customers
I think qualified technical staff are few and far between, i think finding innovative middle managers is also difficult
I believe it is the economic situation. It has contributed to less growth.
I think that the government and their attitude to manufacturing is harmful - namely planning, education, training, financing, and above all, the red tape attached to running a business, especially when you have employees.
Usually, it is access to investment.
I think it is the general sluggish economic growth
I think it is lack of investment.
For us it is the downturn in spending on preventive services for children and parents.
I would say it is access to cash. In order to grow you need money. Currently in the UK it is impossible to access money through banking.
I think it is an inability to access to key decision makers in an appropriate timeframe I think it is an inability to access key decision makers in an appropriate time frame
I would say finance, and market opportunity. We have changed our product focus and our vertical product sector focus. We are now in the oil and gas sector and we have opened offices in Canada.

The biggest problem for companies is not responding to digital developments
Cash flow
I believe it is regulation and taxation.
I consider funding issues to be the main obstacle.
I think the availability of corrupt finance
I consider regulations to be the primary obstacle to economic growth.
I think it is the lack of funding. People are not buying at the moment
I consider the following things to be the primary obstacles to economic growth - Red Tape/Bureaucracy, tax burdens and complicated P.A.Y.E. regulations.
I think the funding is always the issue for us
I believe it is lack of financial backing.
I think it is investment, government investment in research and development
I can only comment about my sector. Unnecessary regulation coming out of Brussels I can only comment about my sector, the financial sector. I am a hedge fund manager, and the worst thing in my view is unnecessary regulation coming out of Brussels.
I think the costs of employing people is a big barrier, tax costs, hiring foreign workers is also a constraint for us
I think recruitment of high skill staff
Ease of Lending, and skill shortages
I don't really have an answer to that.
Finance. We need to have access to evolving products and services
I would say over bearing compliance and legal frameworks. Top Down Government
Government spending
I think the biggest obstacle is a combination of two things. The B2b customers are less willing to spend on new products or projects which is in turn because they don't have as easy access to financing as before.
Although we are not badly affected but a lot of it is to do with financing, having the cash flow
I don't know I honestly don't know. Really can't say at this point in time.
I believe that there no obstacles
I believe showing costs savings to clients is the biggest obstacle.
For us it is the lack of lending of the banks
I think it's a lack of people able to the job, skilled workers. It's something to do with younger people, sometimes think they have to work for big corporations, big names. We are not known outside our industry so skilled workers don't find us, or they are risk averse. We're not perceived to be a safe pair of hands.
I believe is it government and local councils.
I believe there is an anti-British mentality for being British goods and Britain as a country has destroyed its manufacturing sector. If British companies can buy overseas they will.
I believe it is changes in funding structures from local and national government.
For us to grow it is stabilsation of local oil markets
We use government help, very often there are lots of hurdles to this. We often can't jump the right hurdles. For example, we are a high export company. Over 70 percent of what we do is exported. I don't think the support on the exporting is very good.
Does not know
Largely flexibility and availability of finance, and import export restrictions cause huge delays of deliveries
Situation in Europe is our biggest problem, no has any money
I believe that is the competition of the market, and finding new ways of growing.
A good sales team.
I think quality control is taking over from procurement.
Taxation
I never come across a problem that prevented us from growing
Don't know
The limit of good clients in our market
I believe that there is a lack of innovation.
Planning permission issues, and its getting harder to get external finance these days
Government policys that restrict us from doing thing freely that we in another world would like to do

I believe that the obstacle to growth is access to funds
I believe it is due to international competition.
The adoption of technology by the client base is too slow.
Lack of confidence in the market
Downturn in consumer spending
I think it would red tape
Compared to other countries I think it's mainly to do with lack of benefits, meaning tax benefits in respect of R&D development, the gov makes it so difficult compared to the US, for example.
For us I think we need to go out and talk to the clients and eventually they'll buy, but clients are more risk averse.
I believe that the main obstacle is lack of growth in customers ability to spend.
Afraid of change, regulation and red tape
I just think the economy is tough at the moment so there is less money around.
Access to external finance (Bank Loans) to fund growth
Government Policies (Limitations and regulations)
Tax
Funding
I would probably think that at the moment the position in the market is sensitive.
funding, coordination by government, and higher level, align grants and R&D funding to the innovative markets.
Finance
Quality and price. Our customers want low prices and high quality, and thats a struggle
I believe that main obstacle is management.
Finding skilled labour at the right level
I suppose the lack of clients willing to give smaller organisations the opportunity to talk to them. If we were Vodafone it'd be easier to get someone senior to spare time.
No money to spend in the uk, everyone wants as cheap as possible
I think the main obstacle is that of funding, only on the basis that the banks say the support businesses and the industry and when you approach them for support they don't help or set unrealistic criteria as the basis for help
I believe that main obstacle is work to pay ratio.
Compliance and regulations
Regional difficult to employ skilled persons
The availability to affordable finance; we can only grow if we have backing of our finance company
Funding

Poland

Exhibit 8-6: Perceived barriers for HGIEs’ growth in Poland (in % of all answers)



Source: empirica, HGIE survey 2013

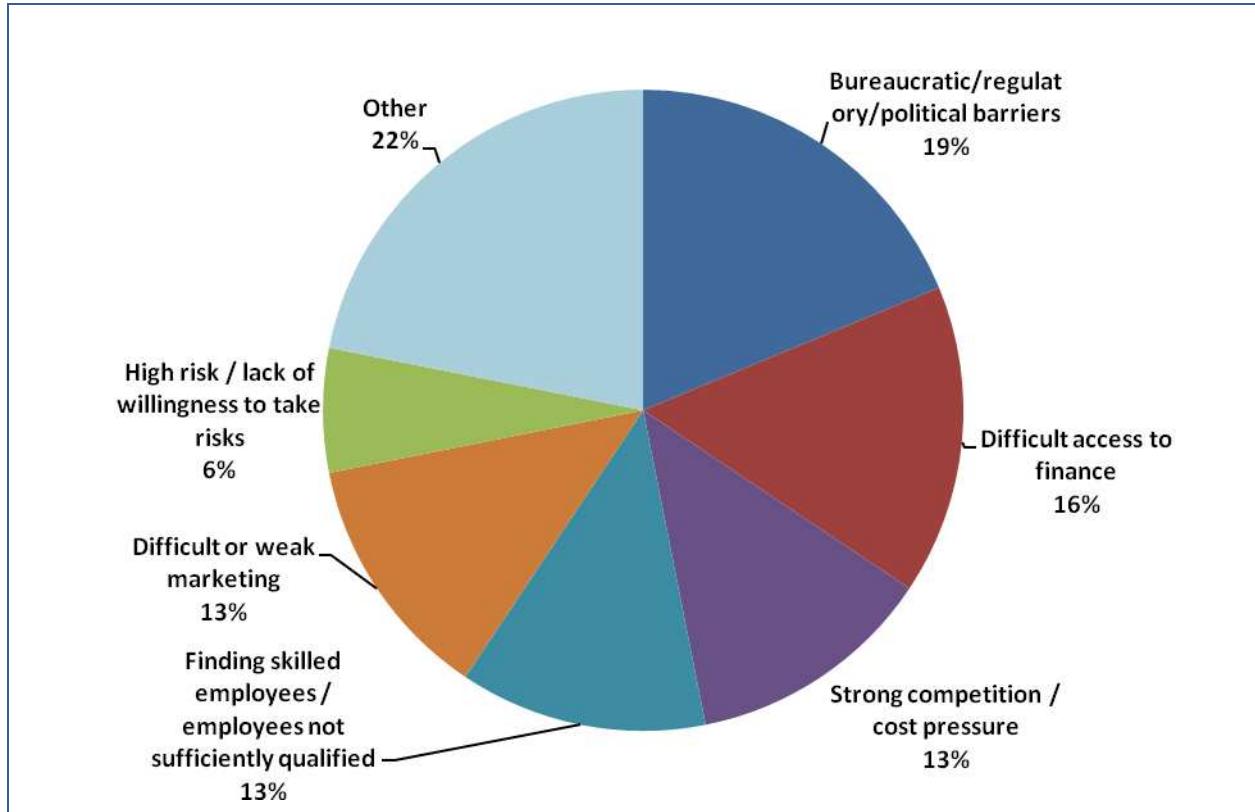
The statements in the following were made by Polish HGIEs in the HGIE survey 2013. They are answers to an open-ended question (D4): “In a few words: What is in your opinion the main obstacle in Poland for innovative companies to grow?” The answers were provided in Polish and translated by the study team. The answers are listed in the sequence of interviews carried out. Each table cell represents answers from one interviewee.

First of all, lack of skilled workers, despite high unemployment in our region. Attitude of the board, lack of courageous business decisions.
Bureaucracy and lack of financial support from the state.
Labour costs, very vague tax law. State stands in the way of enterprises.
The market does not want to reward innovation, at least in the beginning
The state
Daily struggle for existence.
The crisis, people don't pay.
The costs have to be incurred.
Bureaucracy.
No transfer of knowledge
Small state support for development, large burden due to labour, employment of workers
Unfair internal competition
Funding
Statutory difficulties i.e. regulations
hard to tell

Bureaucracy.
don't know
Lack of funding.
I did not have to deal with such a situation.
A multitude of different regulations.
No support for innovative companies.
I know nothing
Access to capital.
Dominance of international corporations on the market for innovative products
Regulations and law
Inefficient laws, which creates barriers, lack of clarity of solutions, complicated tax system
Surely this is a government policy which blocks the actions of certain companies. This means regulations not adapted to reality.
Bureaucratic barriers.
External regulations and labour costs, etc.
Bureaucracy
Lack of support from the state (relief and reduction). Innovation costs are too high
Competition
Difficult, lack of funding, problems with access
Impossibility of obtaining capital to hire employees
Investors choose general contractors very carelessly.
I think that there are many reasons for this. In the first place the access to capital. In general, there isn't enough money, also diversified, on the Polish market. Secondly, there are no role models, i.e. an entrepreneur who has achieved success is not a model to imitate but just the opposite, he is not respected in society and people try to entangle him in scandals. Thirdly, I think there are very low outlays on research and development of education, in order for the next generations to be well-qualified.
Polish law is weak, complex, vague, has many traps. Another obstacle is also the instability of the business cycle in agriculture which is the domain of our actions, to the economic situation.
It seems to me that there are problems in the financial sector. Growing businesses do not have easy access to sources of funding which affects their development. I mean, they do not have opportunities to market innovative ideas and new products.
Certainly obtaining capital. In our sector it is rather simple because we are subordinate to the government but other companies have a problem with it. We are present and operate in a specific sector, so we do not have a problem staying on the market.
We implement innovations at the clients'. But the status of funding of these innovations is unclear which is related to the difficulties of creating a business plan. Difficulties are associated with a set of laws such as the energy law
Lack of resources, lack of own capital, forms of funding
Self-financing, cooperation and competition, as it is.
Staff, access to new technologies.
SER 62 Bureaucracy hinders the development of companies the most.
Lack of modern technologies.
High cost of research and development.
Bureaucracy, excessive regulation by law.
I think this is poor organisation, leading to bad quality of service and lack of conscientiousness.
Certainly legal regulations which hamper the start of new companies and raising funds from various sources, e.g. the interest rate that companies receive is important. It is sometimes too high and cannot be handled

Switzerland

Exhibit 8-7: Perceived barriers for HGIEs’ growth in Switzerland (in % of all answers)



Source: empirica, HGIE survey 2013

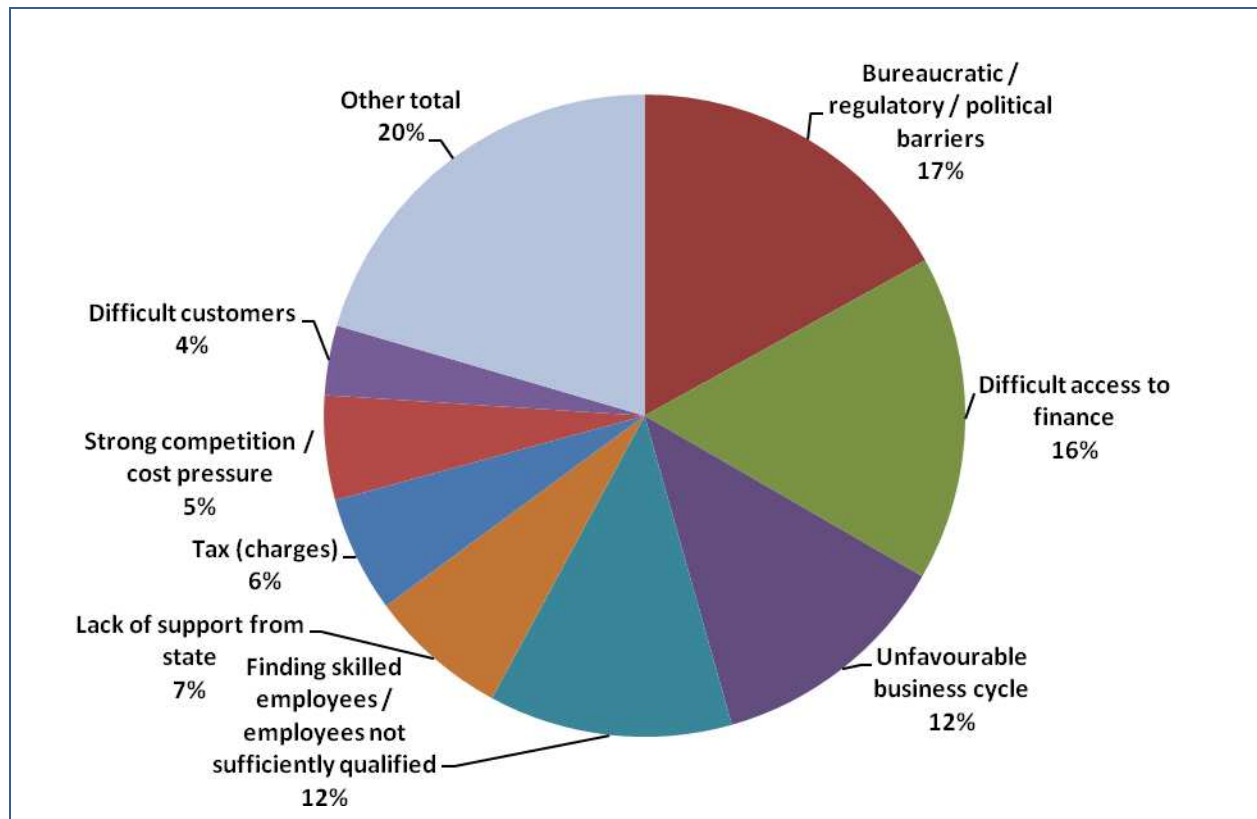
The statements in the following were made by Swiss HGIEs in the HGIE survey 2013. They are answers to an open-ended question (D4): “In a few words: What is in your opinion the main obstacle in Switzerland for innovative companies to grow?” The answers were provided in German and French and translated by the study team. The answers are listed in the sequence of interviews carried out. Each table cell represents answers from one interviewee.

It is the market.
It is mainly the issue of the final price, compared to the price of the labour and the exchange rate.
Over-regulation, bureaucracy and the evolution of the customers, greater products knowledge, it requires us to be competitive.
Easy access to funding has a capital risk, limited territorial extension = not necessarily any access to external markets and competition.
Lack of qualified staff.
Obtaining private financing.
Acquire sufficient presence in order to get to know the market.
Don't know.
Find qualified staff.
Difficulty in closely obtaining from the bank and a market that is small and lacks competition against the salary blow.
Asian competition.
For Start-ups – the raising of capital.
The smallness of the country; the market is limited due to the size.
The strong Swiss franc, the great competition.

The investors' readiness to assume risk.
Export restrictions and customs, the hostility towards Europe.
Financing, entrepreneurial thinking of banks.
Question of costs.
The swiss currency (rates of exchange.)
The expertise and skills in the organizations.
Product management, marketing concepts.
Access to capital.
You have to have the right product in the right segment; the high manufacturing costs are a barrier; the market in Switzerland is not very big.
My personal opinion: Financing in the initial phase at market entry is too difficult.
The dynamics of the market; technological progress and innovative capacity restrain growth.
To reach the customer, to know the problem.
Certain bureaucratic barriers; we as an organization stand in our own way (we do not widen our horizon, we remain in our self-constructed shell)
Third-party financing.
Financing; partly the long processes, the legal regulations until full market establishment.
Deficient demand in our home country.
The border, which means our exclusion from the European Union.
To find qualified staff in Switzerland; the overall cost structure is too high.
There are no barriers, a lot is feasible.
European legislation of matters of financing.
If you do not dare to enter international markets
The regulations, e.g. problems of taxation, illegal money, defiscalised money.
Readiness to assume risk.
Qualified staff.
There is a lack of qualified staff.

US

Exhibit 8-8: Perceived barriers for HGIEs’ growth in the US (in % of all answers)



Source: empirica, HGIE survey 2013

The statements in the following were made by US HGIEs in the HGIE survey 2013. They are answers to an open-ended question (D4): “In a few words: What is in your opinion the main obstacle in the US for innovative companies to grow?” The answers were provided in English. The answers are listed in the sequence of interviews carried out. Each table cell represents answers from one interviewee.

Difficulties in securing working capital under any circumstances. It's difficult to finance working capital even with a large backlog.
The lack of available capital.
Lack of availability of resources.
People and companies that are facing restricted funding.
The overall economy.
Nothing that I can think of.
Taxes and regulations.
The high tax rates.
Lack of Money
The regulations and the federal government.
The lack of funds.
Government regulations are different with us than with other companies because we are a bank, and government regulations are tough.
The competition in the industry.
Some real political support.
Access to finances.
The government is not doing anything to help economy in the U.S..

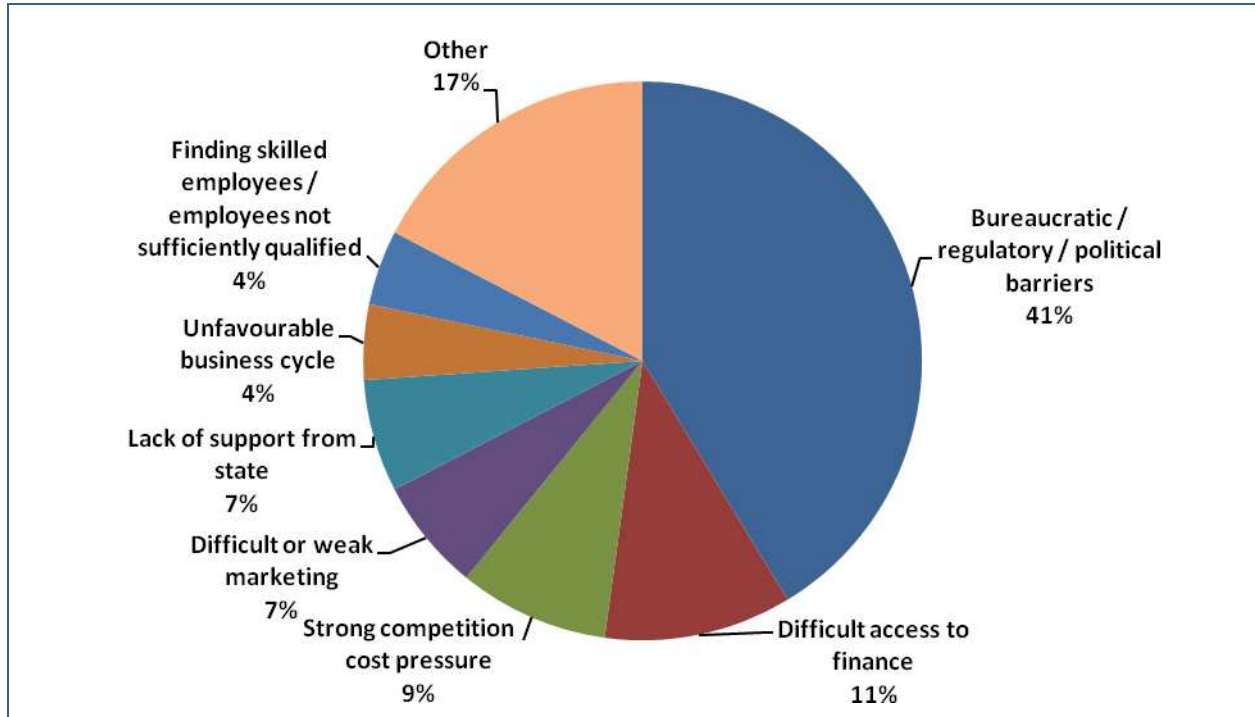
Too much out-sourcing going on.
No financing.
The main obstacle is availability of resources needed by any company at the start of business.
Find new customers and finding skills workers.
The business regulation in the U.S..
Staying ahead of technologies. Flexible, and a willingness to change.
Too much competition from other companies.
The lack of stronger and better clients.
The availability of more skilled workers.
Getting qualified employees in the right positions.
Access to clinical trials is a main obstacle.
The lack of economic growth.
The economy's lack of growth.
The business regulations is a main obstacle.
The lack of company infrastructure.
The amount of competition is too great.
Free market capitalism.
No access to capital.
The economy is a major factor that determines if the company has additional revenue.
The U.S. government.
The lack of customer service skills.
The economy is the main factor; it's not good enough.
The governmental regulation on business.
The high taxes and rules and regulations.
The regulation of taxation.
The main obstacle is allowing competition by having a cheap labor force.
The lack of federal grants or programs to stimulate growth.
Growing competition from other companies.
Regulatory issues.
It is too complex and there isn't just one; the economy and regulations.
The uncertain decisions relating to the government.
Difficulty in getting and keeping employees.
Uncertainty of federal budgets is an issue.
There's a lack of marketing themselves so the companies are known, and therefore can grow.
Competition with overseas companies in the market is a problem.
Health care implementations, the lack of them anyway.
They don't invest enough in training and improvement of employees.
Federal funding and budget can affect it.
No access to capital.
The lack of money.
The market penetration level is a main obstacle.
The better economy the more business contracts we get.
High medical insurance and taxes.
Difficulty in financing from banks when you are a small business.
Provide more services that people need.
I couldn't say.
Limit regulations that are put on the building components.
The U.S. government and its regulations.
The economy is a factor.
The economy is a main obstacle.
The funding that is available for use is the main obstacle, and taxes is an obstacle too.
No comment.
The acquiring of new technology is expensive.

The government interference.
Just being able to have a competitive advantage.
The tax burden is the problem.
The U.S. government's interference.
Lack of qualified labor pools.
The regulation on businesses.
Their access to capital is an obstacle.
A lack of creative thinking, and I think that corporate executives are way over paid. What they did in Switzerland was great.
The federal regulations.
The economy is a factor.
Regulation and government interaction.
I guess it would be that regulations hinder the business.
The lack of skilled employees in the market.
Lack of capital.
Health care, federal regulations.
The government regulations and taxes are main obstacles.
No access to capital, human and financial.
The business regulations from the government, and limited exposure.
Selling a new technology to unfamiliar users. They just don't know the benefits. Teaching customers about the product benefits is the main obstacle.
ITAR Government
It would be finding the right level of staff as far technical education and experience as well.
No availability of projects, funding and jobs.
The federal regulations on business is a main obstacle, and competitive moods of transports is another obstacle.
I believe it is more of the government regulations holding companies back.
Make it easier to get financing for businesses.
High regulation of government.
The government regulations is the main obstacle. Not just the US the problem is everywhere.
The economy is a main obstacle.
The business regulations is the main obstacle.
I would say what comes to mind is the regulatory environment of government regulations and taxes.
The oil prices.
The talent of people is hard to find in small communities.
Too much government involvement is holding back small business.
Finding skilled employees is the main obstacle.
Regulatory issues.
New patton laws is hurting small businesses.
The economy is a main obstacle.
I would have to say sustained growth of industry from manufacturers.
No comment.
The economy is a main obstacle.
I think getting skilled labor is very difficult right now.
The access to capital and big companies control the world; those are the main obstacles.
Having skilled employees is the main obstacle.
The economy is the main obstacle.
I think the high cost of healthcare and other benefits for high-skilled workers.
I think that it could be a number of factors, one of which could be the economy.
The government regulations is a main obstacle.
Reduced funding for foreign assistance.
There just isn't enough money out there for the customers to get the product they need.
Primarily work force attitudes as far as employee expectations and reality of employee work ethic.
Our conservative customer base is slow to move.

The US Government regulations and administration on business are the main obstacles.
Foreign competition and our massive amount of attorneys.
Obama is the problem.
The business regulation is the main obstacle.
Healthcare cost is too much compared to other countries in the world.
Access to capital needs to be easier.
The government inability to act is a main obstacle.
The lack of highly skilled workers in the US.
Easier access to financing from banks.
Right now it would probably be access to funds and the government anti business personality. Some companies are just afraid of the government. They are very anti government.
The economy is the main obstacle.
The cost of labor is a main factor.
The tax system is probably too high.
The prices are based on taxes rates in US.
The government regulations is the main obstacle. In the last five years they have not had a stable growth market.
I think it is about increasing educational levels to have skilled employees.
No funds.
The economy and government are making it difficult.
The ability to find and retain skilled employees is the main obstacle.
Improve the education system; Americans are not qualified to do many jobs that are needed.
Customer resistance to innovation.
Lack of skilled employees in the manufacturing industry.
The economy is the main obstacle.
Fluctuation in government funding does not help our company to grow.
Too much spending.
The economic downturn which prevented companies from hiring people.
Easier access to capital from banks.
In our case the commodities market is very difficult to forecast and budget.
Government policy.
I would say a combination of national economic disposition where banks are willing to offer more capital.

Korea

Exhibit 8-9: Perceived barriers for HGIEs’ growth in Korea (in % of all answers)



Source: empirica, HGIE survey 2013

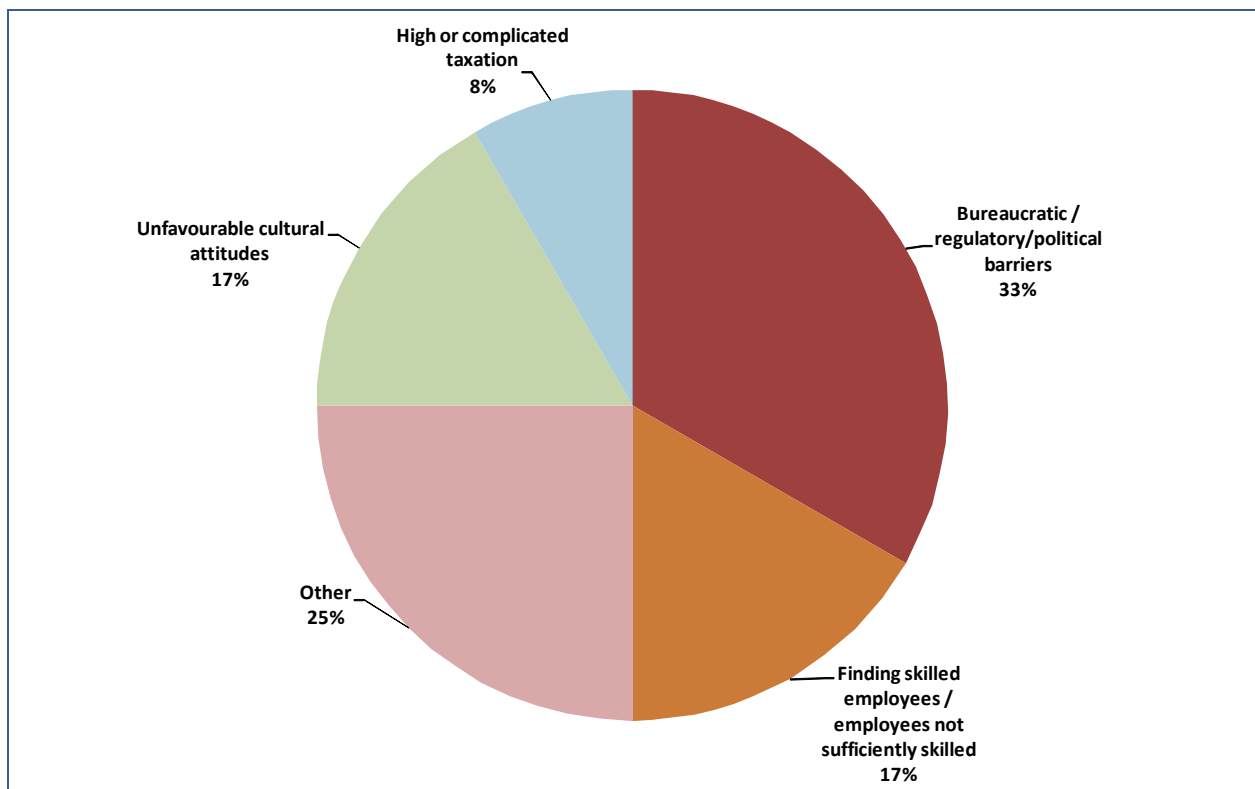
The statements in the following were made by Korean HGIEs in the HGIE survey 2013. They are answers to an open-ended question (D4): “In a few words: What is in your opinion the main obstacle in Korea for innovative companies to grow?” The answers were provided in Korean and translated by Ipsos. The answers are listed in the sequence of interviews carried out. Each table cell represents answers from one interviewee.

Fund raising
It has been made for big companies and it is not applicable for SMEs
Big companies giving all the business to their affiliated companies
Government regulations
Purchase of building site
Big company oriented
Legal and institutional regulations exist
lack of government support
economic recession
Government regulations
Governmental regulations, Giving business to big companies only
Regulations is too tight
Fund raising
Environment, legal aspects
Big company oriented policy
Fund raising
Arbitrary selection of companies for government business (benefits for a certain companies only)
external environment (market)
Competitors
support of government (fund) for public sphere
Hope institutional support is reinforced more

Developing new technologies and new products
Government policy
There are high barriers for the market where big companies are playing
Personnel
economic recession
When a company develops from SME to big company, government support ceases, which is the big problem
Big company oriented policy
Government policy
Price competition becoming severe among competitors
Social distribution of big companies profits
Korean corporate culture (conservative, regulative)
Difficulties in fund raising & support for SMEs and securing resources for R&D
Change of market
Market is saturated
Government policy
Difficulties in financing]
Market intrusion of big companies
Exchange rate, recruitment of personnel
Bureaucratic administration of government
Competition among companies in the same industry
Refuse to answer
Market environment(Sensitive to change of global market environment), various government institutions and regulations
Intrusion of big companies

Japan

Exhibit 8-10: Perceived barriers for HGIEs’ growth in Japan (in % of all answers, tentative due to small number of cases, n=15)



Source: empirica, HGIE survey 2013

The HGIEs in the Japanese sample mentioned numerous different “most important barriers” to grow an innovative enterprise in Japan. These barriers can hardly be summarised into types. Two items were mentioned twice: The country’s legal system and cultural difficulties.

The statements in the following were made by Japanese HGIEs in the HGIE survey 2013. They are answers to an open-ended question (D4): “In a few words: What is in your opinion the main obstacle in Japan for innovative companies to grow?” The answers were provided in Japanese and translated by the Japanese correspondent. The answers are listed in the sequence of interviews carried out. Each table cell represents answers from one interviewee. [Explanations from Japanese correspondent in brackets.]

Lack of English ability. [The company needs to develop its English proficiency because more and more of its collaborators and customers are non-Japanese.]
Current commercial practices. [Related to government regulations on the company’s business.]
Legal system, Japan, people cultural characteristics [When there is a legal dispute (product liability, business contract, etc.), Japanese people try to settle the matter out of court. However, when things do go to court, there is a lot of paper work and a need to use professional legal services. Moreover, although legal rules apply about responsibility, the court tends to ask each party to assume some responsibility. That means if you are in the right, you still feel pressure to accept partial responsibility.]
Legal system, lack of credible information [Information from different sources cannot be trusted (e.g., internet, government, newspapers). In the old days information could be vetted by your closed business network. Now these business networks are open, i.e. anyone can join but you do not know how credible the person is.]
Decrease in student population.
Long decision making process [By the government.]
High office cost.
High corporate tax.
Deregulation [If you are a first mover then you want the barriers to remain to give you more time to grow your business and make it more difficult for competitors to enter the market.]
Difference between Kanto (Tokyo) and Kansai (Osaka) thinking (i.e., two major business regions in Japan) [Kansai people are more open and business minded. Kanto people are more concerned about form rather than profits. In Japan’s recent history (since the Tokyogawa period—250 years ago), Tokyo was the centre of power in Japan and so even today all the regional companies feel they must maintain a nominal headquarter in Tokyo. Tokyo business people treat them as outsiders, creating a barrier to business where many times interpersonal relations are important.]

Annex 4: Questionnaire



Policies in support of high-growth innovative enterprises (HGIE)



www.high-growth-enterprises.eu * info@high-growth-enterprises.eu

Questionnaire: HGIE Survey 2013

English Master Questionnaire (version 1.1 / 19.2.2013)

Pre-survey information from database

No.	Basis	Question / Information	Answers
A1	All	Sector: Programmer: Copy from database	a) Exact NACE Code (4-digit level !) I _ I _ I _ I _ I According to NACE Rev. 2.0
A2	All	Survey sector name Check QUOTA, max. 15 interviews per sector code!!	b) Survey Sector Number/ Name I _ I _ I 2-digit numerical See list below the table for pre-survey information
A3	All	t 0: Company size (number of employees, alternatively full-time equivalents (FTE)) in year 20xx (if available): Programmer: Copy from database (NOTE: t 0 = 2010 OR 2011 OR 2012. Employment in t 0 must be at least 14. Employment growth from t-3 to t0 needs to be larger than 33% (PL only: 1/4 or more over a period of 2 years.) The company needs to be at least four years old, otherwise it is not applicable for the survey.)	a) Year 2 0 I _ I _ I 4-digit numerical Range from 2010-2013 possible! No. of employees according to database b) OPEN (if available) I _ I _ I _ I _ I _ I 6-digits, numerical [9] [not available from database (address)]
A4	All	t-1: Company size (number of employees) one year before (year t-1) (if available): Programmer: Copy from database t-1 = 2009 OR 2010 OR 2011	a) Year 2 0 I _ I _ I 4-digit numerical No. of employees according to database b) OPEN (if available) I _ I _ I _ I _ I _ I 6-digits, numerical [9] [not available from database (address)]
A5	All	t-2: Company size (number of employees) two years before (year t-2) (if available): Programmer: Copy from database t-2 = 2008 OR 2009 OR 2010	a) Year 2 0 I _ I _ I 4-digit numerical No. Of employees according to database b) OPEN (if available) I _ I _ I _ I _ I _ I 6-digits, numerical

			[9] [not available from database (address)]
A6	All	<p>t-3: Company size (number of employees) three years before (year t-3) <u>(if available)</u>; Programmer: Copy from database</p> <p>Employment in t-3 must be at least 10 t-3 = 2007 OR 2008 OR 2009</p> <p>Relevant periods of time: 2007-2010 OR 2008-2011 OR 2009-2012.</p>	<p>a) Year 2 0 _ _ _ 4-digit numerical Range from 2007-2010 possible!</p> <p>No. Of employees according to database</p> <p>b) OPEN (if available) I _ I _ I _ I _ I _ I _ 6-digits, numerical</p> <p>[9] [not available from database (address)]</p>
A7a		<p>Company size in most recent year (if available)</p> <p>Programmer: Copy from database</p>	<p>According to database</p> <p>a) OPEN (if available) I _ I _ I _ I _ I _ I _ 6-digit numerical</p> <p>[9] [not available from database (address)]</p> <p>IF < 10 => terminate</p>
A7b	All	<p>Company size in size-classes in most recent year <u>(if available)</u>;</p> <p>Programmer: Copy from database</p>	<p>(1) 1-9 [probably BLANK as not universe] (2) 10-49 (3) 50-249 (4) 250-999 (5) 1000+ (6) not available from database (address)</p>

Sectors for P2:

No.	Code	Manufacturing
01	20.1	Manufacture of basic chemicals, fertilisers and nitrogen compounds, plastics and synthetic rubber in primary forms (DE)
02	20.2	Manufacture of pesticides and other agrochemical products (DE)
03	21.1	Manufacture of basic pharmaceutical products
04	21.2	Manufacture of pharmaceutical preparations
05	26.2	Manufacture of computers and peripheral equipment (DE)
06	26.3	Manufacture of communication equipment (DE)
07	26.4	Manufacture of consumer electronics (DE)
08	26.5	Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks (DE)
09	26.6	Manufacture of irradiation, electromedical and electrotherapeutic equipment (DE)
10	26.7	Manufacture of optical instruments and photographic equipment (DE)
11	29.1	Manufacture of motor vehicles
12	30.3	Manufacture of air and spacecraft and related machinery
13	30.4	Manufacture of military fighting vehicles
	G	Wholesale and retail trade; repair of motor vehicles and motorcycles
14	46.5	Wholesale of information and communication equipment
	J	Information and communication
15	58.2	Software publishing
16	60.1	Radio broadcasting
17	60.2	Television programming and broadcasting activities
18	61.2	Wireless telecommunications activities
19	61.3	Satellite telecommunications activities
20	61.9	Other telecommunications activities
21	62.0	Computer programming, consultancy and related activities
22	63.9	Other information service activities
	K	Financial and insurance activities
23	64.1	Monetary intermediation (DE)
24	64.3	Trust funds and similar financial entities (DE)
25	65.1	Insurance
26	65.2	Reinsurance
27	66.3	Fund management activities
	M	Professional, scientific and technical activities
28	70.1	Activities of head offices (DE)
29	70.2	Management consultancy activities (DE)
30	71.1	Architectural and engineering activities and related technical consultancy (DE)
31	72.1	R&D on natural sciences and engineering (DE)
32	72.2	R&D on social sciences and humanities
33	74.1	Specialised design activities
34	74.2	Photographic activities
35	74.3	Translation and interpretation activities
36	74.9	Other professional, scientific and technical activities

Introduction

No.	Base	Question / Information	Answers
B1	ALL	<p><u>At reception/switchboard:</u> Good morning/good afternoon. My name is ... and I am calling from ... [name of institute]. We are conducting a survey in several countries of the European Union [in US and Korea also: "and beyond"]. The survey is about high growth of companies and the reasons for growth in your company. Please may I talk to somebody who is knowledgeable about related issues in your company, for instance to the head of the planning or strategy department or someone in a top management position.</p> <p>INT.: NOTE: THIS PERSON SHOULD BE THE HEAD OF THE PLANNING DEPARTMENT OR A SENIOR PERSON IN THE PLANNING DEPARTMENT, OR IN THE TOP MANAGEMENT. IN SMALLER COMPANIES IT CAN ALSO BE THE MANAGING DIRECTOR, THE GENERAL MANAGER OR THE OWNER.</p> <p>INT.: ADD, IF NECESSARY: You will be asked to assess governmental policies in your country which may in the end help improving such policies. Your participation is very important to us, because your company has been selected through a statistical procedure that will result in a representative selection of companies in [COUNTRY].</p> <p>INT.: ADD, IF NECESSARY: The interview will last approximately 8-10 minutes.</p> <p>INT.: ADD, IF EXPLICITLY ASKED FOR: We carry out the survey on behalf of the European Commission.</p>	<p>(1) put through to target person ⇒ CONTINUE</p> <p>(2) target person currently unavailable ⇒ MAKE APPOINTMENT FOR CALLBACK</p> <p>(3) no such person ⇒ TERMINATE</p> <p>(4) refusal to participate ⇒ TERMINATE</p>
B2	ALL	<p><u>At target person:</u> Good morning/good afternoon. My name is ... and I am calling from ... [name of institute]. We are currently conducting a survey in several countries of the European Union [in US and Korea also: "and beyond"]. The survey is about high growth of companies and the reasons for growth in your company. We are talking to people who are responsible for or take part in decisions in this area in their company, for instance the head of the planning department or someone in a management position. Can I just check: Would you be the right person to talk to in your company? May I ask you a few questions now?</p> <p>INT.: ADD, IF NECESSARY: You will be asked to assess governmental policies in your country which may in the end help improving such policies. Your participation is very important to us, because</p>	<p>(1) yes, interview now ⇒ CONTINUE</p> <p>(2) yes, but no time at the moment ⇒ MAKE APPOINTMENT FOR CALLBACK</p> <p>(3) no, other person responsible at this location ⇒ ASK TO BE PUT THROUGH TO THAT PERSON, RESPECTIVELY ASK FOR CONTACT DETAILS. AT NEW TARGET PERSON START AGAIN WITH QUESTION B2.</p> <p>(4) no, other person responsible at another location ⇒ ASK FOR CONTACT DETAILS. AT NEW TARGET PERSON START AGAIN WITH</p>

		<p>your company has been selected through a statistical procedure that will result in a representative selection of companies in [COUNTRY].</p> <p>INT.: ADD, IF NECESSARY:</p> <p>The interview will last approximately 8-10 minutes.</p> <p>INT.: ADD, IF EXPLICITLY ASKED FOR:</p> <p>The survey is carried out on behalf of the European Commission.</p>	<p>QUESTION B2.</p> <p>(5) refusal to participate ⇒ TERMINATE</p>
B3	ALL	<p><u>Function of target person:</u></p> <p>What is your position in your company? Which of the following is the most appropriate?</p> <p>INT.: READ OUT. SINGLE ANSWER.</p>	<p>(1)Owner/ Proprietor</p> <p>(2)Managing Director/ Board Member</p> <p>(3)Head of planning or strategy department</p> <p>(4)Other senior member of planning or strategy department</p> <p>(5)Other senior management position</p> <p>(6)Other, please specify: ----- -----</p> <p>(7) don't know/ no answer ⇒ TERMINATE</p>

Screening: company size and growth

No.	Base	Question / Information	Answers
C1	ALL	<p>Is your company part of an international enterprise group?</p> <p>INT.: IF C1 = (1) → Say: "Please answer all further questions about the activities of your company only for this business in [country], not for the entire group, to the extent that a distinction is possible."</p>	<p>(1) yes (2) no (3) don't know</p>
C2	ALL	<p>In the past five years, has your company ... (a) acquired other companies? (b) merged with another company?</p>	<p>FOR EACH: (1) yes (2) no (3) don't know / no answer</p> <p>PRG: IF YES FOR ANY ⇒ TERMINATE</p>
C3a	ALL	<p>How many employees does your company have in total in [country], including yourself?</p> <p>INT.: IF "don't know" SAY: If you don't know it exactly, can you give me an estimate?</p>	<p>Number of employees given: (enter number) _ _ _ _ _ _ _ _ _ _ _ 6-digit numerical</p> <p>[don't know / no answer] PRG: IF <10 employees ⇒ TERMINATE</p>
C3b	IF C3a = DK	<p>Would you be able to tell me to which of the following size groups your company belongs?</p> <p>INT.: READ OUT.</p>	<p>(1) 1-9 employees (2) 10-49 employees (3) 50-249 employees (4) 250-999 employees (5) more than 1000 employees (6) DK</p> <p>PRG: IF 1-9 employees: terminate</p>
C4	ALL	<p>Thinking about the past 5 years, that is back to 2007: According to our information your company experienced a period of growth during which the number of employees increased by <one third or more over a period of 3 years> <PRG.: PL only: 1/4 or more over a period of 2 years>. Can you confirm this may be correct?</p> <p>INT.: IF INTERVIEWEE ASK "ABOUT DATA, from whom we know it etc," PLEASE EXPLAIN LIKE: "We have the information about the growth of employment from a renowned address broker and their data base includes the number of employees over the years".</p>	<p>(1) Yes, it is correct. (2) Yes, it may be correct. (3) No, it is not correct, employment growth was smaller. (4) Don't know / no answer</p> <p>PRG: IF (3): ⇒TERMINATE</p>

C5	ALL	<p>Could you please tell – or estimate – in what year this fast growth of your company started?</p> <p>INT.: IF "Don't know" SAY: If you don't know it exactly, can you give me an estimate?</p>	<p>Starting year of "Growth" given: Year _ _ _ _ <i>4-digit numerical</i></p> <p>[don't know / no answer / not applicable]</p>
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Drivers and barriers of growth

No.	Base	Question / Information	Answers
D2	ALL	<p>We would now like to learn more about the reasons for the growth of your company in recent years.</p> <p>For each of the following statements, please tell me whether it fully applies, partly applies or not at all applies to your company in the past five years:</p> <p>What about ... [item]?</p> <p>INT.: READ OUT. ONE ANSWER PER ITEM.</p> <p>(a) the development of the business cycle has been favourable for our company</p> <p>(b) our company sells to a growing market</p> <p>(c) our company has been facing strong competition</p> <p>(d) our company's directors actively target growth</p> <p>(e) - blank -</p> <p>(f) our company has particularly highly skilled employees</p> <p>(g) our company has had easy access to external financing</p> <p>(h) - blank -</p> <p>(i) our company successfully introduced new products or services to the market</p> <p>j) our company successfully introduced new internal business processes</p> <p>INT.: IF "PROCESSES" IS UNCLEAR, SAY: "Such processes may for example be related to production or procurement in your company."</p> <p>(k) our company successfully introduced new marketing methods</p> <p>(l) our company successfully introduced new forms of organising our business activities</p> <p>INT.: IF "FORMS OF ORGANISING OUR BUSINESS ACTIVITIES" IS UNCLEAR, SAY: "This may for example be related to organising work responsibilities or decision making."</p> <p>(m) our company successfully entered into new international markets</p> <p>(n) - blank -</p>	<p>FOR EACH:</p> <p>(1) fully applies</p> <p>(2) partly applies</p> <p>(3) does not apply at all</p> <p>(4) don't know</p>
D4	ALL	<p>In a few words: What is in your opinion the main obstacle in <country> for innovative companies to grow?</p> <p>OPEN-ENDED QUESTION</p> <p>_____</p> <p>PROGR.: INCLUDE COUNTRY.</p>	

Impact of governmental policies

No.	Base	Question / Information	Answers
E1	ALL	<p>Now some questions about policy measures to support enterprises in your country.</p> <p>First of all, please assess whether you think the following framework conditions in [country] are supportive, neutral or harmful to growing your company:</p> <p>What about ... [item]. Are these/Is this ...[Scale] to growing your company?</p> <p>INT.: READ OUT ITEMS. ONE ANSWER PER ITEM. INT.: ASK SCALE AND CLARIFY POS. 1-2 OR 4-5.</p> <p>(a) regulations about starting, running or expanding your company (b) company taxation (c) labour market regulation (d) regulations for access to private capital (e) product market regulations (f) bankruptcy regulation (g) - blank - (h) higher education system</p>	<p>FOR EACH:</p> <p>(1) very supportive (2) rather supportive (3) neutral to growing the company (4) rather harmful (5) very harmful (6) don't know / no answer / not applicable</p>
E3	ALL	<p>Next, please tell whether you see a need for <u>state policy measures</u> to improve the business conditions in the following fields.</p> <p>Do you see a need to improve business conditions in the field of...[item]:</p> <p>INT.: READ OUT. ONE ANSWER PER ITEM. IF NEED BE, REMIND IN BETWEEN THAT THE ISSUE IS STATE POLICY MEASURES.</p> <p>Do you see a strong need, some need or no need to improve business conditions?</p> <p>(a) accessing international markets? (b) accessing debt finance? (c) accessing equity finance? (d) intellectual property protection? (e) standardisation of product characteristics? (f) research and development within your company? (g) joint research and development together with a university or other public research organisation? (h) development of regional business clusters? INT.: IF UNCLEAR, SAY: This is a cluster of enterprises from a particular industry in your region. (i) enhancing skills of companies' employees?</p>	<p>FOR EACH:</p> <p>(1) Yes, there is a strong need (2) Yes, there is some need (3) No, there is no need (4) don't know / no answer</p>
E4	ALL	<p>Did your company ever make use of a specific support measure from the state?</p>	<p>(1) yes (2) no (3) don't know / no answer</p>
E6	IF E4 = (1)	<p>Could you please give the name of the specific support measure and the public authority that implemented it?</p> <p>INT: IF IT WAS MORE THAN ONE MEASURE, SAY: "Please choose the most important one."</p> <p>OPEN-ENDED QUESTION</p>	<p>(1) yes, the name of the support measure and the public authority implementing it was:</p> <p>----- ----- ----- ----- </p>

			(2) Don't know / no answer / not applicable
E7	IF E4 = (1)	What type of support did you receive? Was it... [item]? INT.: READ OUT. MULTIPLE ANSWERS POSSIBLE.	MULTIPLE ANSWERS POSSIBLE BETWEEN (1) TO (4). (1) direct financial support, for example grants (2) consultancy support (3) participating in state-funded offers at reduced cost (4) other (5) don't know / no answer
E7a	IF E4 = (1)	And was this support helpful, neutral or even harmful to growing your company?	(1) Helpful (2) Neutral (3) Harmful (4) Don't know / no answer / not applicable
E9a	ALL	Was your company ever located in one of the following facilities? INT.: READ OUT. ONE ANSWER PER ITEM. (a) a science or research park (b) an incubator or accelerator facility INT.: IF YES, ASK: Was it helpful, neutral or harmful for your company's growth? INT.: IF "ACCELERATOR" IS UNCLEAR: "This is a facility targeting high growth of companies." .	FOR EACH: (1) No, our company was never located in such a facility (2) Yes, and it was helpful (3) Yes, and it was neutral (4) Yes, but it was harmful (5) don't know / no answer
E9b	IF E9a = (2), (3) OR (4) at least for ONE item.	What type of benefits did your company receive through this facility? Was it...[item]? INT.: READ OUT. MULTIPLE ANSWERS POSSIBLE.	MULTIPLE ANSWERS POSSIBLE BETWEEN (1) TO (9). (1) office space at reduced rates (2) laboratory or workshop space at reduced rates (3) administrative services (4) professional services for intellectual property management (5) business consulting (6) business coaching (7) access to financing (8) networking opportunities (9) other (10) don't know / no answer

Background information about the company

No.	Base	Question / Information	Answers
G1a	All	Finally, we have some general questions which will help us analysing the survey results. In what year was your company founded? INT.: IF UNCLEAR, SAY: “I mean in which year was it formally registered for the first time?”	Year given: (enter year) _ _ _ _ 4-digit numerical [DK / no answer]
G1b	If G1a = (DK/n.a.)	Would you be able to tell me in which of the following periods your company was founded? Was it ...? INT.: SINGLE ANSWER.	(1) before 1988 (2) between 1988 and 2003 (3) between 2004 and 2008 (4) after 2008 (6) DK / no answer
G2a	All	When your company was founded, was it based on research findings from another organisation? INT.: IF UNCLEAR, SAY: I MEAN WHAT IS OFTEN CALLED A “SPIN-OFF”.	(1) yes (2) no (3) don't know / refused
G2b	If G2a = (1)	Was this organisation...[item] INT.: READ OUT. ONE ANSWER PER ITEM. (a) a university? (b) a public research organisation other than a university? (c) another company? INT.: IN RARE CASES, MULTIPLE ANSWERS MAY BE POSSIBLE.	FOR EACH: (1) yes (2) no (3) don't know / refused
G3		From your total sales, how much of your products or services is sold to the following customer groups? What percentage (of 100%) is sold to other companies, private households and the public sector? INT.: READ OUT. ONE ANSWER PER ITEM. INT.: IF “don't know”, SAY: If you do not know exactly, could you please estimate? (a) other companies (b) private households (c) the public sector	FOR EACH: (a) _ _ _ % (b) _ _ _ % (c) _ _ _ % 3-digit numerical (d) don't know PRG: IF sum does not add up to 100%, display error message: Validate answers.
G4	IF G3 (c) > 10%	You said you sell more than 10% of your goods to the public sector. Does the following apply: INT.: READ OUT. ONE ANSWER PER ITEM. (a) Public authorities in [country] buy our company's products and services also when they are completely new to the market. (b) Public authorities in [country] procure our company's innovative goods even before these goods are commercially available	FOR EACH: (1) yes (2) no (3) don't know

G5	All	What is your company's most significant sales market ? Is it MAINLY the regional market, the <i>[country]</i> market, or international markets? INT.: SINGLE ANSWER.	(1) regional market (2) <i>[country]</i> market (3) international market (4) DK / no answer
G7	ALL	Do your company's financial assets include the following: INT.: READ OUT. ONE ANSWER PER ITEM. (a) venture capital (b) private equity	FOR EACH: (1) yes (2) no (3) don't know

End text	All	Those were all of our questions. I would like to thank you very much on behalf of the European Commission for participating in the interview. If you are interested in the results, these will be published towards the end of the year at the website of the project at www.hgie-policies.eu .]
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	Data to be provided by survey organisation	Categories
P0	Survey Number:	1 3 0 0 5 6 8 9 8-digit numerical
P1	Country Code	_ _ 2-digit numerical
P2	Interview Number (Questionnaire ID)	_ _ _ _ _ 5-digit numerical
P3	Date of Interview	Day _ _ 2-digit numerical Month _ _ 2-digit numerical
P5	Interview Duration in Minutes	_ _ 2-digit numerical