



NATIONAL AGENCY FOR ENTERPRISE AND CONSTRUCTION



Entrepreneurship Index 2004

– Entrepreneurship conditions in Denmark

December 2004

Entrepreneurship Index 2004
– Entrepreneurship conditions in Denmark

**This publication is available upon
request from**

Byggecentrum
Lautrupvang 1B
DK-2750 Ballerup
Tel. +45 7012 0600
E-mail: bog@byggecentrum.dk

Alternatively it can be downloaded from
National Agency for Enterprise and
Construction's homepage: www.ebst.dk

Print run

500

Price

DKK 95.00 (incl VAT)

ISBN

Printed version 87-91340-29-2
Electronic version 87-91340-52-7

Design

Due Design AS 3408-1204

Printed in Denmark, December 2004
Buchs Grafiske A/S, Randers

**National Agency for Enterprise
and Construction**

Dahlerups Pakhus
Langelinie Allé 17
DK-2100 Copenhagen Ø
Tel. +45 3546 6000
Fax. +45 3546 6001
ebst@ebst.dk
www.ebst.dk

Entrepreneurship Index 2004

– Entrepreneurship conditions in Denmark

Table of Contents

| | | |
|----------|---|------------|
| 1 | Foreword | .7 |
| 2 | Summary and Master Plan | .9 |
| 2.1 | Summary | .9 |
| 2.2 | Master Plan | .14 |
| 3 | Entrepreneurial activity and framework conditions | .15 |
| 3.1 | Entrepreneurial activity | .15 |
| 3.2 | Indices for entrepreneurial activity and entrepreneurship policies | .23 |
| 3.3 | Areas targeted for entrepreneurship policies | .30 |
| 3.4 | Summary | .34 |
| 4 | Comparing framework conditions in prioritised policy areas | .37 |
| 4.1 | Financing | .37 |
| 4.2 | Education | .44 |
| 4.3 | Entrepreneurship infrastructure | .55 |
| 4.4 | Bankruptcy legislation | .66 |
| 5 | Benchmarking political initiatives | .69 |
| 5.1 | Regulation | .71 |
| 5.1.1 | Administrative conditions | .71 |
| 5.1.2 | Motivation | .76 |
| 5.2 | Financing | .80 |
| 5.2.1 | Venture capital | .81 |
| 5.2.2 | Exit | .84 |
| 5.2.3 | Tax | .86 |
| 5.3 | Guidance | .86 |
| 5.3.1 | Government policies | .87 |
| 5.3.2 | Entrepreneurship infrastructure | .87 |
| 5.4 | Education | .89 |
| 5.4.1 | Education | .89 |
| 5.5 | Culture | .92 |
| 5.5.1 | Culture | .92 |

1. Foreword

Framework conditions conducive to entrepreneurial activity are vital to sustained growth in the Danish economy. Entrepreneurs make important contributions to growth and employment and foster innovation by developing new products, production methods and technologies. In addition entrepreneurs nurture competitiveness by challenging existing companies.

Based on the Entrepreneurship Index this report provides the first comprehensive picture of Denmark as an entrepreneurial nation.

The Entrepreneurship Index is an analytical tool that provides the first systematic mapping and evaluation of entrepreneurship. The index is built on data covering 14 countries and identifies Denmark's strengths and weaknesses. It is the stated goal of the Danish Government that Denmark is a member of Europe's entrepreneurial elite by 2010. The index continuously monitors and evaluates Denmark's progress in meeting that goal.

The index has been compiled in co-operation with FORA (The Center for Business and Economic Research under the Danish Ministry for Business and Economic Affairs). An international consortium of entrepreneurship experts and government officials has contributed throughout the data collection process and has been instrumental in ensuring a high level of quality.

Monitor Group has facilitated the consortium and has contributed to data collection and -analysis.

The coming years will see further consolidation and development of the entrepreneurship index. Improvements in framework conditions and the overall entrepreneurial activity level will be monitored and evaluated continuously.

It is the hope of the National Agency for Enterprise and Construction that the report will contribute to a long-term improvement in the business environment for Danish entrepreneurs.

Charlotte Münter
Director General

December 2004

2. Summary and Master Plan

2.1 Summary

The level of new firm activity reflects a country's ability to expand the boundaries of economic activity. A constant flow of emerging companies fuels competition and fosters innovation throughout society. Emerging high-growth companies are particularly important in creating value and economic prosperity by bringing new ideas to the market, such as new technologies or business models, or new and improved ways of meeting customer needs.

Companies emerge and prosper from the interaction between entrepreneurs, established companies, knowledge institutions and a wealth of public initiatives. It involves a great deal of effort and time to build a social structure conducive to entrepreneurial activity.

In Denmark app. 16,000 new enterprises are registered every year, and 6% of the adult population is engaged in entrepreneurial activities, either as entrepreneurs or in taking a significant part in the launch of a new business.¹

When it comes to start-up activity Denmark is among the leading countries in Europe, and matches the start-up activity level found in the United States.

Denmark and most other European countries perform less well when it comes to creating new high-growth enterprises. In the United States, the top-performing entrepreneurship country, more than 10% of new enterprises reported annual turnover growth of over 60%. In Denmark the share is 3%.

Will it be possible for Denmark to match the records of the top 3 entrepreneurship countries – the United States, Canada and Korea – in creating high-growth companies?

Some would argue that Europe and Denmark are incapable of creating a unique entrepreneurial culture reminiscent to the one found in the United States. Similarly, it is argued that a unique Asian culture has been the driving force in the build-up of dynamic Asian economies.

1 GEM (2003). "Global Entrepreneurship Monitor". The 5-year average is 5.4 %.

This is hardly a valid argument. In the 1950s the entrepreneurial culture in the United States did not differ much from the entrepreneurial culture found across much of Europe², which was primarily focused on pursuing a career within well-established companies.

Over the past 30 to 40 years the United States have developed the best framework conditions for entrepreneurial activity, and today new enterprises account for 30% to 50% of economic growth – and for the majority of jobs created.³

Regional differences across the United States are considerable, and the strong entrepreneurial record is rooted in a few, strong regions. They have become models for other countries and regions that, with varying degrees of success, have attempted to draw inspiration from successful US regions.

This benchmark study is focused on applying a systematic approach to identifying the top-performing countries. The top-entrepreneurship countries are selected, and the link between performance and framework conditions is explored in further detail.

We find that performance and framework conditions are correlated. In light of this, the Danish framework conditions are compared to those of the top-performing countries.

The distinction between framework conditions related to start-up activity and framework conditions related to new firm growth is an important element in our analysis.

Framework conditions that appear to be important to start-up activity based on the analysis include *entry-barriers for new firms*, *labour market regulation*, *administrative burdens*, and *bequest- and wealth tax*. In these areas the Danish framework conditions match those of the top-performing countries.

Framework conditions that appear to be important to new firm growth include *bankruptcy legislation*, *financing* and *entrepreneurship infrastructure*. In these areas, Denmark is far behind the top-performing countries.

2 Schramm (2004): “Building Entrepreneurial Economies”.

3 Birch, D. (1987): “Job Creation in America: How our Smallest Companies Put Most People to Work”.

The analysis suggests that the areas of *education* and *income taxes* are important to both start-up activity and new firm growth. In both areas Denmark is far behind the top-performing countries.

In areas where the Danish framework conditions are particularly weak compared to the top-performing countries further analysis has been conducted, and differences in framework conditions have been identified. The report identifies 4 critical areas:

- Financing: venture markets and secondary stock markets
- Education
- Entrepreneurship infrastructure
- Bankruptcy legislation

Financing: venture markets and secondary stock markets

Although some business start-ups do not require venture funding, venture capital continues to be an important source of funding for many high-growth enterprises. The top-performing countries all have large and efficient secondary stock markets and in the United States, Canada and Korea government institutions have played a significant part in supporting the development of venture markets. We have yet to witness a self-sustaining seed market, and an adequate supply of early-stage capital most likely necessitates a permanent involvement by government- or public institutions.

The Danish seed-capital market has been fuelled by the involvement of the Danish Government and the Danish Growth Fund, one of the largest Danish VC players. In the top-performing countries the capital and competences offered by Business Angels are vital to start-up activity. Countries with a large concentration of Business Angels offer special tax treatment for new firm investments. Such tax schemes are not available in Denmark, which may help explain the limited number of Business Angels.

A self-sustaining expansion-capital market is emerging. However, there appears to be a financing “gap” between seed- and expansion capital. It will take a firm commitment by the Danish government to implement initiatives that will effectively close the gap.

In the top-performing countries public institutions have been involved in the creation of “funds-of-funds” that serve as intermediaries between long-term financing (pension funds) and venture capital.

The Danish government is engaged in an on-going dialogue with life insurance companies and pension funds to address capital requirements for start-ups.

The top-performing countries all have large and efficient secondary stock markets, where small-sized companies can issue unlisted securities.

An efficient secondary stock market provides an exit-mechanism for venture capital and is an important tool in raising capital for global expansion.

NASDAQ is the largest and most prolific secondary stock market. Conventional wisdom would indicate that an efficient and well-run secondary stock market presupposes a sizable economy. However interesting secondary stock markets are emerging in both Korea and Sweden.

Secondary stock markets arise from the active participation of financial institutions. The small Nordic countries may benefit from engaging in cross-border collaboration to build well-functioning secondary markets. Moreover, government institutions could play an important role in developing efficient secondary stock markets.

Education

Across the United States and Canada universities are actively involved in regional economic development. Consequently, universities in the United States and Canada have actively supported the advancement of entrepreneurial education by launching dedicated entrepreneurship centres and other entrepreneurship-related activities.

There are different approaches to entrepreneurial education. At top-rated universities in the United States and Canada entrepreneurial activities go beyond traditional teaching and address other entrepreneurship disciplines such as research, teacher education, life-long learning, and education programs for entrepreneurship advisers.

Entrepreneurship infrastructure

Experiences from the United States show that a skilled and tightly stitched network of entrepreneurial advisers is vital in building a strong entrepreneurial region. The term “entrepreneurship infrastructure” covers a broad field of advisers including lawyers, accountants, patenting experts, Business Angels, venture capitalists, financial advisers, technical specialists, marketing experts, and PR-advisers.

Advisers should have in-depth knowledge of entrepreneurial issues in their field of expertise, and possess skills relevant to specific sectors and technologies. In the United States networks exclusively targeted at the IT and biotechnology sectors have recently emerged.

Non-government involvement is vital in sustaining and promoting entrepreneurial networks. Entrepreneurship organisations, industry organisations and university-anchored entrepreneurship centres are among the stakeholders involved in driving entrepreneurship networks. Networks are funded by the business community and regional or federal authorities.

A strong entrepreneurship infrastructure is built on initiatives and partnerships that involve entrepreneurs, advisers, the established business world, universities and public institutions.

The Danish Government has taken the initiative to build a nation-wide network of sparring partners, and to establish 30 to 40 entrepreneurship clubs across Denmark, where experienced business individuals offer entrepreneurs valuable sparring.

It will take further initiatives and additional resources to build a Danish entrepreneurship infrastructure that compares to infrastructures found in the top US regions.

Bankruptcy legislation

Evidence suggests that bankruptcy legislation is a vital framework condition. This is not related to the actual number of bankruptcies or the preventive nature of bankruptcy legislation, but rather to the fact that bankruptcy legislation has a strong influence on risk-taking and the level of prestige associated with being an entrepreneur.⁴

According to the OECD and the World Bank entrepreneurs in the top-performing countries are allowed to restart app. one year after declaring bankruptcy, barring any unlawful activities. Unless a rescheduling of debt is granted creditors in Denmark and most other European countries can retain claims on a bankrupt's assets for a substantial amount of time. In Denmark the average period for rescheduling of debt is five years. Furthermore, a rescheduling of debt may only be granted following the closing of the insolvent estate. The OECD has estimated the length of time that creditors have claims on a bankrupt's assets in Denmark to be a minimum of seven years.⁵

4 EIM Business and Policy Research (2002): "Entrepreneurship in the Netherlands".

5 OECD (2001): "Drivers of growth: Information Technology, Innovation and Entrepreneurship"; OECD (forthcoming): "Technical report: Forstering Firm Creation and Entrepreneurship".

The considerable time spent on closing a business and the uncertainties arising from bankruptcy legislation is an important impediment to risk-taking and the prestige associated with being an entrepreneur, effectively resulting in lower start-up activity.⁶

In the United States it is the other way around. Several studies show that prior to launching a successful business some of the most successful entrepreneurs have gone through one or more bankruptcies.⁷

It will take a comprehensive change in the structure of the Danish legislation for Danish conditions to match those of the top-performing countries. The Danish government has asked the Council on Insolvency Proceedings to look upon the possibilities for changes in the bankruptcy legislation. The Government expects to put forward a proposal in the fall of 2004 to ease restrictions pertaining to “entrepreneurship restarters”. It is vital that the legislation addresses the balance between creditor and debtor interest.

2.2 Master Plan

The report consists of three main sections. Section 3 highlights entrepreneurial activity in Denmark vis-à-vis selected OECD countries. Country framework conditions are detailed, and the link between entrepreneurial activity and framework conditions is investigated in further detail. On this basis we identify four framework conditions that appear to be the most important to entrepreneurial activity.

Section 4 discusses the impact of selected framework conditions on entrepreneurial activity, and details Denmark’s performance vis-à-vis the top 3.

Section 5 is devoted to a complete run-down of Denmark’s performance in each of the 18 identified policy areas. The section highlights recent policy implementations and offers an assessment of what measures need to be implemented to bring Denmark in line with the top 3.

6 Bosma N.S., P. Waasdorp, G. de Wit (2003): “Financial structure, creditor rights and economic growth”.

7 BCG (2002): “A Report on Entrepreneurial Restarters, Setting the Phoenix Free”, the Boston Consulting Group, Germany. See also http://europa.eu.int/comm/enterprise/library/enterprise-europe/issue4/articles/en/enterprise18_en.htm

3. Entrepreneurial activity and framework conditions

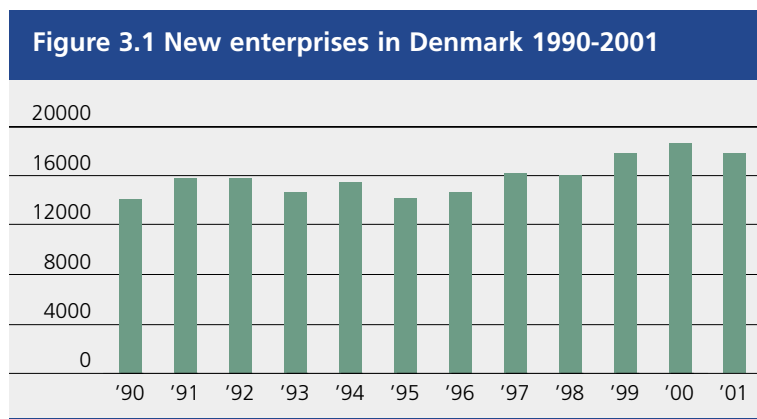
There are various approaches to measuring entrepreneurial activity. In this study the assessment of country performance for entrepreneurial activity refers to *start-up activity* and *new firm growth*. This definition was used in last year's report¹ and the OECD also applied the definition in their benchmark study: "Micro Policies for Growth and Productivity".²

This section reviews entrepreneurial activity in Denmark and other selected OECD countries, and framework conditions in the top-performing countries are described in detail. The link between framework conditions and entrepreneurial activity is explored in detail, leaving us to conclude that activity levels and framework conditions are correlated. In light of this the report aims to identify framework conditions conducive to entrepreneurial activity.

3.1 Entrepreneurial activity

Start-up activity

In Denmark app. 16,000 new enterprises are launched annually. During the IT-bubble some 18,000 firms were launched, and over the past couple of years app. 16,000 new businesses have been started. This is in line with start-up activity levels registered in the early 1990s (Figure 3.1).



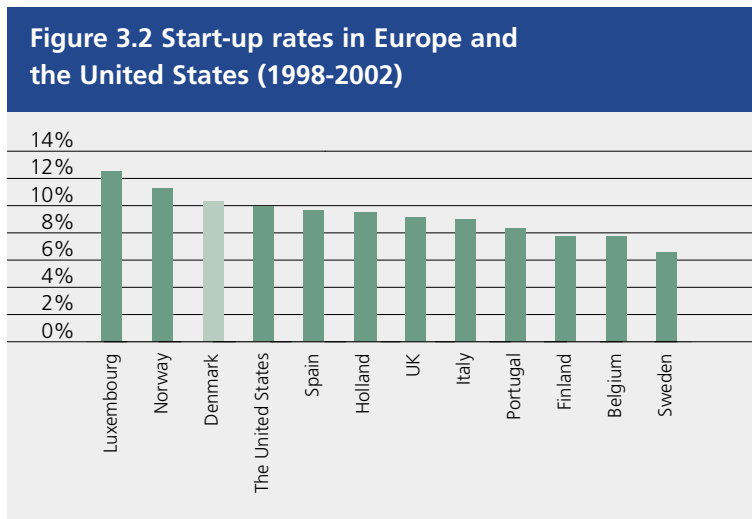
Source: Statistics Denmark.

1 FORA (2003): "A Benchmark Study of Entrepreneurship – what can Denmark learn?"

2 OECD (forthcoming): "Fostering Firm Creation and Entrepreneurship".

The fact that individual countries use different sources to measure start-up rates makes it difficult to compare start-up activity levels across countries. Eurostat has been active in harmonising statistics, thereby providing a set of comparable data for selected European countries. In the United States start-ups are registered in a manner that allows for comparison with Eurostat data.

The Danish start-up rate is 10%. (Start-up rates are calculated as the number of entering firms as a proportion of the total number of active firms in the same sector). The Danish start-up rate is on a level with the United States and is among the best in Europe (Figure 3.2).



Source: Eurostat 1998-2000. Numbers have been harmonised and adjusted for sector differences.

Until recently international comparisons of start-up rates were hard to come by. Previous studies have shown Danish start-up rates to be low. That, however, is not the case.

A high start-up rate is vital to economic development for two major reasons:

- New firms often have a different approach to conducting business, which challenges existing firms and fosters a highly competitive environment. Efficient competition fuels competition and productivity across sectors or clusters. Thus new firms may have a significant dispersion effect.

- New firms may demonstrate an entirely new way of conducting business, i.e. a unique business model or a new product that has a lasting impact on the competitive environment. Even if only a limited number of new firms are engaged in promoting a new business model or product, it could have a significant impact on economic growth (See Box 3.1).

Box 3.1 Entrepreneurs with an innovative business model or a new product

Entrepreneurs with an innovative business model: IO Interactive A/S

Founded in 1998 by Janos Flösser and six of his colleagues, in co-operation with Egmont Holding, IO Interactive manufactures sophisticated computer games for game consoles and PCs. IO Interactive have sold more than six million copies of *Hitman* (1, 2 and 3) and *Freedom Fighters*.

IO's business model has been a major contributor to the company's success by challenging global suppliers of high-quality computer games. Since the launch of IO Interactive the company has opted not to manufacture or distribute computer games. IO revenue is generated as advance payments from distributors and subsequent royalties that reflect the product's success in the market.

This strategy has significantly lowered the company's risk-profile. IO Interactive was not negatively affected by the burst of the IT bubble in 2000. Instead IO, Interactive was able to focus on developing the best computer games in the market.

Entrepreneurs with a new product: Jupiter Plast A/S

Launched in 1989 by Hans S. Steffensen and Hans Christian Gabelgaard Jupiter Plast manufactures composite fibreglass products that are more environmentally friendly compared to traditional fibreglass products. The products have the strength of steel. Although the product is more expensive than steel it is well suited for the production of cars, ships and trains because of its low weight. Most of the production is exported to train manufactures in Germany, Belgium, Austria, and Italy.

Source: www.eoy.dk, www.ioi.dk, www.jupiterplast.dk.

Entrepreneurs fall into three distinct categories:

- *The freelancer* typically runs a one-man business and has no ambition to hire additional staff. Another example of a freelancer is the "weekend-entrepreneur" that runs a wine importing company in his or her spare time.

- *The independent entrepreneur* runs his or her business based on a well-known business plan or a product that is marketed by other companies. Independent entrepreneurs include hairdressers, kiosks, and skilled trade, among others.
- *The innovative entrepreneur* has the potential and ambition to create a global, market-leading company based on an all-embracing innovation (see Box 3.1).

All three brands of entrepreneurs make vital contributions to the continued growth of the economy – nurturing efficient markets, a high level of innovation, and higher wealth and employment. Thus framework conditions that address all types of entrepreneurs and emerging companies are vital.

For some time Denmark has addressed the need for improved entrepreneurial framework conditions, and the prolonged effort has translated into a remarkable start-up rate.

Start-ups funded by venture capital

The past few years have witnessed a strong focus on growth entrepreneurs engaged in building companies with a global perspective and high-growth potential. High-growth companies are prevalent across all sectors, but are particularly noticeable in knowledge intensive industries, where innovation is driven by distinctly advanced skills, such as a profound knowledge of customer needs and experiences, or a particularly advanced technology.

In high-growth companies the core business idea is either protected by an immaterial right or may be standardised on a high scale thereby preventing competitors from replicating the idea.

The ability of emerging knowledge intensive companies in exploiting a global opportunity necessitates the in-flow of capital resources that exceeds potential company earnings. Thus venture capital forms the foundation of global expansion.

The United States has long been the front-runner in creating globally successful knowledge-intensive companies, and is therefore regarded as the ultimate benchmark for other countries.

A significant number of innovative and successful entrepreneurship firms in the United States receive a large share of venture capital in the early stages, and some opt to go public to support continued growth. Over the past 30 years more than 2000 venture capital-funded compa-

nies have gone public. In 2000, one in five companies listed on the Stock exchange was funded by venture capital, constituting almost one-third of the total market cap.³

The success of the United States in supplying venture capital may not be a practicable road for other countries. New firm venture funding has been dominated by the IT- and biotechnology sectors leaving us to conclude that venture capital is well suited for those sectors. Still there are numerous examples of venture capital diffusing into other technologies and sectors prone for global success.

The past decade has witnessed a remarkable surge in venture markets in Canada, the UK, Israel, Korea, Singapore, and Sweden and, to some extent, Finland.⁴

2000 was a solid year for the venture business. In the United States some 2,500 firms received venture capital while in the UK app. 500 new firms were funded by venture capital. When adjusting for the size of the economies the United States and the UK are on level terms. When comparing this to the relative size of the Danish economy app. 50 new firms should receive venture capital funding annually. In 1998 only 17 start-ups received venture capital. Since then the share of venture capital-funded firms has surged, and in 2002 venture investment were made in 145 new Danish enterprises.⁵

In recent years the share of Danish start-ups funded by venture capital has surpassed the performances of the top-performing countries. It is possible that the Danish success reflects a congested demand for early-stage venture capital and that we will see numbers stabilise in the foreseeable future.

The remarkable surge in the share of start-ups funded by venture capital (seed- and start-up) may be attributed to the active participation of venture-funding incubators, the Danish Growth Fund, and a range of emerging private venture funds (Box 3.2).

3 P. Gompers and J. Lerner (2001): "The Money of Innovation". Harvard Business School Press.

4 OECD (2003): DSTI/IND; FORA (2004): "A benchmark study of the venture market – what can Denmark learn"; Monitor Group (2004): "Dynamic Benchmarking of Entrepreneurship Performance and Policy in Selected Countries".

5 Data for the United States, the UK and Denmark comes from various sources and are therefore not 100% comparable. US data is taken from PWCopers, while data for the UK and Denmark is taken from European Private Equity and Venture Capital Association.

Box 3.2 Danish start-ups with seed and start-up capital

Chempaq A/S

Chempaq holds a patent for a unique sensor used for blood cell counting (CBC – Complete Blood Count). The product provides with precise, quick and easy-to-perform blood cell count testing. Consequently patients do not have to consult specialised laboratories. This has led to a reduction in resource consumption, faster case administration and fewer patient inconveniences.

The company has received pre-seed financing from the Incubator Scheme facilitated by the NOVI incubator in Aalborg. Subsequently Innfond, Symbion Capital and the Growth Fund have injected additional capital. In the summer of 2004 Chempaq received an additional 41 million DKK from existing investors as well as two newly established venture companies, the Finnish company Biofund and the Danish company Vencata A/S. Chempaq has been a part of the Symbion Research Park since 2001.

Hymite A/S

Hymite A/S develops and manufactures unique embodied silicium components for sophisticated optical and micro-mechanic chips used in the IT and telecommunications industry.

Initially financed by CAT-Symbion Innovation the company has received app. 125 million DKK in venture funding from Danish and international investors since its establishment. The latest capital injection in March 2004 amounted to 72.3 million DKK.

Current investors include the Growth Fund, Dansk Kapitalanlæg A/S, Vertex and Olicom. The German company TVM V and the Swedish Innovationskapital added Hymite to their portfolios during the second round of capital infusion. Today Hymite has offices in Copenhagen, Berlin and Dallas.

ECO-DAN A/S

ECO-DAN develops and manufactures high-tech guidance systems for agricultural equipment and machinery. The automatic guidance systems increase precision control and speed, thereby enhancing productivity while reducing the use of pesticides by as much as 75%.

In January 2003 the company received 15 million DKK from a pair of new investors, the Finnish venture company CapMan and the Danish Growth Fund. Other stockholders include NOVI, AgriVenture, Teknologisk Innovation, Strandgade Holding and ECO-DAN management.

Sources: www.eoy.dk; www.chempaq.dk; www.hymite.dk; www.eco-dan.dk

When it comes to start-up activity the analysis appears to confirm that Denmark is one of the leading countries. This applies both to the number of start-ups and the number of start-ups with a global potential funded by venture capital. The question is: Is in fact the global potential realised and transformed into higher production, growth and employment?

New firm growth

So far it has been virtually impossible to compare new firm growth across countries. The capital market in general and the venture market in particular have been used as proxies to determine new firm growth. This is by no means a reliable measure. Consequently the report attempts to establish a comprehensive method for measuring new firm growth.

The method is built on an international database (Orbis) that contains more than three million company accounts. The database has some inconsistencies and reliable data on actual new firm growth is not available. Still it is our assessment that the database does allow for identifying *the share* of high-growth firms based on two-year averages. A correlation between current country performance and longer-term country performance shows rankings to be stable.⁶

Thus the share of new firms with a growth rate higher than 60% is used as an indicator for new firm growth. Country rankings are not affected when setting growth at 30 or 40%.⁷

Available data covers 15 countries. The data for the United States and Korea is based on a limited number of observations and should therefore be treated with some caution. The United States and Korea head the ranking while the UK, Holland and Spain also perform well (Table 3.1).

6 When comparing country performance based on current growth data (2000-2002) and country performance based on a six-year period we find a correlation of 0.7. This indicates that country rankings are relatively stable. Cross-country comparisons may be affected by differences in economic conditions. However statistical tests indicate that economic conditions do not affect country rankings.

7 Martin Junge and Ulrich Kaiser (2004): "Benchmarking of Small and Medium Sized Firms for Twenty Selected Countries – Construction of Growth Indicators".

Table 3.1 Share of new firms with a growth rate higher than 60%, 2000-2002

| | |
|-------------------|------|
| Korea | 15.5 |
| The United States | 13.5 |
| UK | 8.5 |
| Spain | 8.2 |
| Holland | 7.3 |
| Finland | 5.8 |
| Norway | 5.7 |
| Sweden | 5.1 |
| France | 4.0 |
| Italy | 3.9 |
| Denmark | 3.3 |
| Portugal | 3.1 |
| Germany | 2.6 |
| Switzerland | 1.8 |
| Austria | 1.7 |

Note: A simple average of employment and turnover growth has been applied in measuring growth. The indicator has been calculated based on the share of firms started since 1996 that had between 15 and 100 employees in 2000, that still existed in 2002, and that showed turnover growth of more than 60% from 2000 to 2002. Data for Korea and the United States is based on a limited number of observations.

Source: National Agency for Enterprise and Construction.

The solid performance of the United States is supported by other studies.⁸ We have not been able to locate additional sources to support Korea's rank.

In Finland, Norway and Sweden between 5 and 6% of all start-ups shows annual turnover growth of more than 60%. In Denmark the share was 3%.⁹

New firms with a large global potential are vital to economic growth. However, table 3.1 suggests that only a limited number of start-ups see significant growth. Other surveys that are based on other definitions of start-ups show that only 5% of all start-ups move on to become high-growth firms, which corresponds well with the findings in table 3.1.

8 Scarpetta et. al. (2002): "The role of policy and institutions for productivity and firm dynamics: Evidence from micro and industry data".

9 EU (2003): "Entrepreneurship: A Survey of the Literature", Prepared for the European Commission, Enterprise Directorate General by Prof. David B. Audretsch.

Several studies show that of the new start-ups about 25% will cease to exist within the first year, while 70% will survive but not grow.

While only a limited number of enterprises move on to become high-growth business the contribution to total economic growth from the entry and growth of new firms is significant. As much as 40% of the difference in wealth creation across nations can be explained by differences in entrepreneurial activity levels.¹⁰

While the Danish framework conditions for start-up activity are ranked among the best, conditions for new firm growth remains a critical issue in Denmark.

In last year's growth report from the Danish government the issue was given due attention and a wide range of initiatives were announced. Extensive and persistent efforts are necessary for Denmark to claim a place among the world's leading entrepreneurial nations. Among other things efforts should focus on improving critical framework conditions for new firm growth.

3.2 Indices for entrepreneurial activity and entrepreneurship policies

Denmark has been an active participant in OECD's effort to identify growth factors in the global knowledge economy. Systematic benchmark studies are important in this matter. The goal of the benchmark studies is to identify framework conditions conducive to a high level of entrepreneurial activity, and to establish a link between performance and framework conditions. In other words: will effective policies lead to higher entrepreneurial activity?

In 2003 the first study on entrepreneurship was published.¹¹ The Danish government decided to expand the scope of the benchmark study. Other countries were invited to participate in the process and eight countries are currently part of the consortium while other countries have expressed a keen interest in participating. Facilitated by Monitor Group, the OECD and A.R.T have also been involved in the process.

Among other things the consortium discusses what "lies behind the numbers". It has not been the ambition to apply identical benchmark methods across all participating countries.

10 FORA (2004): "An analysis of the correlation between FORA innovation drivers and MFP-change".

11 FORA (2003): "A Benchmark study of Entrepreneurship – What can Denmark learn?".

The model applied for this study is more elaborate than the one used in last year's report. 14 countries are covered and data is collated from a wide range of international statistical sources.

The benchmark method

The benchmark model does not attempt to identify causal connections. Still it serves as an important tool in identifying policy implementations in the top-performing countries, providing valuable insight into the workings of best-practice policies.

The benchmark analysis presents a collective measure for entrepreneurial activity and framework conditions conducive to entrepreneurial activity. Accordingly the link between activity levels and policy implementations is investigated in further detail. In the event that such a link exists further analyses of best-practice framework conditions are carried out.

Using this method we are able to identify strengths and weaknesses in the Danish framework conditions vis-à-vis the top-performing countries.

Index for entrepreneurial activity

A collective measure for entrepreneurial activity combines data on start-up activity and new firm growth. Data is currently available for 14 countries.

Data on start-up activity is available for nine European Union countries, Norway and the United States. The most comprehensive statistic on start-up activity is the Global Entrepreneurship Monitor that surveys the proportion of the adult population engaged in new firm activity. GEM data covers 28 countries.¹²

On average one in every 10 adults was engaged in start-up activity, but only 1 to 2% report that they are actively managing a firm in which they are the full owner.¹³ There is a healthy correlation between the GEM survey and actual start-up rates for the nine countries covered.¹⁴ Therefore the survey data is applied throughout the analysis.

The share of new firms with revenue growth of more than 60% is used as an indicator for new firm growth. The indicator is available for 15 countries (Table 3.1).

12 GEM (2003): "Global Entrepreneurship Monitor", p. 43.

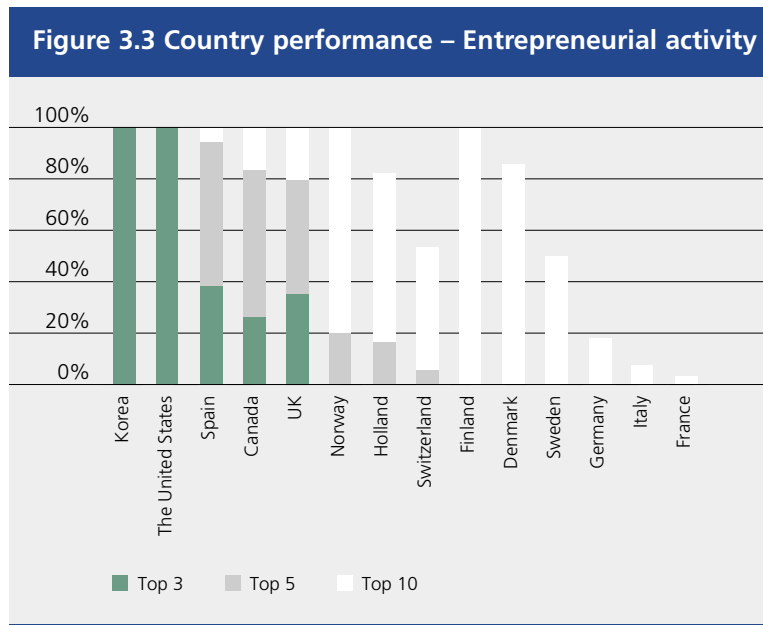
13 GEM (2003): "Global Entrepreneurship Monitor".

14 OECD (forthcoming): "Technical report: Fostering Firm Creation and Entrepreneurship", p.7.

Data on start-up activity is not available for Portugal and Austria. Hence the two countries have been omitted from the analysis. No growth data is currently available for Canada. However Canada is an interesting entrepreneurship country and has therefore been added to the study. The report applies capital market indicators as a measure of new firm growth in Canada. The capital market indicator was used in OECD's benchmark study from 2003, and further analysis points to a strong correlation between the growth data and the capital market indicator.

There is significant variation in country rankings on start-up activity and new firm growth. The composite ranking depends on how the two elements are weighted. By applying alternate weights we have determined the possible top 3, top 5, and top 10 rankings.

Results are shown to be robust to changes in weights. The United States and Korea are ranked in the top 3 in nearly 100% of the outcomes and make up the top 2 (Figure 3.3).



Note: Growth data is available for 15 countries. Growth data for Canada is based on nine capital market indicators. A high correlation between growth data and the capital market indicator implies that the relative difference between the United States and Canada with regards to the capital market indicator is transferred to the growth data. This implies that Canada's ranking with regards to growth data vis-à-vis the United States is equal to Canada's position on the capital market indicator in proportion to the United States.

Start-up data covers both the share of individuals currently trying to start a new business, and the share of individuals having recently started a new business. Growth data has been compiled over the past five years and has shown to be internally consistent and in line with other statements.

To identify top-performing countries a robustness analysis has been carried out to test the weighted indices for start-up activity and new firm growth. The figure shows the possible top 3, top 5, and top 10 rankings based on 100,000 randomly generated weights. The selected countries are covered in full by the indicators applied in measuring entrepreneurial activity.

Source: National Agency for Enterprise and Construction/FORA. Own calculations.

Spain, Canada and the UK make up the second best group whereas none of the countries in the residual group claim a top 3 ranking.

Index for entrepreneurship policies

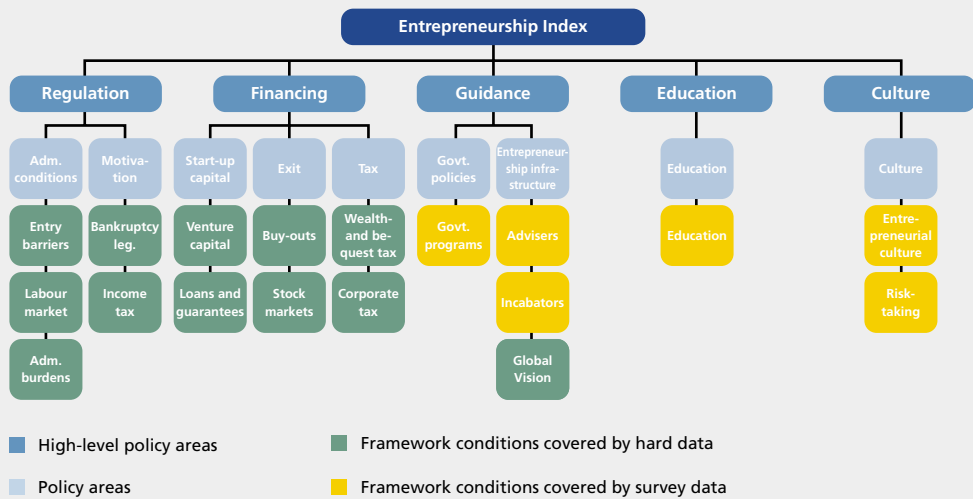
Five policy areas conducive to start-up activity and new firm growth have been identified. Each policy area covers a number of sub-areas:

- Regulation
Entry barriers, labour market regulation, administrative burdens, bankruptcy legislation and income taxes
- Financing
Venture capital, loans and guarantees, buy-outs, stock markets, bequest tax, wealth tax, and corporate tax
- Guidance
Government programs, private advisers, incubators, and global vision
- Education
Basic-, upper secondary- and higher education
- Culture
Entrepreneurial culture and risk-taking

The model is comprised of 18 sub-areas that each contributes to entrepreneurial activity. 47 indicators have been used in benchmarking policy areas.

12 of the policy areas are covered by register (“hard”) data, while the remaining six are built on survey data (Figure 3.4).

Figure 3.4 Entrepreneurship Index Model

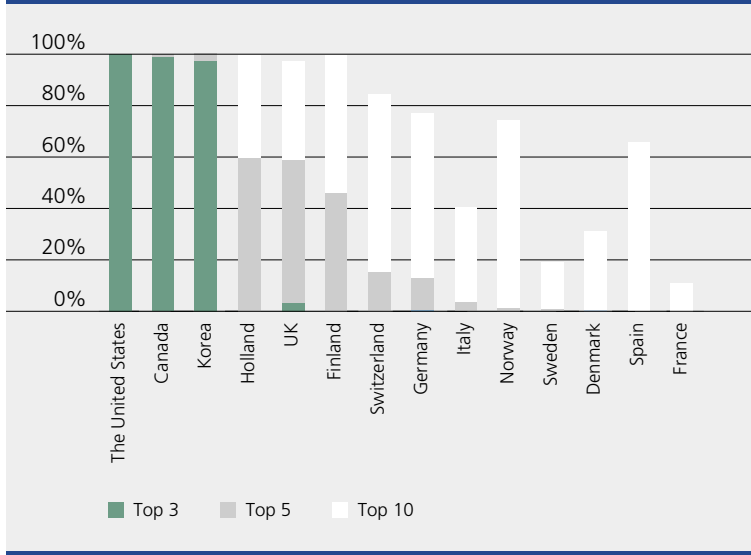


Source: The National Agency for Enterprise and Construction/FORA (2004).

Since no guidance is provided in determining the importance of each of the policy areas, alternative weights have been used in ranking framework conditions. Figure 3.5 shows the results of the robustness analysis that details the frequency with which countries are ranked in the top 3, top 5, and top 10, respectively.

The comparison of country performance through distributions based on random weights shows that the United States, Canada and Korea are ranked in the top 3 in all but a few of the outcomes (Figure 3.5).

Figure 3.5 Robustness analysis – framework conditions



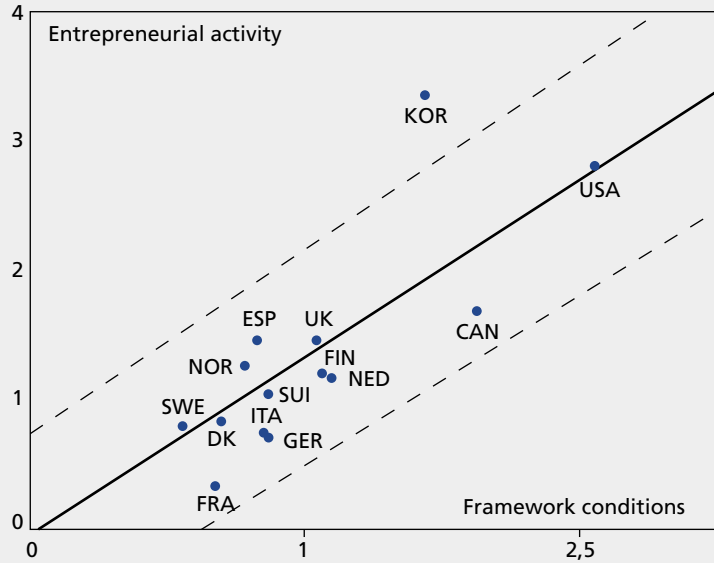
Note: The figure shows the results of the robustness analysis that details the frequency with which countries are ranked in the top three, top five and top ten, respectively using random weights. A total of 100,000 random weights have been applied resulting in 100,000 possible rankings. The selected countries are covered in full by the indicators applied in measuring entrepreneurial framework conditions
 Source: National Agency for Enterprise and Construction/FORA. Own calculations.

Holland, the UK and Finland make up the second best group. Country differences in the residual group are hardly detectable rendering any further grouping of countries meaningless.

The correlation between entrepreneurial activity and entrepreneurship policies

The strong positive correlation between entrepreneurial activity and framework conditions renders probable the benchmark methods. We have shown a positive correlation between entrepreneurial activity and framework conditions for the United States, Canada and Korea. The correlation is confirmed by a statistical analysis (Figure 3.6).

Figure 3.6 Correlation between entrepreneurial activity and entrepreneurial framework conditions



Note: The dotted lines show the 95% confidence interval based on 100,000 randomly generated indices. We find that all countries except Korea are located within the two error bars.¹⁵
Source: Own calculations.

The correlation is clear, yet fragile. The United States and Canada show consistently good results in both entrepreneurial activity and framework conditions. Entrepreneurial activity in Korea is much higher than suggested by the quality of Korean framework conditions. This may be explained by the fact that growth data is based on a limited number of observations.

Entrepreneurial activity and framework conditions are markedly lower for the residual group. If the top-performing countries are excluded from the analysis the statistical correlation is non-existing (R^2).

This implies that the results deduced from the benchmark analysis rest on differences between the top 3 and the 11 European countries. Country differences among the residual group are hardly measurable and provide little guidance in making any solid conclusion.

¹⁵ The correlation coefficient, R^2 , is 0,841. The correlation coefficient measures the correlation between two variables. R^2 shows the extent to which variation in the dependent variable is explained by the independent variable. In other words, country framework conditions account for 84,1% of the variation in entrepreneurial activity.

Data coverage for the United States is solid, while available data on new firm growth in Canada and Korea is insufficient. Steps should be taken to improve data coverage for Canada and Korea, and to include more countries in future benchmarks. New Zealand and Australia in particular are obvious candidates in that respect. Singapore is another candidate for further analysis.¹⁶

Based on existing data we conclude that the United States, Korea and Canada are far ahead of the competition in terms of both entrepreneurial activity levels and entrepreneurial framework conditions.

It will take a considerable effort to improve framework conditions across the European countries for them to match top 3. An important element in that respect is to identify policy areas conducive to entrepreneurial activity.

3.3 Areas targeted for entrepreneurship policies

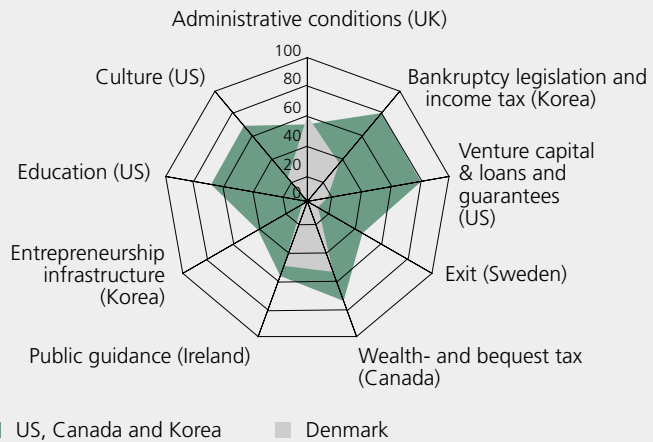
It is a fundamental principle in benchmarking that critical policy areas are those that the top-performing countries have given high priority. While no evidence exists in determining the relative importance of a given policy area, it is assumed that the relative importance of a policy area is determined by the average index value for the best-performing countries (Figure 3.7).

This does not imply that other policy areas are not important, but rather that top-performers have achieved good results without giving a high priority to other policy areas.

The benchmark analysis suggests that the areas of *bankruptcy legislation, income tax, start-up capital, wealth- and bequest tax, education and culture* are potentially the most important for entrepreneurial activity in the top-performing countries (Figure 3.7). In these areas Danish framework conditions are significantly inferior to those of the top 3.

¹⁶ Monitor Group (2004): "Dynamic Benchmarking of Entrepreneurship Performance and Policy in Selected Countries".

Figure 3.7 Comparing framework conditions in Denmark and the top 3



Note: The nine policy areas are identical to the blue boxes in Figure 3.4. The spiderweb compares Denmark to the top 3 (the United States, Canada and Korea). The country with the best framework conditions (indicated in brackets) is assigned the value 100 while the lowest-performing country is assigned the value zero. For example a zero score in the area of public guidance does not imply that the country in question has no public guidance programs, but simply that the level of public guidance is the lowest among all countries included in the analysis. The green area shows the average value for the three best-performing countries, and the grey area shows the Danish values. Source: Own calculations.¹⁷

In the areas of *administrative conditions* and *public guidance* Denmark match the record of the top 3. The elimination of the wealth tax has been a major contributor to Denmark's current position in the area of *wealth- and corporate taxes*.

Denmark performs well in policy areas that are somewhat less important to entrepreneurial activity among the top-performers. The distance from the green area to the best-performing country, which is shown in brackets, illustrates this.

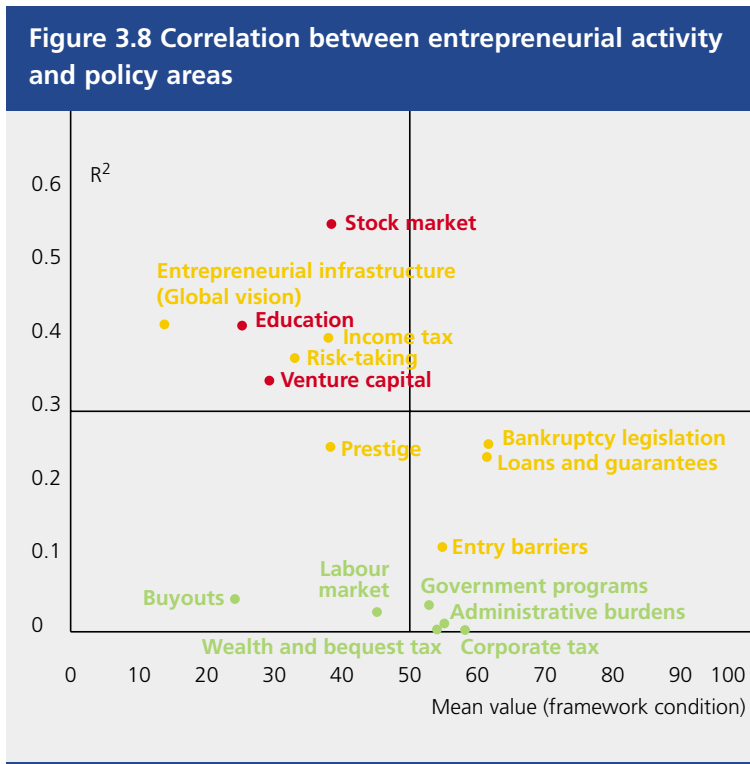
The importance of a given policy area can also be illustrated by analysing the statistical link between total entrepreneurial activity and each of the identified policy areas. A significant statistical correlation between entrepreneurial activity and individual policy areas indicates that the policy area in question is important to entrepreneurial activity.

¹⁷ The best-performing country is assigned the value 100. The black line illustrates the average value of the top three performance countries. The blue area illustrates Denmark's position. The best-performing country for each of the policy areas is shown in the figure as well.

On the other hand a low statistical correlation suggests that the policy area is less important. If the mean value of a given framework condition is high, the low statistical correlation may be the result of solid performances by all countries.

It should be noted that the benchmark method fails to identify any causal connection, and merely compares countries with different characteristics. Furthermore available data only makes it possible to analyse data for a single year. Future analyses will enable us to register changes in country rankings in each of the identified policy areas.

Provisional calculations regarding the link between entrepreneurship activity and entrepreneurial policies suggest that *bankruptcy legislation*, *income taxes*, *financing*, *education* and *entrepreneurial culture* could potentially be most important to entrepreneurial activity (Figure 3.8).



Note: R² (the y-axis) shows the correlation between the individual policy areas and the composite performance index. The mean value (the x-axis) shows country rankings in each of the policy areas, where the top-performing country is assigned the value 100 and the worst-performing country is assigned the value 0. The different colours illustrate differences between Danish framework conditions and the framework conditions for the top 3. A green marking indicates that the Danish framework conditions are superior to or less than 30 units behind the top-performers. A yellow marking indicates that Denmark trails the top-performers by 30 to 60 units. A red marking indicates that Denmark trails by more than 60 units.

Source: Own calculations.

Global vision is another vital policy area. The share of new firms with exports is used as an indicator for global vision. The United States underperforms in this area simply because of the size of the domestic market. This explains the relatively poor top 3 performance.

The correlation analysis identifies global vision as a key policy area. A strong positive correlation between the globalisation of new firms and the level of entrepreneurial activity underlines this. It is vital for new firms to rapidly grow export shares – to be “Born Global”.

All countries are subject to the same trade conditions. Thus the presence of trade barriers or export subsidies fails to explain country differences. Differences may be explained by new firm competences in trade- and market-related areas. Some new firms will have access to global networks that facilitate global market-entry.

The quality and skills of new firm networks are vital to the globalisation efforts of start-ups. The network is often referred to as the entrepreneurship infrastructure and comprises 3 sub-areas: Private advisers, incubators and global vision.

A panel of entrepreneurs and experts has been asked to rate the quality of private advisers and incubators. The indicator covers eight countries. The indicator for global vision measures the share of exporting start-ups and comprises 14 countries.

Entry barriers, labour market regulation, administrative burdens, wealth- and bequest tax, corporate tax and public guidance are important to entrepreneurial activity. However the low correlation shown in Figure 3.8 suggests that the importance of these areas is limited.

Denmark’s position in each of the policy areas is marked with green, yellow, and red. A green marking indicates that Danish framework conditions match those of the top-performing countries. A red marking is a warning sign indicating that framework conditions significantly trail those of the top-performers. A yellow marking indicates that framework conditions are mediocre.

It appears that Danish framework conditions are weakest in policy areas that are critical to entrepreneurial activity, while conditions are at their peak in areas where framework conditions appear to have limited importance to entrepreneurial activity (Figure 3.7).

The fact that Denmark performs well in the areas of *entry barriers, administrative burdens, public guidance, corporate tax, and wealth- and*

bequest tax, and given high start-up rates, suggests that the above mentioned areas are highly important to start-up activity. At the same time a poor showing in *bankruptcy legislation*, *venture capital*, *stock markets* and *global vision* could potentially explain the low level of new firm growth.

Entrepreneurial culture (risk-taking and prestige), education and income have a positive effect on entrepreneurial activity. However it is difficult to determine if they are critical to start-up activity, or new firm growth. It may be the case that entrepreneurial culture, education and income taxes are equally important to start-up activity and new firm growth. The extent to which framework conditions influence start-up activity and new firm growth will be further analysed as part of the 2005 Entrepreneurship Index.

3.4 Summary

Once again it should be stressed that benchmark studies fail to identify causal connections. Given the fact that statistical calculations are based on observations from a single year results should be treated with some reservation.

The analysis suggests that Denmark's framework conditions are solid in areas related to start-up activity, whereas framework conditions appear to be weaker in areas related to new firm growth. Thus the benchmark study and the accompanying statistical analysis show that:

Four policy areas appear to be of significant importance to *start-up activity*:

- Entry barriers
- Labour market regulation
- Administrative burdens
- Wealth- and bequest tax.

Three policy areas appear to be of significant importance to *new firm growth*:

- Bankruptcy legislation
- Venture- and stock markets
- Entrepreneurship infrastructure (Global vision).

Three policy areas appear to be of significant importance to *both start-up and growth*:

- Education
- Income taxes
- Cultural factors including risk-taking and the prestige associated with being an entrepreneur.

Danish entrepreneurship policies have maintained a strong focus on policy areas conducive to business start-up. Denmark has achieved good results and start-up rates are healthy. Chapter 4 draws up the balance sheet for all policy areas conducive to entrepreneurship activity.

The last few years have witnessed a growing interest in addressing bankruptcy legislation. The Danish government has asked the Council on Insolvency Proceedings to go through the existing legislation. There is a growing need for improvements if Denmark is to match the conditions of the top-performing countries.

In terms of financing framework conditions for early-stage funding (seed and start-up) have been improved. However financing conditions for new firm growth should be addressed.

The quality and competences of entrepreneurial advisers have received little attention. Last year it was decided to conduct a benchmark study on incubators that addresses among other things the area of entrepreneurial advisers (please refer to section 4.3 as well as the background report focusing on incubators).

The current tax reform lowers vital tax rates in Denmark. The unique Northern European welfare model makes it difficult for Denmark and other Northern European to match the tax levels found in the United States, Canada and Korea. The counterpart to a heavier tax burden is diversified and affordable (or free) welfare services; services that entrepreneurs outside the Northern European welfare system will have to pay for themselves.

It is conceivable that certain Danish tax rates could be lowered without conflicting with the structure of the Danish welfare model. However changes must be introduced in a gradual manner. Further potential tax cuts will be introduced following the full implementation of the latest tax reform.

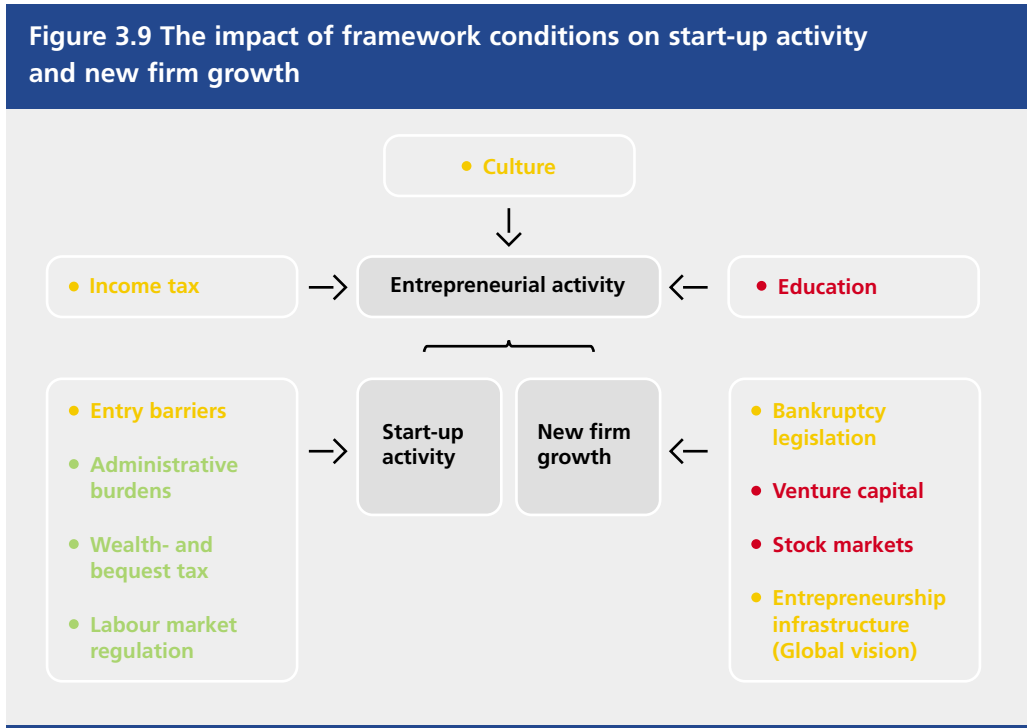
It is difficult to determine the effects of cultural factors on entrepreneurial activity. A number of steps have been taken to improve entrepreneurial culture in primary and secondary education. Among other things the prevalence of various entrepreneurship awards has attracted attention and has fuelled overall interest in entrepreneurship.

It is possible that the building of a strong entrepreneurial culture is positively affected by a solid entrepreneurial track record. An excellent

entrepreneurial track record and prolific role models help create a strong entrepreneurial culture. At the same time entrepreneurship awards and opinion campaigns may facilitate a stronger culture and higher risk-taking among the general public.

So far entrepreneurial education has received little attention in Denmark. Recently the Danish government has upgraded entrepreneurial education, and the forthcoming launch of the Entrepreneurship Academy is a testament to that. The Danish government also initiated a benchmark study on entrepreneurial education (please refer to section 4.2 as well as the background report on entrepreneurship education at universities in the United States, Canada and Denmark).

The report has identified four areas that are essential to entrepreneurial activity; areas where the Danish framework conditions are particularly weak compared to the top-performing countries: Bankruptcy legislation, venture-and stock markets, education and entrepreneurship infrastructure (right-hand side in Figure 3.9)



Note: A green marking indicates that the Danish framework conditions are superior to or less than 30 units behind the top-performers. A yellow marking indicates that Denmark trails the top-performers by 30 to 60 units. A red marking indicates that Denmark trails by more than 60 units. Source: Own calculations.

4. Comparing framework conditions in prioritised policy areas

This section discusses each of the four identified policy areas (financing, education, entrepreneurship infrastructure, and bankruptcy legislation) in detail, and highlights Denmark's position vis-à-vis the top-performing countries.

Section 5 draws up the balance sheet on Denmark's performance in each of the 18 policy areas. Recent policy implementations are highlighted, and an assessment of what measures need to be implemented to bring Denmark in alignment with the top 3 is presented.

4.1 Financing

The effect of financing on entrepreneurial activity

The demand for new firm funding is higher than ever, especially in knowledge-intensive companies with a significant global potential. At the same time the challenges associated with raising capital have grown in complexity.

The business foundation for companies in the global knowledge economy is often centred on an immaterial right, or on an idea that can be standardised and produced on a large scale. This often involves a great deal of research and development.

If the development process is successful the subsequent product launch necessitates a speedy marketing effort.

Both the development phase and marketing efforts have grown in scope and resources. As a consequence the start-up of growth-oriented companies necessitates a significant capital infusion.

In the global knowledge economy companies are competing in the areas of business ideas and innovation. Large and efficient production machineries are no longer the decisive factors in maintaining a competitive edge. Today, the pool of knowledge and skills, and the ability to transform immaterial capital into ideas and innovation are vital in maintaining a competitive capacity.

Production facilities such as buildings or machinery may be used as collateral for venture capital. It is, however, much more difficult to have

a loan secured on immaterial capital. It takes considerable skills and insight for a credit facilitator to value the global potential of a knowledge-intensive company. Thus it has become increasingly difficult for knowledge-heavy companies to raise the capital needed to support global expansion.

It will take some structural and institutional change in the capital markets to adequately support knowledge-intensive and growth-focused start-ups.

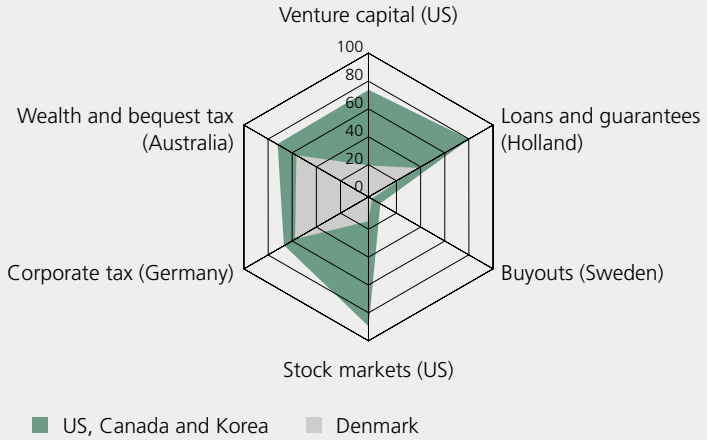
Denmark vis-à-vis the top 3

The following indicators have been applied in evaluating financial markets:

- Venture capital
Start-up and expansion capital
- Loans and guarantees
Bank loans, guarantees, and interest rate spread
- Buyouts
- Stock markets
Size of secondary stock markets, the share of new firms listed in secondary stock markets, the size of the primary stock market, and the average stock market turnover
- Wealth- and bequest tax
Wealth-, bequest- and property (real estate) taxation
- Corporate tax

The United States, Canada and Korea have the best framework conditions and capital markets to support entrepreneurial companies. In the area of financing the Danish framework conditions are mediocre, while framework conditions in the area of taxation match those of the top-performing countries (Figure 4.1).

Figure 4.1 Entrepreneurship financing in Denmark vis-à-vis the top 3



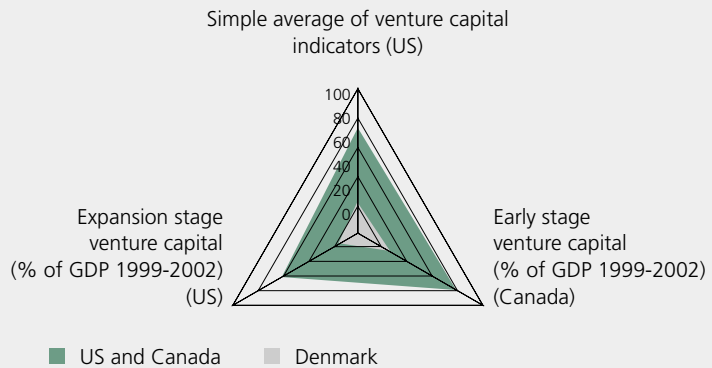
Source: Own calculations.

The venture market

The venture market measures the supply of early-stage capital (average seed- and start-up capital), and expansion capital. Data covers a three year average (1999-2002).

The size of the markets for early-stage and expansion capital is significantly smaller compared to the top 3 (Figure 4.2).

Figure 4.2 Venture capital in Denmark vis-à-vis the top 3



Source: Own calculations.

The Danish market for seed-capital has shown remarkable growth in later years due in part to the involvement of incubators and the Danish Growth Fund. It is our assessment that as far as seed capital, the Danish venture market is now on a level with the top-performers. Seed financing by government or public institutions in the best-performing countries is considerable, and we have yet to witness a self-sustaining seed-market (FORA 2004).¹

Denmark's position in other areas of venture financing is markedly lower compared to the top 3. This does not imply that framework conditions that foster the development of venture market fail to match those of the top-performers. In fact we find that policy implementations in later years have brought Denmark closer to the top-performing countries.²

There is a significant time lag associated with transforming effective framework conditions into a large and effective venture market. A large and efficient venture market requires an adequate supply of new firms with the potential and skills to grow on a global scale, and venture firms and funds that are experts in the area of capital management. The build-up of skills requires experience. Therefore competences must be accrued simultaneously, which is a time consuming process. The process may benefit from extensive government participation.

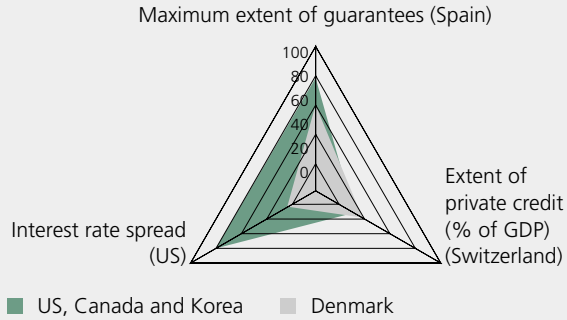
Loans and guarantees

The credit market is measured by the extent of loans, guarantees and the interest rate spread. Loans and guarantees are at a level with the top-performing countries, while the interest rate spread in Denmark is higher compared to the top 3 (Figure 4.3).

1 FORA (2004): "Venturereport, Peer Review, Denmark".

2 FORA (2004): "Venturereport, Peer Review, Denmark".

Figure 4.3 Loans and guarantees in Denmark vis-à-vis the top 3

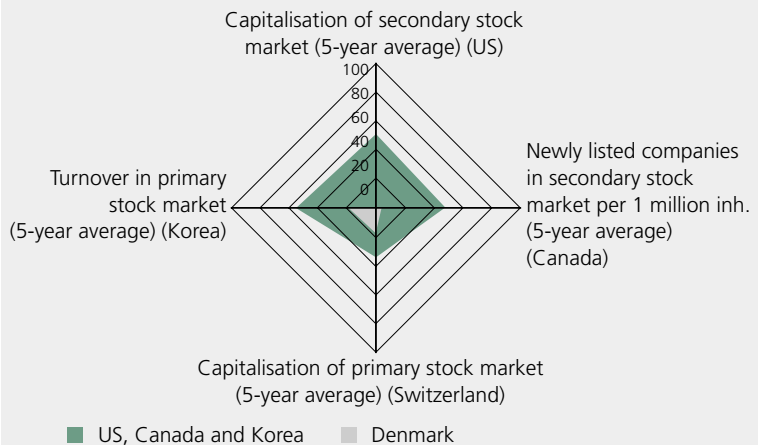


Source: Own calculations.

A large and efficient credit market is vital to entrepreneurial activity. Venture capital-funded companies may require additional loan capital to cover their capital requirements.

The fact that the scope of loans and guarantees in Denmark is on a level with the best-performing countries is a testament to the effectiveness of the Danish credit market. A higher interest rate spread may reflect lower price competition in the Danish credit market.

Figure 4.4 Danish stock markets vis-à-vis the top 3



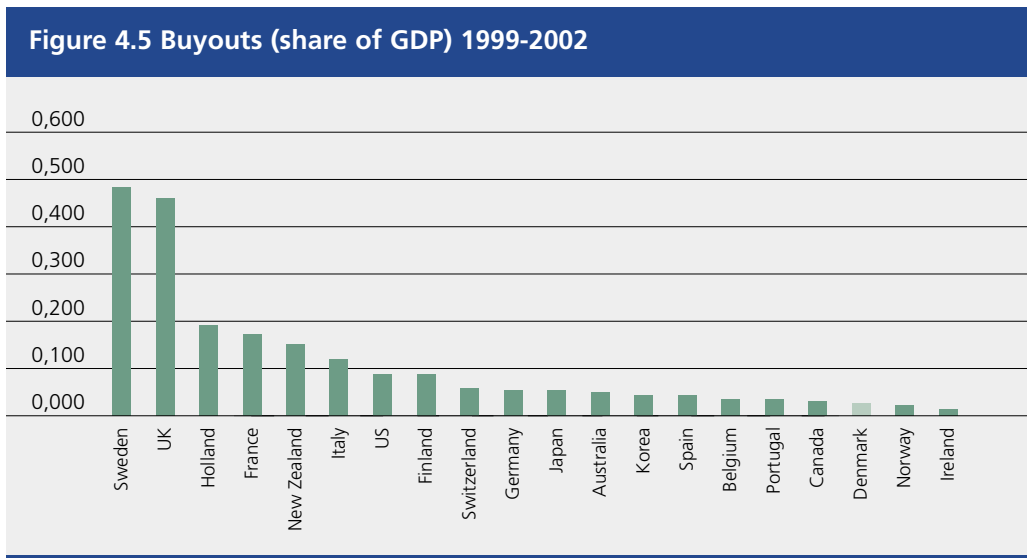
Source: Own calculations.

Firms with a global growth potential will at some point during the development phase opt to go public to support their continued expansion. Exit mechanisms that allow entrepreneurs and investors in early-stage risk projects to be compensated for their efforts are vital elements in an efficient venture market.

Denmark will have to address the challenges of building a secondary stock market conducive to entrepreneurial activity, as well as focusing on policy initiatives that will foster the further development of the primary stock market.

Buyouts

Efficient markets for management buyouts (mbo) or buyins (mbi) are suitable alternatives to a secondary stock market. In a management buyout the managers and/or executive raise the capital needed to purchase all outstanding shares. In a management buyin an investor purchases all outstanding shares without replacing the management team. Sweden and the UK have large buyout markets, while the size of Denmark's buyout market is limited (Figure 4.5).



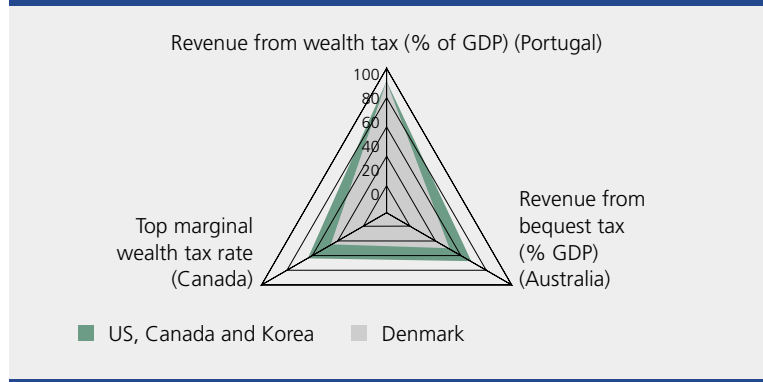
Note: Data for New Zealand, Japan and Korea covers the period 1998-2001.
Source: Own calculations.

Traditionally Denmark has not perceived buyouts as a funding vehicle which helps explain the lack of a large and efficient buyout market.

Wealth- and bequest tax

Lenient wealth- and bequest tax regimes encourage entrepreneurial activity by providing immediate financial gains. Lower income tax rates make it possible for entrepreneurs to use a larger share of funds generated from operations to support growth. Denmark's showing in the areas of wealth- and bequest tax is strong, as illustrated in Figure 4.6.

Figure 4.6 Wealth- and bequest tax in Denmark vis-à-vis the top 3

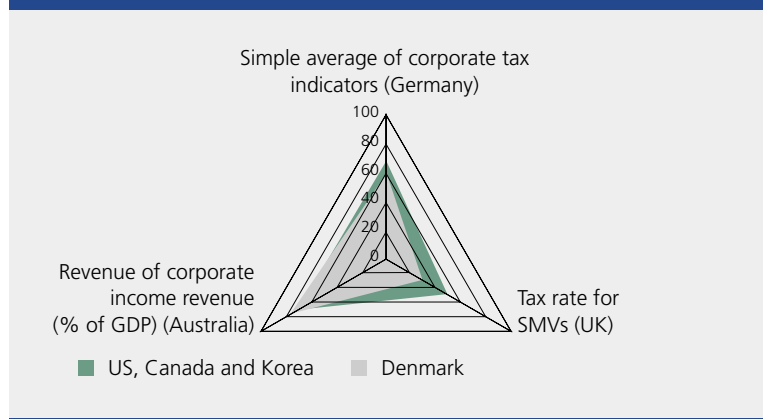


Source: Own calculations.

Corporate Taxes

Corporate tax levels influence entrepreneur incentives and the level of self-financing. Denmark's record matches those of the top-performing entrepreneurial countries (Figure 4.7).

Figure 4.7 Corporate tax in Denmark vis-à-vis the top 3



Source: Own calculations.

Denmark will have to address the following issues: Further development of the venture market, an effective secondary stock market that provides adequate exit mechanisms, and a large and efficient buyout market.

4.2 Education

If entrepreneurship activity is to be strengthened, primary and secondary education must address student creativity and stimulate an entrepreneurial culture as opposed to a wage-earning culture.

In order to strengthen entrepreneurial culture Denmark and most other countries have made great strides in refining the academic curricula as well as teaching methods. Initiatives aimed at strengthening entrepreneurial culture appear to have been successful. Many countries are witnessing a stronger inclination to become entrepreneurs among youths. This is also the case in Denmark.³

It takes more than desire, risk-taking and motivation to become a successful entrepreneur – it also requires a strong set of skills. The successful entrepreneur not only has to be an idea generator in advanced technological areas or be able to see business opportunities, but should also possess solid skills in traditional disciplines such as production planning, accounting, marketing, and management, among others.

Often demands exceed the capability of an individual entrepreneur and require a team of entrepreneurs. Sometimes successful business development requires that the management team is replaced during the development phase.

The demand for more enhanced skills has prompted a surge in entrepreneurial education, most notably in the United States and Canada. 30 years ago entrepreneurship was not an integral part of the educational set-up in the United States. Things have progressed at a rapid pace since then and today several universities are specialised in the field of entrepreneurship (Box 4.1).

³ Sørensen, Loav Jull and Reimar Ivang (2002): "Fostering Innovation- and Entrepreneurial Culture at Aalborg University".

Box 4.1 Facts on entrepreneurial education in the United States and Canada

- The first entrepreneurship course was launched in 1945 by Harvard University for World War II veterans
- In 1970, 16 universities offered entrepreneurship courses
- Today there are more than 100 active entrepreneurship centres
- More than 400 educational institutions offer entrepreneurship degrees
- There are more than 400 endowed positions⁴ in entrepreneurship and related fields
- Some 100 MBA programs offer courses in entrepreneurship
- Several universities have an entrepreneurship teaching staff of more than 30

Sources: Stowe, Charles (2003). "Entrepreneurship Education in the United States"; Katz, Jerome (2004): "2004 Survey of Endowed Positions in Entrepreneurship and Related Fields in the United States".

Entrepreneurial education surveys are hard to come by. The few that exist show a positive link between entrepreneurial education and graduate career paths.

- Start-up rates are 3 times higher among graduates with an entrepreneurial background. When adjusting for demographic conditions an entrepreneurial background will increase the probability of being actively involved in a start-up by 25%.
- High-technology company start-up rates are 13% higher for graduates with an entrepreneurial background.⁵

Apart from the immediate impact on entrepreneurial activity surveys suggest that entrepreneurial students are better prepared to manage a job in a well-established company. Thus entrepreneurial skills and innovative behaviour create value – not only to entrepreneurs but to society as a whole.⁶

Universities across Europe and Asia are also showing a growing interest in entrepreneurial education.

The report presents the first formalised benchmark study of entrepreneurial education at select universities in the United States, Canada and Denmark.

⁴ Endowed positions are professorial jobs to which an additional sum of money or set of assets is dedicated (<http://eweb.slu.edu/chairreg.htm>).

⁵ Charney and Libecap (2000): "Impact of Entrepreneurship Education".

⁶ Op. Cit.

University selection

The United States and Canada have a long-standing tradition for ranking universities on the quality of their academic programs. This also applies to entrepreneurship. Rankings are based on a variety of criteria and are not homogenous. We have selected 10 universities that generally receive high marks in various entrepreneurial rankings.⁷

Seven Danish universities have been added to the list (Table 4.1)

Table 4.1 Selected universities in the United States, Canada and Denmark

USA

1. Babson College
2. University of Texas at Austin
3. Stanford University
4. University of Pennsylvania
5. Harvard University
6. Massachusetts Institute of Technology (MIT)
7. University of California, Los Angeles (UCLA)
8. University of California, Berkeley
9. University of Southern California
10. Cornell University

Canada

11. Saint Mary's University
12. Université Laval
13. École Des Hautes études Commerciales (HEC)
14. McGill University
15. York University
16. Brock University
17. University of Calgary
18. University of British Columbia
19. University of Victoria
20. Université de Sherbrooke

⁷ Rankings are based on a variety of criteria and are not homogenous. However the selected universities generally receive high marks in various entrepreneurial rankings. Sources include Financial Times, US News, Business Week, Entrepreneur Magazine, Success Magazine; Menzies, Tereza and Yvon Gasse (1999): "Entrepreneurship and the Canadian Universities: Report of a National Study of Entrepreneurship Education".

Denmark

21. Aarhus Business School (ABS)
22. The IT University (IT U)
23. The University of Southern Denmark
24. Copenhagen Business School (CBS)
25. Aalborg University
26. The Danish Technical University (DTU)
27. The University of Aarhus

Universities have been compared in two areas: Student participation rates and the supply of courses and other entrepreneurial activities.

Participation rates

A number of universities do not keep records on the share of students attending entrepreneurship courses. Another obstacle lies in the way universities are structured.

Business schools have the highest share of entrepreneurship students.

The Marshall School of Business at the University of Southern California requires that students attend at least one entrepreneurship course. Business schools at UCLA and Stanford have student participation rates of 90%. At Babson College, a “pure” business school, student participation is 70%.

At École des Hautes Études Commerciales (HEC) in Canada, another pure business school, and the University of British Columbia student participation rates are slightly below 20%.

At Copenhagen as well as Aarhus Business School only 3% of the student body attend entrepreneurial courses.⁸

MIT is primarily a technical university, but also comprise a business school. At MIT the student participation rate is 15%. The Danish Technical University has a participation rate of 1%.

Multi-dimensional universities are comprised of a business school, technical disciplines and a range of traditional academic activities. Stanford is an example of a multi-dimensional university and has the highest share of students attending entrepreneurship courses (20%).

⁸ This does not include the number of students that attend courses where entrepreneurship constitutes a minor part of the curriculum.

At Cornell and the University of Pennsylvania student participation is 20% and 15%, respectively.

At McGill University and the University of Calgary 5% of all students participate in entrepreneurial education.

At the University of Aalborg the share of students participating in entrepreneurial education is 2,5%. At the University of Southern Denmark participation rates are hardly detectable. Aarhus University does not have a business school or technical disciplines. Student participation is less than 1%. The University of Copenhagen does not currently offer entrepreneurship courses.

While these numbers should be treated with some caution it appears that student participation in the United States is significantly higher as compared to Denmark and Canada.

Our sample includes top-rated universities in the United States and Canada. It should come as no surprise that participation rates at some Danish universities are lower compared to the United States. Still it is notable that none of the Danish universities comes close to matching participation rates at top-ranked universities in the United States and Canada.

Scope of activities

The analysis of entrepreneurial activities is split into five dimensions:

- *Education set-up* covers academic activities, including the range of entrepreneurial courses offered at undergraduate/graduate level, entrepreneurial research, and life-long learning.
- *Education scope* covers the application of practical, experiential and culture-affecting teaching methods, by involving practitioners, facilitating close relations with the business community, using role models and experiential teaching methods, or by attempting to diffuse an university-wide entrepreneurial way of thinking.
- *Institutional characteristics* encompass the interaction with the immediate surroundings including the extent to which the business community or other faculties are involved in the management of entrepreneurship programs, how entrepreneurship is prioritised, the amount of resources allocated, the presence of incentives that encourage teachers to participate in entrepreneurial activities, and the level of student involvement in entrepreneurial activities.

- *Outreach* covers contact to private companies and availability of guidance and counselling (alumni, venture capitalists/business angels, lawyers or incubators) for students embarking on an entrepreneurial venture.
- *Evaluation* covers student or stakeholder evaluation, monitoring of graduate career paths, and the extent to which entrepreneurship programs are replicated by other universities.

University rankings in each of the five dimensions are illustrated by a series of “yes” and “no” questions. The questionnaire has been drafted in close collaboration with tenured entrepreneurship teachers at the selected universities. Interviewees have had an opportunity to pinpoint activities conducive to entrepreneurial education. A number of relevant questions have surfaced during interviews. Hence all 27 universities have been contacted again in order to complete the survey. The questionnaire is comprised of 37 questions that cover relevant entrepreneurial activities.

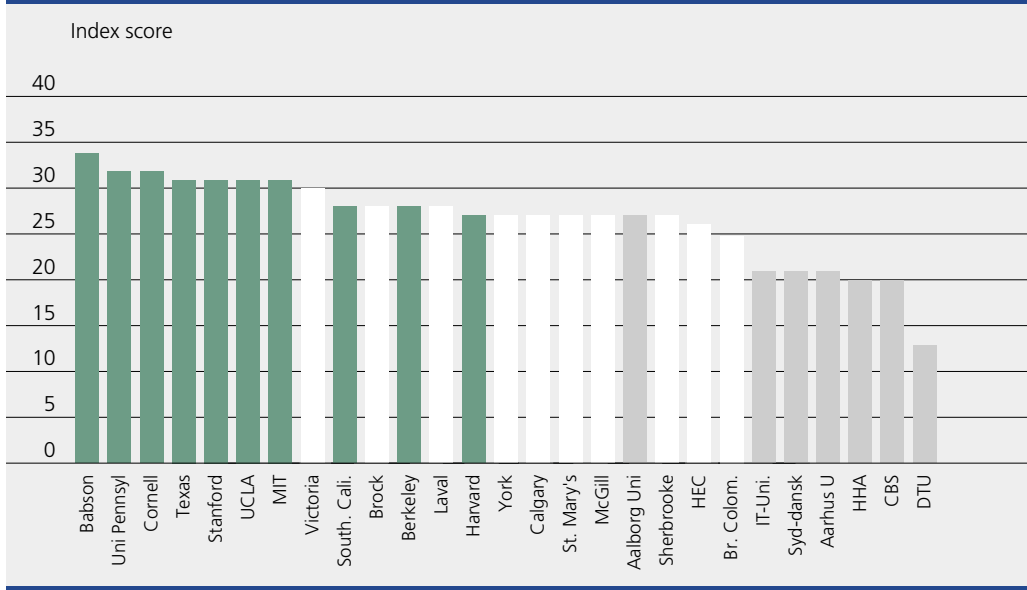
The questionnaire is designed to detect if certain activities are available and is not intended to measure the actual scope of activities. Since the questionnaire is of a “yes/no” nature, qualitative data has been included to verify the quantitative data. Qualitative data serve as a “proxy” in verifying the quality of the quantitative data, and has also been used in drafting a number of “best practice” case stories.

Answers have been collected by consulting university web sites, e-mails, phone interviews and personal interviews. A few universities have submitted written answers, while the majority have been interviewed by phone or face-to-face.

Universities are ranked on the number of activities offered in each of the five dimensions.⁹ US universities dominate the top part of the index. Canadian universities make up a second group, while Danish universities are ranked in the bottom section of the index (Figure 4.8).

⁹ A positive reply is accredited with one point. A total of 37 points are available and universities are ranked on overall score.

Figure 4.8 Ranking of Universities



Source: National Agency for Enterprise and Construction (2004): "Background report: Entrepreneurship education at universities – a benchmark study".

Note: Grey bars = Danish universities, white bars = Canada, green bars = The United States

Aalborg University is the best-performing Danish university. In terms of education set-up Aalborg is on a level with the Canadian universities and narrowly trails the top-ranked universities in the United States. However the participation rate at Aalborg is low (2 to 3%). The scope of entrepreneurial activities at Aalborg is significantly lower compared to top-ranked universities in the United States and Canada.

The Herning Institute of Business Administration and Technology (HIBAT) has made great strides in establishing a comprehensive entrepreneurial program. Input from key participants at HIBAT has been included in the preparation of the questionnaire and the overall report. HIBAT recorded a score of 32 of a possible 37. The number of activities matches those of the United States. However the scope of activities is significantly lower as compared to the United States. HIBAT only takes in 35 students annually and has therefore not been included in the analysis.

Scope and resources

The analysis shows significant country differences in the following areas: broad supply of entrepreneurship courses, resources allocated to entrepreneurship programs, and to which extent entrepreneurship is part of the overall approach to education.

Most US universities have a broad range of courses at undergraduate level but do not offer BA-degrees in entrepreneurship.¹⁰ All US universities offer a wide range of entrepreneurship courses at graduate and postgraduate level, and by and large US universities offer a graduate degree or MBA in entrepreneurship. Thus entrepreneurship is a supplement to general education at undergraduate level. At graduate and postgraduate levels students may specialise in entrepreneurship.

Typically entrepreneurship courses cover traditional business disciplines such as financing, accounting, marketing, management and statistics. Creative classes that help students devise new concepts, products, and market approaches are other key elements in entrepreneurial education. Cornell, Harvard, and Stanford offer more than 20 entrepreneurship courses at graduate/postgraduate level.

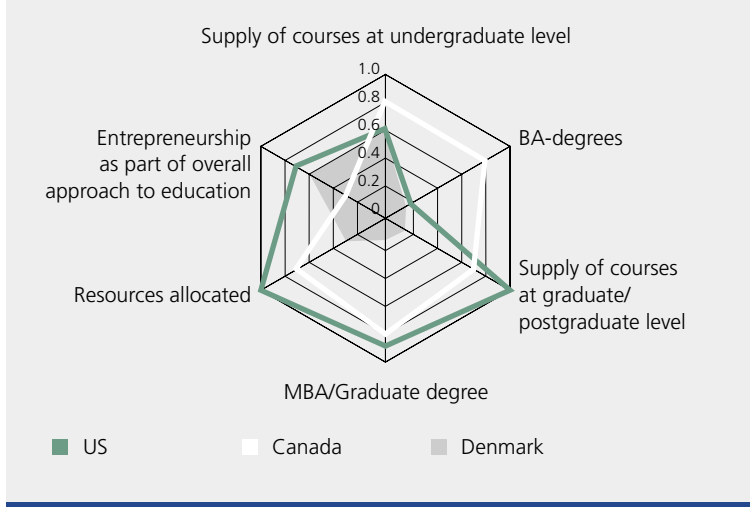
The size of university budgets allows most US universities to introduce new initiatives and further develop their entrepreneurship programs. At the majority of selected US universities entrepreneurship is part of the university's overall educational approach and vision.

In all but one of the areas Canadian universities rank slightly below the United States. However, as opposed to the United States, Canadian universities offer bachelor degrees in entrepreneurship.

Nearly all of the Danish universities offer business plan courses, while some universities offer a range of courses at undergraduate level. A few Danish universities have an extensive supply of entrepreneurship courses at graduate/postgraduate level and only a limited number offer graduate degrees or MBA in entrepreneurship. Finally most Danish universities do not have substantial resources available for entrepreneurship-related activities (Figure 4.9).

¹⁰ The dividing line that constitutes a broad supply of courses is set at 5 courses. This is based on an assessment of what academic skills are needed to provide students with a varied curriculum in the area of entrepreneurial education.

Figure 4.9 Scope and resources



Source: National Agency for Enterprise and Construction (2004): "Background report: Entrepreneurship education at universities – a benchmark study".

Most US universities have dedicated entrepreneurship centres that conduct research and are responsible for developing and coordinating entrepreneurial activities.

The Entrepreneurship Center at MIT, the Rock Center at Harvard and the Blank Center for Entrepreneurship at Babson College have more than 30 teachers and researchers attached.

Centres are also instrumental in building close relation with the business community and in setting up culture-affecting events such as lectures, seminars and conferences. The presence of a dedicated entrepreneurship centre that offers a wide range of activities is vital in promoting entrepreneurship across campus.

Openness

US and Canadian universities regard practitioners and students as valuable resources and often involve practitioners and students in day-to-day education.

All US universities have a strong focus on involving guest lecturers and attracting teacher with proven entrepreneurship record, as well as supplying internships and offering courses that facilitate ongoing company relations.

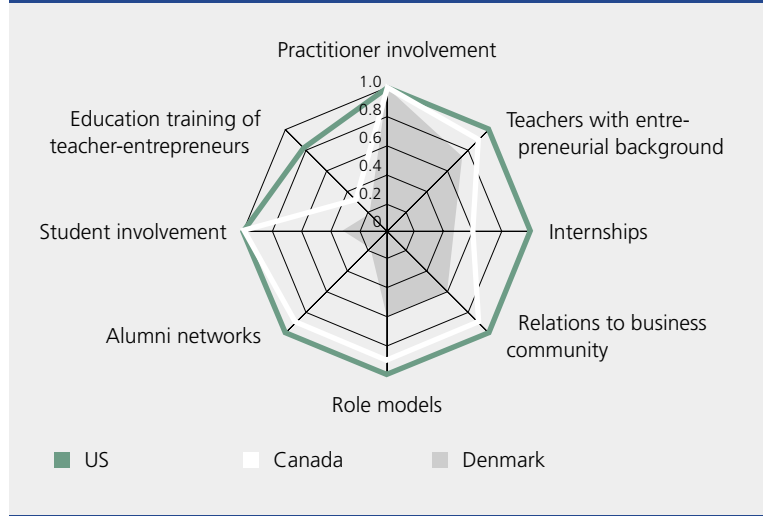
Practitioner involvement is often carried out in a systematic manner and most US universities offer education training for teacher-entrepreneurs. Education training is focused on providing practitioners with tools that enable them to deduct general knowledge from their practical background as well as providing fundamental pedagogical principles.

The involvement of role models and alumni is an important part of entrepreneurial education in the United States. Alumni serve as fund raisers, guest teachers, or internship sponsors, and often participate in entrepreneurial activities (lectures, conferences, seminars).

In most areas the Canadian universities are ranked marginally lower compared to the United States. In the area of education training of teacher-entrepreneurs the Canadian score is significantly lower compared to that of the United States.

A relatively large share of Danish institutions has been successful in attracting teachers with an entrepreneurial record. A large proportion of Danish universities do not offer internships or courses that facilitate strong relations with the business community. The Danish performance in the areas of alumni- and student involvement, and education training of teacher-entrepreneurs is lower compared to the top 3 (Figure 4.10).

Figure 4.10 Relations with business community, student involvement and education training of teacher-entrepreneurs



Source: National Agency for Enterprise and Construction (2004): "Background report: Entrepreneurship education at universities – a benchmark study".

As mentioned earlier US entrepreneurship programs are frequently offered through dedicated entrepreneurship centres. Entrepreneurship centers are responsible for academic activities and also assume a culture-affecting role.

By uniting activities in a single entity and working closely with the business community entrepreneurship centers play a vital role in regional development.

Entrepreneurship centers are the driving force behind the foundation and development of regional networks that bring together teachers, politicians and business leaders. Networks are important in facilitating knowledge sharing and often serve as entrepreneurial “midwives” for new initiatives.

Summary

The analysis points to significant differences in the area of entrepreneurial education when comparing Denmark to the top-performing countries. Participation rates and scope of activities are significantly higher in the United States. Furthermore US institutions have a grater supply of entrepreneurial courses at graduate/postgraduate level and have more funds available for new activities.

American universities are more open to outside influence, and on-going relations with the business community as well as students and alumni are much stronger compared to Denmark.

In the United States entrepreneurship programs are anchored in dedicated entrepreneurship centres that are responsible for education, research and a host of other activities that help promote entrepreneurship across campus.

Universities play a significant role in promoting regional entrepreneurial activity by arranging networking events and engaging in development projects (Box 4.2).

Box 4.2 Universities as regional drivers of growth

University of San Diego, the United States

San Diego suffered a severe economic setback in the 1980s and early 1990s due in part to severe cut-backs in the defence industry.

High-profile individuals, regional business leaders and regional research centres embarked on a venture to restore regional growth by transforming traditional industries into knowledge-based industries, primarily in biotech and wireless technologies. Regional business leaders, politicians and scientists agree that the University of San Diego played a key part in the revitalisation of the San Diego economy.

The University of San Diego has been a major contributor by teaching and offering postgraduate and executive education to individuals working in the emerging knowledge-based industries.

The extent of the University's interaction with the immediate surroundings is also highlighted, particularly as an instigator of stakeholder networks that facilitate important knowledge sharing. The Connect Program has been particularly important in addressing regional development (Box 4.3).

There is a broad consensus among the involved parties that the Connect Program and the University of San Diego have contributed to the creation and development of high-tech industries in the San Diego Region.

Source: Betts, Julian and Carolyn Lee (2004): "Universities as Drivers of Regional and National Innovation: An Assessment of the Linkages from Universities to Innovation and Economic Growth".

4.3 Entrepreneurship infrastructure

It takes talent, energy and courage to turn a business idea into a successful company. Success also hinges on the availability of competences and skills among entrepreneurial stakeholders.

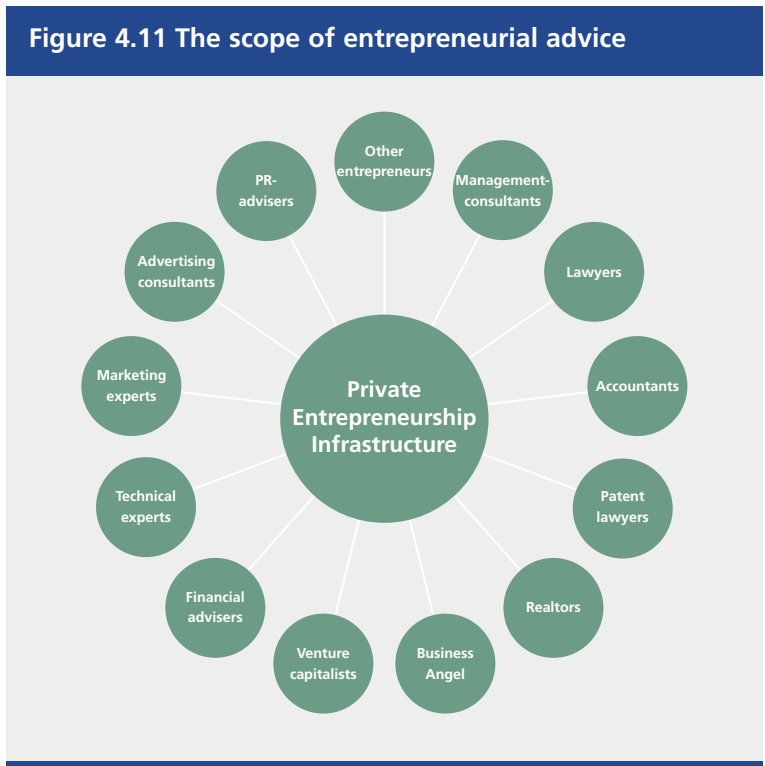
The successful launch of a company is a complicated endeavour and the challenges of the global knowledge economy make it no less difficult. The pool of skills required surpasses that of the individual entrepreneur or entrepreneurial group, and is particularly critical to high-growth companies.

The scope and quality of entrepreneurship guidance is critical to regional entrepreneurial activity. The term entrepreneurship infrastructure originates from the United States and refers to the collective skills of

advisers and their networks. In the United States the terms ecological system, socioeconomic structure and entrepreneurship infrastructure are used randomly.

Advisers and Networks

The demand for advisory services reflects the specific challenges faced by entrepreneurs. Most entrepreneurs and emerging enterprises require a broad range of advisory services during the early stages (Figure 4.11).



A strong entrepreneurship infrastructure requires that skills are available in the immediate surroundings, that advisers understand the specific entrepreneurial challenges, and that adviser fees are not paid until the company has established itself as a viable market player and shows solid earnings.

It is of crucial importance that advisers are part of various closely-knit networks attached to specific clusters or technical skills. A biotech research company, a computer game manufacturer and a fashion company all have to address different challenges.

The lack of an entrepreneurial record may be an impediment to building a strong entrepreneurship culture due to the lack of skilled advisers. Correspondingly it is difficult to attract advisers and networks to regions with limited entrepreneurial activity.

It takes three to four entrepreneurship generations to build a strong entrepreneurship infrastructure. An entrepreneurship generation covers the time accrued from drafting a business plan to establishing a business that generate earnings and has a solid capital base. Non-profit organisations have been the driving forces in developing strong entrepreneurship infrastructures in the United States. Stakeholders include entrepreneurship centres, incubators or non-profit organisations such as UCSD Connect.

Box 4.3 UCSD Connect

Founded in 1985 by the University of California at San Diego (UCSD), UCSD Connect is a non-profit organisation that has been focused on building a high-tech business cluster in the San Diego area through memberships and networking events.

The list of networks cover all aspects of business development including funding, management and board composition, how to attract skilled labour, and creating spin-offs. Most activities are targeted at entrepreneurs.

The “Springboard Program” is a networking event aimed at improving the entrepreneurship infrastructure and serves as a valuable event for regional entrepreneurs.

Springboards introduces promising entrepreneurs to San Diego’s business networks, and serves as a network forum for business leaders as they guide future generations of entrepreneurs forward.

Entrepreneurs spend 8 to 12 weeks in coaching sessions with a Connect employee. Upon completion of this process, the entrepreneur is invited to make a presentation of their business model to a select group of experts. This group will usually include business service providers, serial entrepreneurs, and potential Business Angels and venture companies. The group is comprised of business leaders, managers, and senior consultants. Junior partners and other less-experienced managers and specialists are only allowed to participate in the Program if they are accompanied by more experienced colleagues.

In Denmark non-profit organisations are not active participants in building entrepreneurship infrastructure and Danish universities do not have dedicated entrepreneurship centres that address the issue. Furthermore Danish incubators and “innovationsmiljøer” have yet to assume a more active role in fostering entrepreneurship infrastructures.

Things may be changing. Launched in 2000 Connect Denmark has applied a business model similar to that of Connect San Diego. Connect Denmark covers the entire country but its main focus is on creating strong regional infrastructures in areas where the entrepreneurial potential is sizable (Box 4.4).

Box 4.4 Connect Denmark

Founded in April 2000 Connect Denmark draws on inspiration from the UCSD Connect Program. The scope and magnitude of networking activities are limited compared to UCSD. Still, Connect Denmark offers a range of interesting entrepreneurial activities. A *Springboard* provides an opportunity for entrepreneurs to present their new business/products, as well as needs, in the form of a presentation to a panel of CONNECT members. The *Investment Forums* bring together entrepreneurs and potential investors. During a financial forum between 20-30 new entrepreneurs present their ideas to potential investors. The participating entrepreneurs are chosen via application and a screening process.

Since the year 2000 approximately 200 entrepreneurs have participated in Connect activities. A significant share has later on been connected to Danish incubators. In 2004 the 200 companies received a total of 500 million DKK in venture capital.

Benchmarking incubators

Incubators, science parks, development parks and business service centers are important elements in the development of regional entrepreneurship infrastructures. These institutions harbour valuable skills and are instrumental in building entrepreneurship networks as well as networks that bridges the gap between entrepreneurs and external advisers.

There exists no clear-cut definition or any measurable distinction in determining the scope of activities carried out by the various institutions. Incubators and science parks tend to be focused on knowledge-intensive entrepreneurs with global potential. Development parks address a broader group of entrepreneurs, including low-potential entrepreneurs.

Business organisations and developments parks were discussed in a 2003 report published by the National Agency for Enterprise and Housing. An invitation to tender was held to promote the development of a nation-wide, locally anchored private network of business leaders working as entrepreneurship mentors.

This benchmark study goes further in analysing Danish incubators.¹¹ Incubators are found in both the private sector (Leo Incubator) and in the crossroad between public and private institutions (Symbion Science Park). Potential high-growth entrepreneurs may opt to be attached to incubators that provide valuable expertise in the areas of networks, product development and firm creation.

The Danish incubators included in our analysis are often attached to educational establishments such as universities and public research facilities but are organised in various manners. Some incubators operate as independent businesses under the 1998 Innovation Scheme.¹² Others are integrated in research parks that host newly established companies and supply office space for well-established companies.

A total of 19 incubators (six from the United States, five European, and eight Danish) are selected for further investigation (Table 4.2).

Table 4.2 Incubators covered in the report

| Danish incubators | | | Number of companies |
|------------------------|------|---|---------------------|
| Name | Year | Attached university | |
| DTU Innovation | 1998 | DTU and Teknologisk Institut | 50 |
| Forskerparken CAT | 1991 | Roskilde University, Risø og DTU | 30 |
| HIH Development | 1998 | HIBAT | 30 |
| NOVI | 1988 | Aalborg University and others | 40 |
| Syddansk Innovation | 1998 | University of Southern Denmark and others | 28 |
| Symbion Science Park | 1986 | University of Copenhagen and others | 24 |
| Teknologisk innovation | 1998 | Teknologisk Institut | 50 |
| Østjysk Innovation | 1998 | Aarhus University and others | 44 |

11 National Agency for Enterprise and Construction (2004): "Background report: Incubator Benchmark".

12 The Innovation Scheme allows for government co-funding and counselling for innovative and knowledge-based companies. Several Danish incubators have launched venture companies.

| US incubators | | | Number of companies |
|------------------------------------|-------------|--|----------------------------|
| Name | Year | Attached university | |
| ATDC | 1980 | Georgia Institute of Technology and others | 36 |
| Austin Technology Incubator (ATI) | 1984 | University of Texas, Austin | 25 |
| MBIdeas | 1988 | Clark University and others | 15 |
| Rensselaer | 1980 | Rensselaer Polytechnic Institute | 45 |
| San Jose Software Business Cluster | 1994 | University of California, San Jose | 15 |
| UCSD Connect – Springboard Program | 1985 | University of California, San Diego | - |

| Finnish, Swedish and UK incubators | | | Number of companies | |
|---|-------------------------------|-------------|-------------------------------------|----|
| Country | Name | Year | Attached university | |
| Finland | Jyväskylä Science Park (JSP) | 1992 | Jyväskylä University | 16 |
| Finland | Oulutech Ltd | 1994 | Oulu University | 17 |
| UK | Babraham Bioincubator | 1999 | Babraham Bioscience initiatives | 21 |
| UK | Campus Ventures | 1995 | University of Manchester and others | 40 |
| Sweden | Chalmers Innovation, Göteborg | 1999 | Chalmers University | 30 |

Source: National Agency for Enterprise and Construction (2004): “Background report: Incubator Benchmark”.

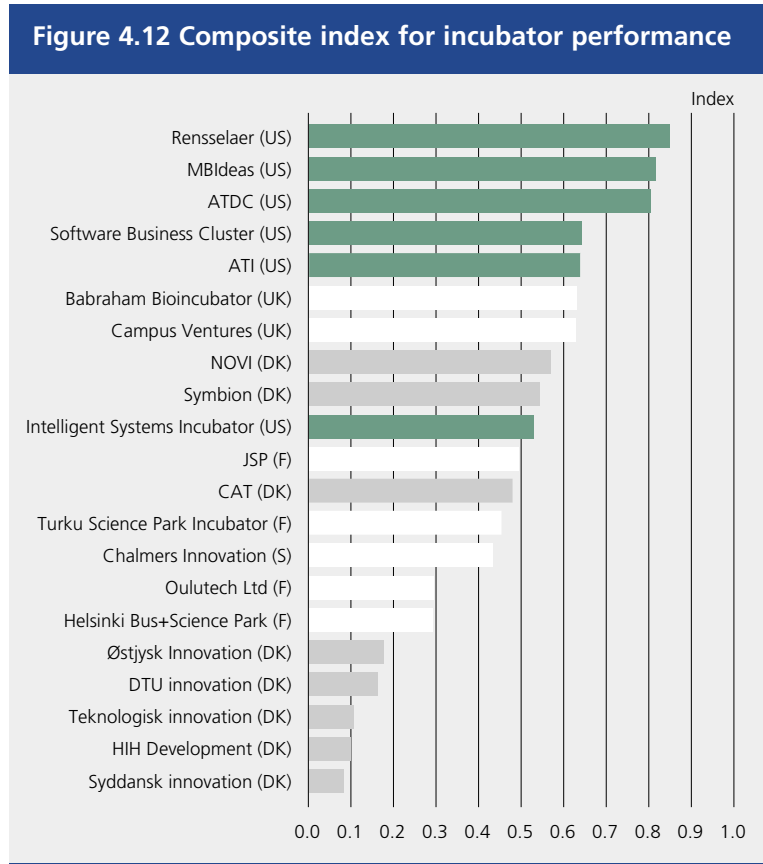
Incubators have been interviewed and have all been highly active in supplying valuable information. Incubators have been compared in terms of performance and business activities.

The performance index is a weighted index comprising exit rates and capital raised. Exit rates cover the number of viable companies that have left the incubator (as a share of the total number of companies in the incubator).

Capital raised is defined as the amount of private venture capital (seed and start-up) provided during the period where companies have been part of the incubator.

Exit rates and capital raised should be calculated over a prolonged period of time (four to five years) if any meaningful comparison is to be conducted. Still the indicator must be treated with some caution. Most incubators operate in one or more specific areas of expertise, and there may be differences in the optimal incubation period for different types of business. Also capital needs may vary across technologies.

However we detect significant variation in incubator performances. Three US incubators head the ranking followed by a group of ten incubators that posts solid records. This group includes three Danish incubators, NOVI, Symbion and CAT. The remaining incubators are ranked lower both in terms of exit rates and capital raised (Figure 4.12).



Note: The index is a weighted average of exit rates and capital raised.

Source: National Agency for Enterprise and Construction (2004):

“Background report: Incubator Benchmark”.

Incubator business areas have been selected and specified in close dialogue with several of the incubators included in the report. It has been our intention to include business areas that cover all incubator business activities. The individual incubators are active in several business areas; however we detect a significant degree of variation in terms of the scope of activities.

Incubator activities are divided into seven areas:

- Degree of specialisation – is the incubator specialised in a specific sector or technology.
- Strategic counselling – does the incubator provide targeted strategic counselling.
- Financing – does the incubator have venture capital at its disposal (own venture fund or strategic co-operation with a venture fund).
- Monitoring – are entrepreneurs monitored and are sanctions imposed if certain targets are not met.
- Networks – does the incubator provide an active network of external advisers.
- Outreach – Is the incubator actively searching for entrepreneurs that match incubator objectives.
- Co-operation with knowledge institutions – Does the incubator have close relations with a knowledge institution with a strong record in the area of specialisation.

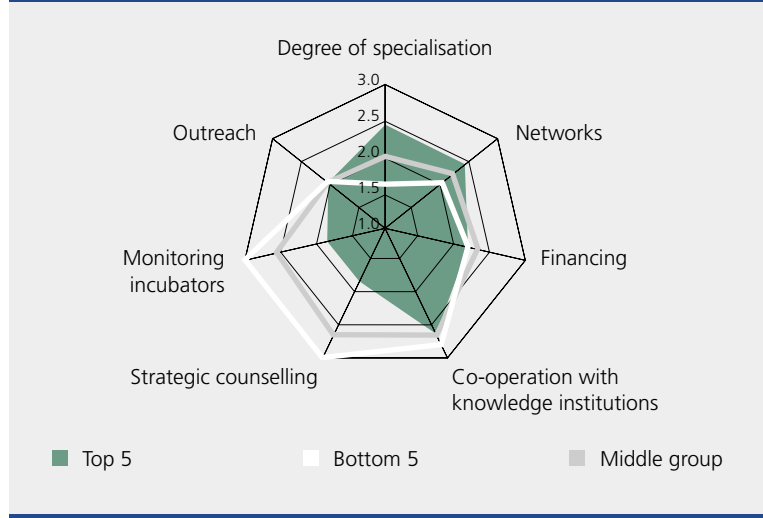
Interviews that cover issues related to all seven business areas have been conducted with the incubators. Information retrieved from the Internet has also been included to describe activities within each of the seven areas.

Incubators are ranked in each of the business areas depending on their scope of activities. This makes it possible to rank incubators on their scope of activities (please refer to the background report on incubators).

Incubators have been divided into three groups to identify specific patterns in incubator activities. The first and third group are made up of the top 5 and the 5 lowest-performing incubators, respectively. The remaining nine incubators make up a middle group.

The top-performing incubators are more specialised and have more extensive networking activities. In the areas of financing, co-operation with knowledge institutions, and outreach we detect no significant differences between the three groups. Strategic counselling and start-up monitoring are significant business areas for low-ranked incubators, but fail to attract much attention from the top-performers (Figure 4.13).

Figure 4.13 Comparing business areas among three groups of incubators



Source: National Agency for Enterprise and Construction (2004): “Background report: Incubator Benchmark”.

The top-performing incubators do not offer strategic counselling and start-up monitoring is often handed over to external advisers that are active members of the incubator network.

The high activity level in strategic counselling and monitoring found among low-performing incubators is explained by the fact that these incubators are rooted in regions where the entrepreneurship infrastructure is weak. It has simply been impossible to create strong networks. It has been left to the incubator to develop the necessary skills in the area of strategic counselling. Correspondingly incubators themselves have taken on the responsibility to monitor start-ups.

Interviews have revealed that the top-performers have entrusted external advisers with the task of providing guidance. Interviews confirm that the top-performing incubators are rooted in regions with a strong entrepreneurship infrastructure.

A second round of interviews was conducted with selected incubators. They were asked if they had initiated or had been involved in activities aimed at strengthening the regional entrepreneurship infrastructure.

The top US incubators were or had been engaged in strengthening the regional entrepreneurship infrastructure, while only two of the Danish incubators had been involved in such activities. It appears that regional entrepreneurship infrastructures are strategic goals for a wide range of US incubators (Box 4.5).

Box 4.5 The role of incubators in building entrepreneurship infrastructures

ATDC's contribution to Atlanta's entrepreneurship infrastructure

Regional organisation and education of Entrepreneurial Advisers

The ATDC (the Advanced Technology Development Center) united small and fragmented groups of advisers and business developers in the areas of entrepreneurship and commercialisation of high-tech products. The network was launched in 1981 as "The Business & Technology Alliance". The main purpose of the network was to professionalize and integrate counselling and guidance of high-tech start-ups. Today the network is called TAG (Technology Association of Georgia) and provides a professional forum for venture capital, business leaders and promising entrepreneurs.

The ATDC was engaged in raising venture capital across the Atlanta region. The first venture company in Atlanta was established with the confines of ATDC, and the ATDC was the driving force in setting up conferences with venture companies from other regions (Boston and Silicon Valley). Although investment levels are significantly lower compared to Silicon Valley and Boston, Atlanta continues to be the dominant venture capital city in the South Eastern part of the United States.

The development of a regional entrepreneurship infrastructure is often carried out in close co-operation with entrepreneurship centres at regional universities (Box 4.6).

Box 4.6 Incubator involvement in building entrepreneurship infrastructures

ATI's contribution to the entrepreneurship infrastructure in Austin, Texas

Working closely with the University of Texas, Austin

ATI has been instrumental in improving the entrepreneurial culture- and infrastructure in the Austin area. The incubator offers a variety of independent courses at the University of Texas, and ATI has been involved in the planning of other entrepreneurial-related activities. ATI supplies a broad range of courses and maintains a strong focus on practical issues related to entrepreneurship.

ATI offers a range of introductory courses as well as targeted programs including strategic advice and access to financing, among others.

Summary

Overall the benchmark study of incubators shows that:

- Incubators are a vital part of regional entrepreneurship infrastructures especially where incubators are active participants in maintaining and strengthening entrepreneurship infrastructures.
- Incubators profit from engaging in strategic co-operation with knowledge institution and may opt to specialise in areas where the knowledge institution has a strong academic record.
- Entrepreneurial counselling should be managed by skilled external advisers that operate in tightly-knit networks and are specialised in specific sectors or technologies.

If Denmark is to draw inspiration from best-practice focus should be directed towards strengthening activities that are conducive to building a stronger entrepreneurship infrastructure within Danish regions.

4.4 Bankruptcy legislation

While 25% of new businesses fail to survive the first year of operation only a limited number of new firms actually go bankrupt. Still bankruptcy legislation has a significant impact on entrepreneurial activity. Parts of the explanation lie in attitude-related and cultural factors, but more substantial elements are also involved. Foreign studies show that the most successful entrepreneurs have gone bankrupt on one or more occasions before finally launching a successful business. This is often the result of the learning-process associated with bankruptcy.¹³

Bankruptcy legislation is all about trade-offs. On the one hand the creditor's interests need to be protected. On the other hand an entrepreneur that finds himself in a financial predicament, through no fault of his own, should be given a second chance.

Bankruptcy legislation balances the political considerations between debtor and creditor interest.

In the United States, Canada and the UK legislation specifically details the length of time that creditors have claims on a bankrupt's assets. Barring any unlawful activities the time spent to close a business is typically one to two years. In Denmark and across most of Central Europe creditors have claims on assets for 20 to 30 years, in some cases even longer. Provisions for rescheduling or cancellation of debt exist given specific requirements.¹⁴

In Denmark the rescheduling of debt is granted upon the settlement of the insolvent estate. In addition to that the rescheduling of debt requires that the entrepreneur's financial conditions are clarified. The actual rescheduling of debt implies that the entrepreneur over a period of five years has to repay the debt from any income that exceeds necessary household expenses. In most European countries the rescheduling of debt is a time-consuming affair, which virtually prevents entrepreneurs from engaging again in future business.

Creditor consideration plays an important part in Denmark and most central European countries, while entrepreneur considerations are heavily favoured in the Anglo-Saxon countries. Korean legislation is built on the same principles found across Central Europe. However recent

13 The Boston Consulting Group, Germany (2002): "A Report on Entrepreneurial Restarters. Setting the Phoenix Free".

14 OECD (2001): "Drivers of growth: Informations Technology, Innovation and Entrepreneurship".

changes dictate that rescheduling of debt is granted one year after bankruptcy barring any unlawful activities.¹⁵

In recent years a growing number of studies on entrepreneurial activity and culture have surfaced under the umbrella of The Global Entrepreneurship Monitor (GEM). GEM covers a wide range of areas including the effect of cultural factors on entrepreneurial activity.

We find a close correlation between cultural factors, such as prestige and risk-taking, and entrepreneurial activity.

Prestige is markedly higher in countries where the political weighing works in favour of the entrepreneur. While this does not point to any causal connection between political considerations with regard to bankruptcy legislation and entrepreneurial culture, we find that political considerations towards bankruptcy legislation are in fact reflected by cultural attitudes.

In the United States entrepreneurship is regarded as a highly prestigious discipline. Often people will include personal bankruptcy in their résumés to underline their working experience. US studies seem to confirm the relationship between bankruptcy experience and entrepreneur success rates. A Dutch survey on “entrepreneurship restarters” also finds a positive correlation between the two.¹⁶

Although the number of company bankrupts is limited we find that the balancing of creditor and debtor considerations is important to entrepreneurial activity. Lower discharge periods stimulate entrepreneurial culture. On the other hand the prestige associated with becoming an entrepreneur will suffer if legislation merely focuses on debtor considerations.

Denmark vis-à-vis the top 3

Four indicators have been used in measuring bankruptcy legislation:

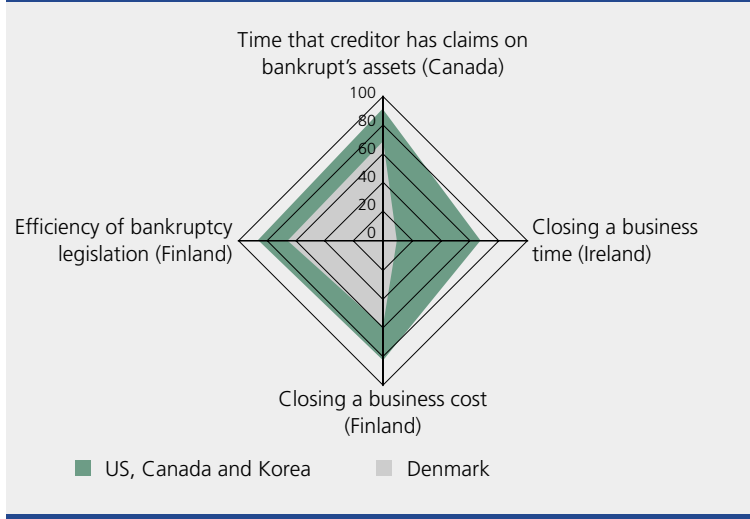
- Length of time that creditors have claims on a bankrupt’s assets
- Discharge period after bankruptcy
- Bankruptcy costs
- Effectiveness of bankruptcy legislation

15 Monitor Group (2004): “Dynamic Benchmarking of Entrepreneurship Performance and Policy in Selected Countries”, p. 37; OECD (forthcoming): “Technical report: Fostering Firm Creation and Entrepreneurship”, p.34.

16 BCG (2002): “A Report on Entrepreneurial Restarters. Setting the Phoenix Free”, the Boston Consulting Group, Germany.

The top 3 consistently show good results and outperforms Denmark in all four areas.

Figure 4.14 Bankruptcy legislation in Denmark vis-à-vis the top 3



Source: Own calculations.

In the top 3 countries the length of time that creditors have claims on assets is one to two years. The discharge period in Denmark is typically seven years.¹⁷

In the top 3 countries the average process time to close a business is 18 months. The process time is much longer in Denmark (app. four years).

Bankruptcy costs in the top 3 countries and Denmark amounts to 4% and 8% of total assets, respectively.¹⁸

The World Bank has compiled a composite index on the effectiveness of bankruptcy legislation. The index measures the extent to which a range of universally recognized measures is reflected in the legislation. The index is a simple average of bankruptcy costs, average discharge period, and the share of individuals whose claims were accepted. Of a possible 100 the top 3 scored an average 91 points with Denmark claiming 79 points.

It will take a considerable effort in altering the current structure of the Danish bankruptcy legislation for Denmark to match the record of the top-performing countries.

¹⁷ <http://www1.oecd.org/publications/e-book/9201131E.PDF>.

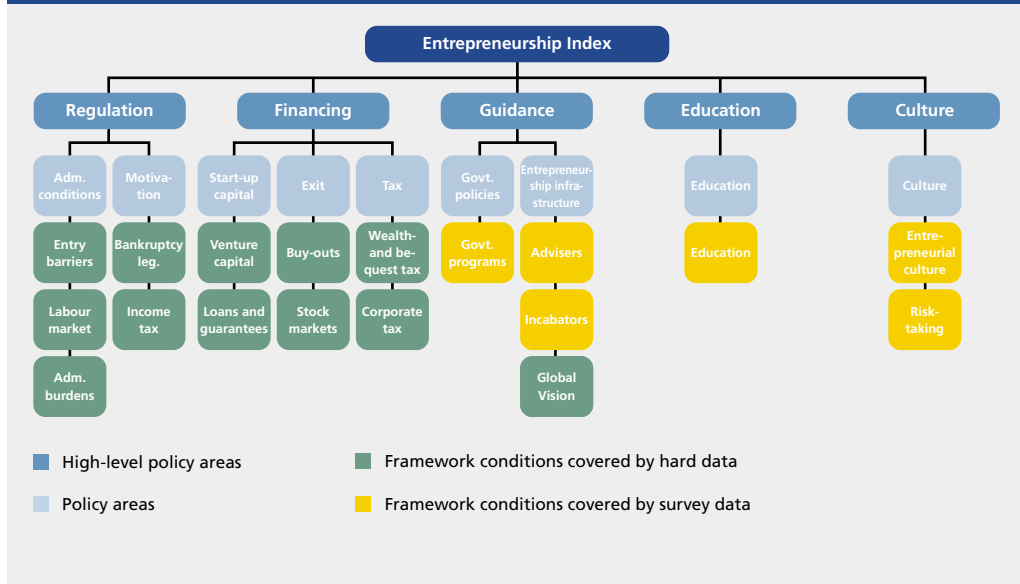
¹⁸ Op.cit.

5. Benchmarking political initiatives

This section details Denmark's record in all 18 policy areas and highlights recent policy implementations.

To the extent possible the following section investigates what changes need to be made for Denmark to claim a position alongside the top-performing countries (the United States, Canada and Korea).

Figure 5.1 Entrepreneurship Index Model



Note: The quality of advisers and incubators in the area of entrepreneurship infrastructure is covered by a simple survey indicator, where a panel of entrepreneurs and experts have been asked to assess the quality of advisers and incubators. The indicator is only available for 8 countries. This implies that only 16 of 18 policy areas are investigated in detail.

Denmark is compared to the top-performing countries in each of the high-level policy areas. More than one indicator cover each of the five high-level policy areas and nine policy areas. Subsequently we detail Denmark's performance for each of the indicators covered by the nine policy areas.

In the area of regulation Denmark is compared to the top-performing countries in the area of overall regulation (*administrative conditions*), and regulation that is specifically focused on motivation (*motivation*).

Denmark's administrative conditions are compared to those of the top-performing countries. Subsequently each of the indicators applied in measuring administrative conditions are assessed. This allows for identifying specific initiatives that will improve Denmark's ranking vis-à-vis the top 3.

Built-in weaknesses in the indicators applied and a lack of precise information on framework conditions in the top-performing countries make evaluation a difficult matter. However the analysis presented does provide a first glimpse of which steps should be taken to improve Denmark's framework conditions.

Recent changes in the Danish framework conditions are also evaluated. The coming years will hopefully see significant improvements in the indicator system allowing for a more consistent framework for comparing Denmark to the top 3 countries.

Indicators are divided into three categories based on how well individual indicators reflect the framework condition that may be influenced by a political initiative:

1. The indicator is based on register data equal or close to the policy instrument in question. The indicator provides a *direct measure* of what it will take for Denmark to match the top 3 countries.
2. The indicator is based on register data and provides an *indirect measure* of the policy area in question. The indicator gives a fair description of the quality of the policy area in question but fails to fully expose the underlying framework condition. Thus it remains difficult to pinpoint exactly what needs to be done if framework conditions are to match those of the best-performing countries.
3. The indicator is based on *survey data* that describes the quality of the policy area in question. The indicator provides a reasonable description of the quality of the policy area. It will often be difficult to pinpoint what it will take for Denmark to match the top 3 countries.

Box 5.1 provides a "reader's guide" to how figures used in this report are interpreted.

Box 5.1 Interpreting figures presented in the report

The various figures presented in the following section compare Denmark to the top 3 countries (the United States, Korea and Canada).

There are two different sets of figures. The report contains a number of top-level figures that provide a relative comparison of principal policy areas and thus offer a standard of comparison. This should enable the reader to form a general view of Denmark's performance in individual policy areas as compared to the top 3.

A second set of figures compares country performances for each individual indicator. This allows for comparing indicators in *absolute* terms. To give an example the area of administrative burdens is compared in terms of the actual number of procedures rather than Denmark's position compared to the top 3 in percentage terms. This allows for tangible assessments of which initiatives should be implemented to bring Denmark in line with the top 3.

The figures illustrate the extent to which the individual indicator describes the framework condition susceptible to influence by political initiatives:

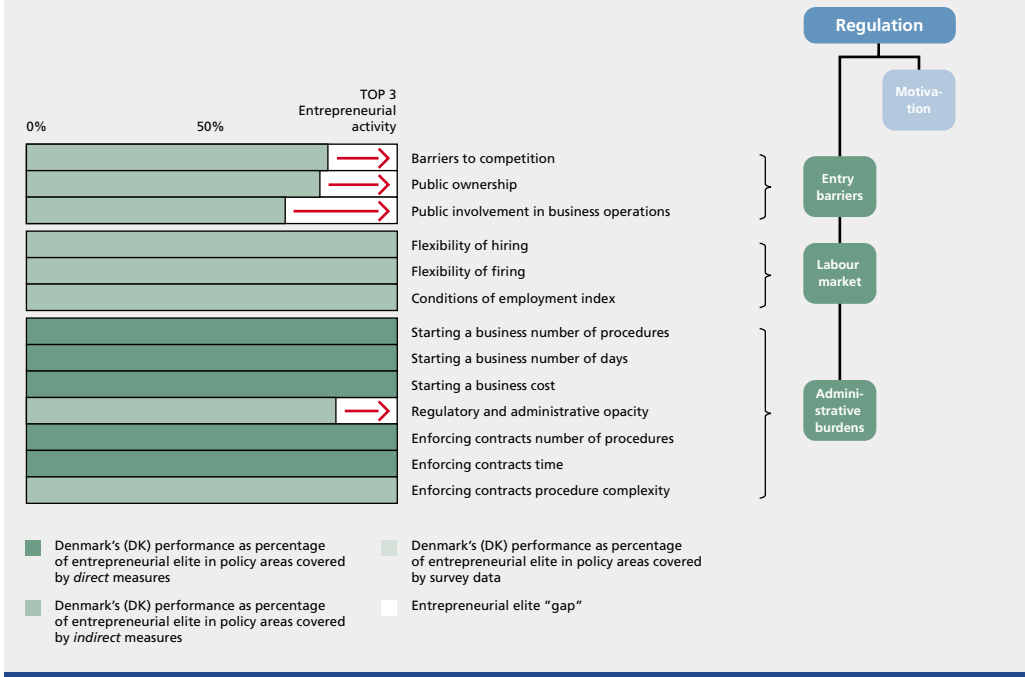
1. If the indicator is based on register data equal or close to the policy instrument in question then Denmark's position is illustrated using dark green.
2. If the indicator provides an indirect measurement of the policy instrument in question then Denmark's position is illustrated using green.
3. If the indicator is based on survey data then Denmark's position is illustrated using light green.

5.1 Regulation

5.1.1 Administrative conditions

The number of entry barriers is marginally higher in Denmark compared to the top 3. However when it comes to administrative conditions pertaining to labour market regulation, and the scope of administrative burdens, Denmark ranks among the best.

Figure 5.2 Comparing framework conditions in the area of administrative conditions



Entry barriers for new firms

Three indicators are applied in benchmarking entry barriers. The first indicator measures the extent of competitive barriers for new firms. The indicator is an OECD index that measures two types of competitive barriers:

- The scope of legal barriers to entry
- The existence of antitrust exemptions for public enterprises or government-mandated behaviour.

In line with most other countries Denmark has phased out government involvement in the production of goods and services. However the Danish welfare model necessitates a higher level of government commitment to various welfare services as compared to the top 3.

Other detailed indicators from the OECD include public ownership and public involvement in business operations. In both areas Denmark has a higher level of public involvement compared to the top 3 (Figure 5.3).

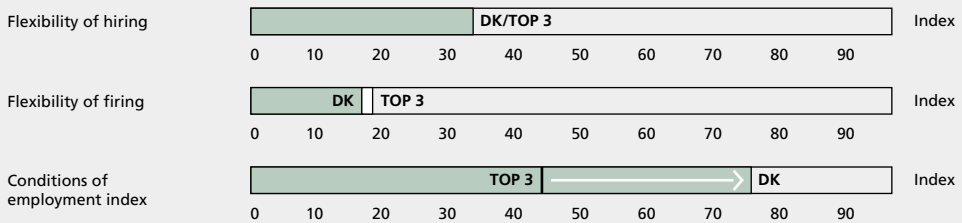
Figure 5.3 Comparing Denmark to the top 3 in the areas of entry barriers for new enterprises



Labour market regulation

In most countries labour markets are regulated by a complex system of legislative measures and institutions. A flexible labour market is a prerequisite for new firm growth and survival rates. Labour market regulation is comprised of five indicators of which four reflect the ability of companies to adjust their work force. The fifth and final indicator mirrors prevailing conditions regarding working hours, holidays, and minimum wages.¹

Figure 5.4 Comparing Denmark to the top 3 in the areas of labour market regulation



¹ Only three of the five indicators are illustrated in the report. The remaining two – recruitment procedures for initial employee and recruitment procedures for additional workers – are based on EU Data, for which reason the United States, Korea and Canada are not covered by available data.

Danish labour market conditions are significantly better or at least on a level compared to the top 3. We see significant variation among the top 3 with respect to procedural requirements for firing new employees. Canada and Denmark post identical scores. The United States is at one side of the spectrum with a high degree of flexibility in firing new employees, while Korea appears to have a lower degree of flexibility. Finally Denmark appears to have better conditions for overtime work compared to the top 3.

Administrative burdens

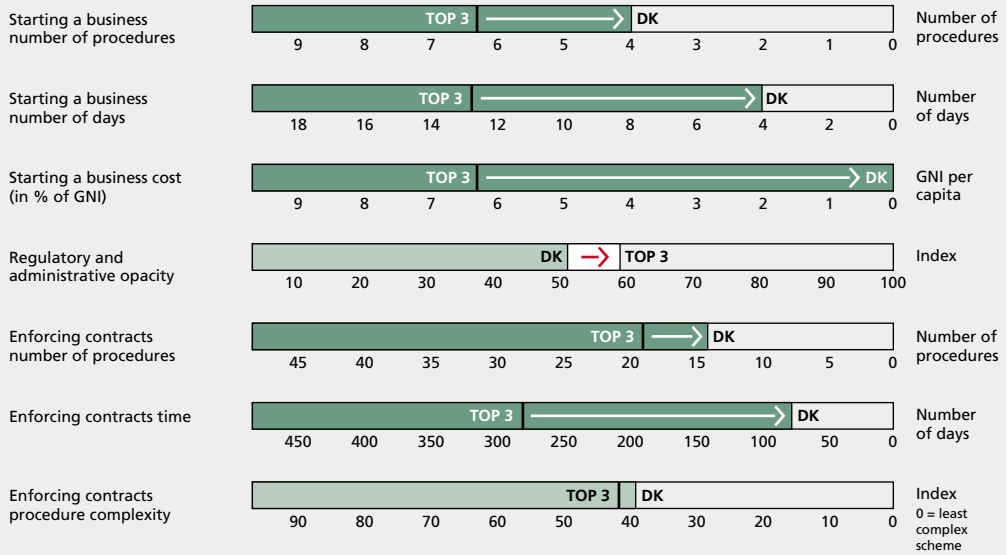
Seven indicators cover the area of administrative burdens. For the majority of indicators applied Denmark is ranked higher or is at least on a level with the United States and Canada. The average score for the top 3 reflects the presence of more complicated procedures in Korea.

The number of start-up procedures in Denmark is four whereas the average number for the top 3 is above six. The United States, Canada and Denmark post similar records with regards to the average duration of a business start-up. The average ranking for the top 3 is negatively affected by Korea (33 days).

Total business start-up costs in the United States and Canada amount to 210 and 222 USD, respectively, whereas start-up costs in Korea amount to a staggering 2240 USD. In Denmark there are no costs associated with starting a business. If start-up costs are measured as a share of BNI, Denmark significantly outperforms the top 3.

Denmark narrowly trails the top 3 in regulatory and administrative opacity, but match the top 3 in flexibility of hiring and flexibility of firing. However the index for flexibility of firing shows a great deal of variation. The United States show a value of five, Canada is at 16, Denmark has the value 17 and Korea has the value 32 (Figure 5.5).

Figure 5.5 Comparing Denmark to the top 3 in the areas of administrative burdens



Key policy implementations

In terms of regulation Denmark matches the top 3. Denmark has successfully reduced the number of administrative barriers and is considered a pioneer in this area. Denmark’s position should be further strengthened by the Government’s entrepreneurship initiative (Box 5.2).

Box 5.2 Policies implemented to reduce the number of administrative burdens

www.startguiden.dk

The Danish Government has introduced an improved version of the www.startguiden.dk that provides a one-stop gateway to local personal guidance as well as a wealth of information and digital tools.

Improved utilisation of IT-tools

The government initiative makes it easier for entrepreneurs to start a production of goods and eases recruitment procedures for initial employees. A number of digital tools are implemented to ease administrative burdens, including a one-stop-shop that provides easy access to various administrative procedures. Consequently forms and information that entrepreneurs have to submit upon registration are available from a single location.

Administrative minimum arrangement

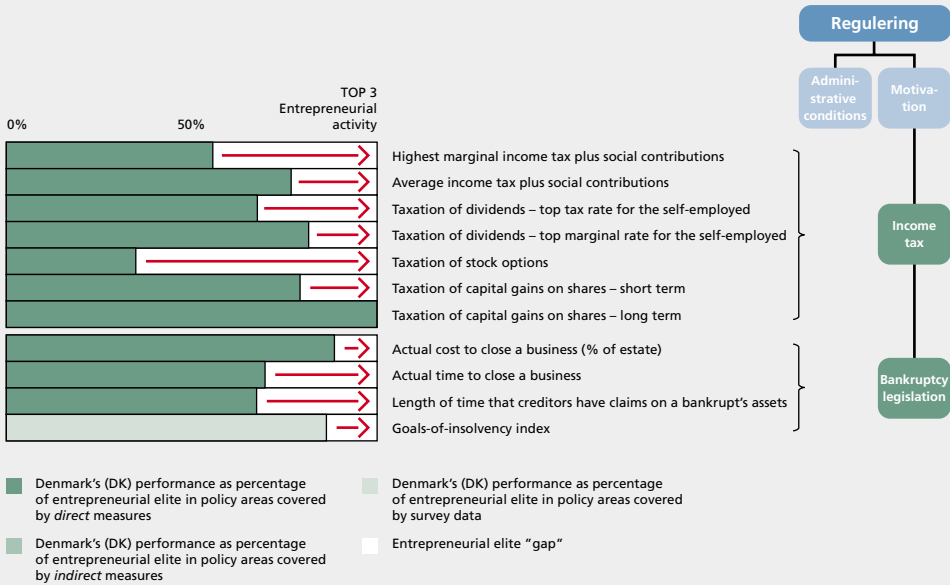
The initiative will relieve administrative tasks for small or newly established firms by as much as 25%.

5.1.2 Motivation

Taxes and bankruptcy legislation

No comparable data is available for Canada and Korea. Thus Denmark is compared only to the United States. It is a well-known fact that tax rates in general are significantly higher in Denmark. Data for the top 3 countries is available in the area of bankruptcy legislation. The analysis shows the quality of framework conditions in Denmark to be significantly lower compared to the top 3 (Figure 5.6).

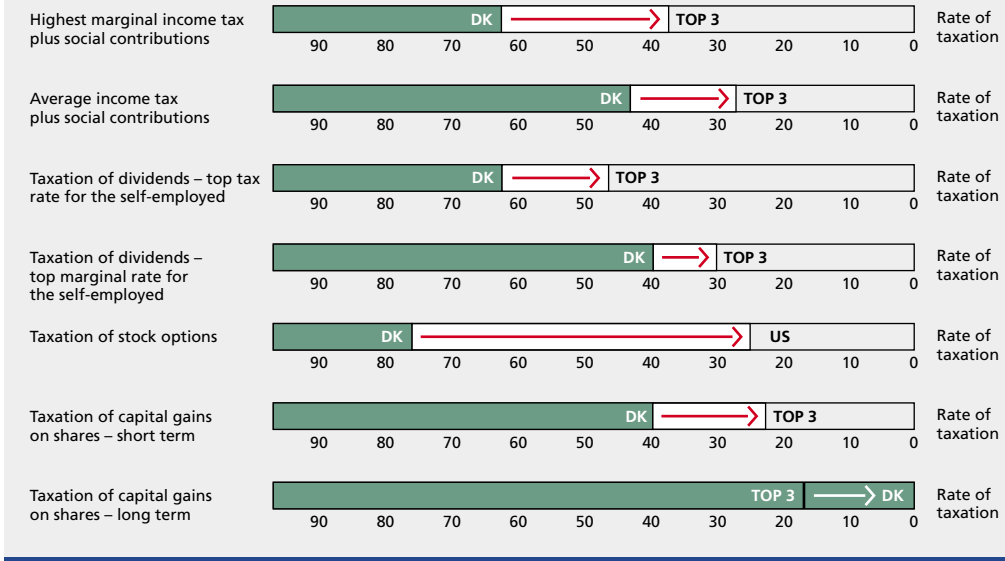
Figure 5.6 Comparing framework conditions in the areas of personal income tax and bankruptcy legislation



Income tax

Seven indicators cover the area of income taxes. Income taxes in the United States are significantly lower compared to Denmark. The presence of a Nordic welfare model implies that Danish income tax rates match those of the other Nordic countries. With regards to capital tax levels we detect smaller differences between the United States and Denmark (Figure 5.7).

Figure 5.7 Comparing Denmark to the top 3 in the area of taxation



Key policy implementations

The latest tax reform reduces income taxes across-the-board and provides other measures that will ease entrepreneur taxation. In spite of this the Danish income tax level continues to be distinctively higher compared to the United States.

Box 5.3 Policies implemented improve entrepreneurial conditions in the area of taxation

Tax reform – lowering income taxes

The government's latest tax reform of 2004 will expire in 2007. The threshold for paying the medium tax bracket will increase by 36,000 DKK. The tax reform lowers the marginal tax rate by six percentage points for 750,000 taxpayers in the intermediate bracket. This group covers a large number of self-employed business owners and employed spouses.

"Tax freeze"

The liberal-conservative government imposed a tax freeze upon its election in the autumn of 2001. The tax freeze commits the government to abstain from raising any tax or duty either as a percentage rate or as a nominal amount. The tax freeze imposes a ceiling on real property value tax so that an increase in property value does not carry additional property value taxation.

Giving the entrepreneur “the benefit of the doubt”

To ensure that citizens are properly recognised as self-employed business owners, tax authorities are required to use any well-founded assessment made by citizens in determining if the individual is genuinely a self-employed business owner.

This should make it easier for self-employed business owners to claim any tax deduction that they are entitled to. A new set of guidelines regarding self-employed business owners has recently been published.

Adjusting the set-up account scheme

A revision of the set-up account scheme has been implemented. Deposits may now be used to cover operating costs including salaries, lease of non-residential premises, lawyer and accountant’s fees incurred when launching a business, market research, and R&D costs, among others.

Bankruptcy legislation

Bankruptcy legislation is covered by four indicators including bankruptcy costs, average duration of business start-up and the length of time that creditors have claims on a bankrupt’s assets. In each of the areas Danish framework conditions fail to match those of the top 3. The fourth indicator measures the overall efficiency of bankruptcy legislation. In this area Denmark is on a level with the top 3.

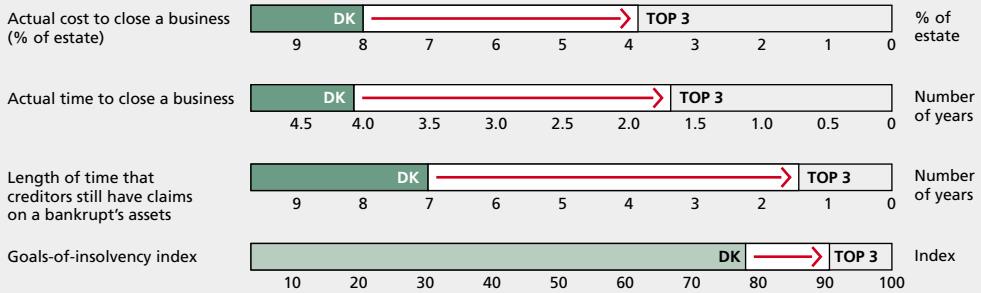
In the top 3 countries the length of time that creditors have claims on assets is one to two years. The discharge period in Denmark is typically seven years.

In the top 3 countries the average process time to close a business is 18 months. The process time is much longer in Denmark (app. four years).

Bankruptcy costs in the top 3 countries and Denmark amounts to 4% and 8% of total assets, respectively.

The World Bank has compiled a composite index on the effectiveness of bankruptcy legislation. The index measures the extent to which a range of universally recognized measures is reflected in the legislation. The index is a simple average of bankruptcy costs, average discharge period, and the share of individuals whose claims were accepted. Of a possible 100 the top 3 scored an average 91 points with Denmark claiming 79 points.

Figure 5.8 Comparing Denmark to the top 3 in the area of bankruptcy legislation



Key policy implementations

It will take a major overhaul of the Danish bankruptcy legislation and practice to elevate Denmark into the world top-class in the area of bankruptcy legislation.

Box 5.4 Policies implemented to revise bankruptcy legislation

Encouraging entrepreneurial “restarters”

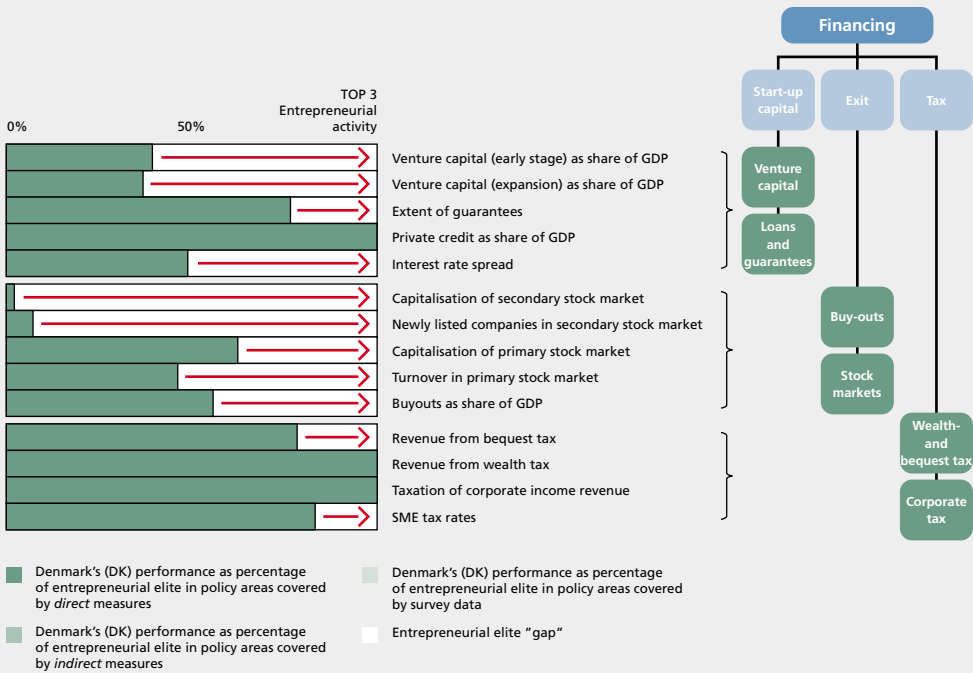
It is the stated goal of the Danish government to ease the stringent rules pertaining to the rescheduling of debt.

The Council on Insolvency Proceedings was asked by the Ministry of Justice to review policy implementations in top-entrepreneurial countries and to consider possible changes in the legislation on winding-up proceedings and rescheduling of debts.

5.2 Financing

The Danish venture market is smaller compared to the top 3. Secondary stock markets are virtually non-existent but remain prevalent in the top 3 countries. The ordinary stock market in Denmark is smaller compared to the top 3. Neither Denmark nor the top 3 has wealth taxes, while revenues from bequest- and corporate taxes are higher in Denmark.

Figure 5.9 Comparing framework conditions in the area of financing



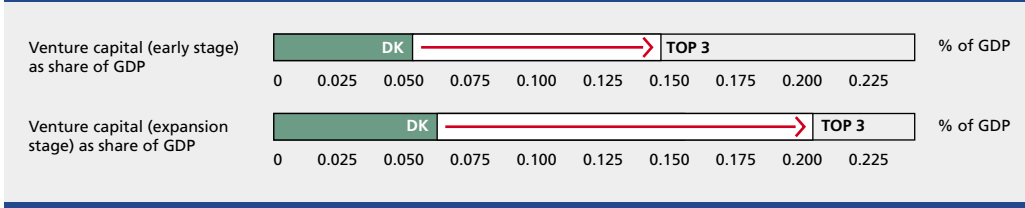
5.2.1 Venture capital

The venture market is comprised of early-stage (seed and start-up) and expansion capital. Both markets are significantly larger in the top 3 countries.

The indicator for early-stage capital is a four-year average (1999 to 2002). The past few years have witnessed a remarkable increase in Danish seed-investments, due to sizable investments made by the Growth Fund and a number of incubators. It is estimated that the Danish seed market presently is on a level with seed-markets in the top-performing countries.

The Danish expansion capital market has witnessed solid growth in recent years, but still trails the best-performing countries (Figure 5.10).

Figure 5.10 Comparing Denmark to the top 3 in the area of venture capital



Key policy implementations

The venture market is influenced by government regulation and initiatives including placement rules for pension funds, mutual fund regulation as well as a number of various tax measures. A FORA venture market benchmark study shows that, with the exception of Business Angels taxation, the level of regulation in Denmark is as favourable to venture market development as framework conditions found in the top-performing countries.²

There appears to be a gap between the Danish seed and expansion venture markets. The continued development of the venture market is an important element in the on-going dialogue between the Danish government and various financial institutions (insurance companies and pension funds).

Box 5.5 Policies implemented to increase the amount of venture capital

The Entrepreneurship Fund

An entrepreneurship fund is currently being set up to facilitate access to early-stage venture capital for new, high-growth enterprises. In liaison with private investors and the Danish Growth Fund the Government will allocate DKK 500 million to the fund.

Business Angels

The Danish Government has taken the initiative to launch an awareness campaign on the tax advantages related to Business Angels’ investments through partnering companies. The Central Customs and Tax Administration will draw up information to Danish companies on existing possibilities in the fiscal legislation with regards to Business Angels.

2 FORA (2004): “Venture Report, Peer Review, Denmark”.

Pension sector investments in new enterprises

As part of the on-going dialogue with the pension sector, the Government is currently looking upon the possibility for improvements in conditions and incentives related to investments in unlisted shares. This will provide a new source of capital source for Danish entrepreneurs and self-employed business owners.

The Deposit Scheme – tax postponement of funds reinvested in new firms

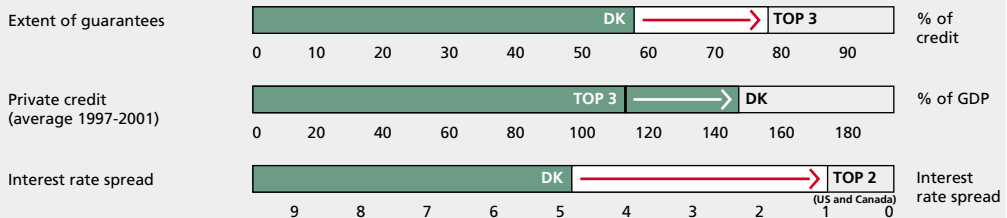
A working group in the Danish Tax Ministry is currently contemplating the possible set-up of a deposit scheme that would allow for tax postponement of funds reinvested in new firms. This would ensure that business funds continue to be available to create new enterprises without having to be an object of taxation.

Loans and guarantees

Three indicators cover the area of loans and guarantees: the maximum extent of guarantees in percent of the credit, private credit as a share of GDP, and interest rate spread. The indicator for interest rate spread is a proxy for the efficiency and competitiveness of the financial sector. A high interest rate spread suggests a lack of competition and low efficiency in the financial markets.

The maximum extent of guarantees in Denmark is slightly lower compared to the top 3. Denmark outperforms the top three with regards to the ratio of private credit. Denmark has a higher interest rate spread compared to the United States and Canada. No data is available for Korea (Figure 5.11).

Figure 5.11 Comparing Denmark to the top 3 in the area of loans and guarantees



Key policy implementations

Compared to the top 3 countries the Danish credit market is in fine shape. Most countries have measures that promote credit facilities for entrepreneurs. The Danish “Growth Guarantee” is a loan guarantee scheme, which is to contribute to a higher degree of willingness to assume a risk in connection with bank loans to new projects in the enterprise. The Danish government is currently considering additional measures to improve credit facilities.

Box 5.6 Policies implemented to improve extent of loans and guarantees

Specialised entrepreneur financing – “get-started loans”

In collaboration with Danish banks the government will set-up a new type of government-backed loans called “get-started” loans. In addition to offering regular financial advice the entrepreneur is offered additional entrepreneurial counselling and sparring. The Government covers a significant share of a bank’s loss on “get-started” loans.

Deductions for losses incurred on guarantees in connection with business start-up

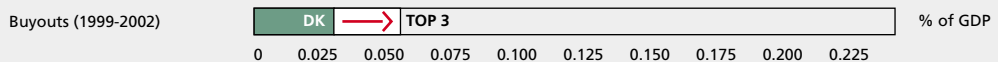
A working group in the Danish Tax Ministry is currently looking into the possibility of providing deductions for losses incurred on guarantees in connection with business start-up activities. A loan guarantees serve as an efficient alternative to direct investments.

5.2.2 Exit

Buyouts

A buyout market may serve as an alternative to or complement the secondary stock market. While the top 3 countries have modest buyout markets while Sweden and the UK have extensive buyout markets. The Danish buyout market is hardly measurable.

Figure 5.12 Comparing Denmark to the top 3 in the area of buyouts

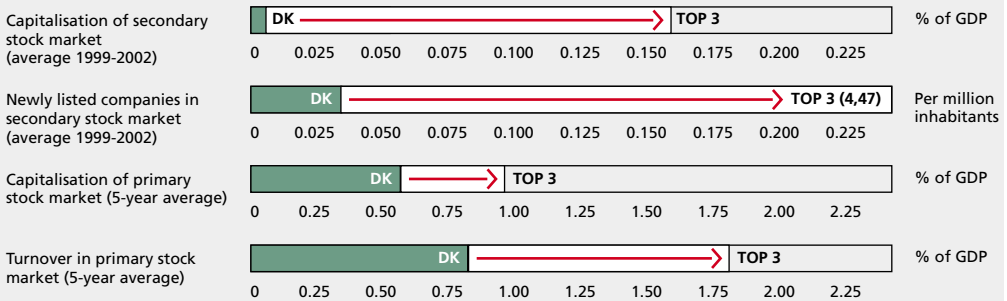


Stock markets

The stock market is comprised of the secondary stock market (the market for unlisted shares) and the primary stock market. The indicator for secondary stock markets is comprised of the capitalisation of the secondary stock market (four-year average) and newly listed companies in secondary stock market (four-year average). The top 3 countries all have well-functioning secondary stock markets whereas Denmark is weak in the area.

The primary stock market is measured by capitalisation and turnover. Both indicators show the primary stock market to be somewhat smaller in Denmark. In 1998 Canada registered 403 newly listed companies. In 1999 the number was an astonishing 2,425.

Figure 5.13 Comparing Denmark to the top 3 in the area of stock markets



Key policy implementations

The last 10 to 15 years have witnessed a few attempts at launching a secondary stock market in Denmark. Despite public backing interest has been limited at best. The absence of a secondary stock market is a major impediment to firm creation and hampers the creation of exit mechanisms that allow venture capital investors to be compensated for their efforts. All in all the absence of a secondary stock market makes it difficult for high growth companies to realise their potential.

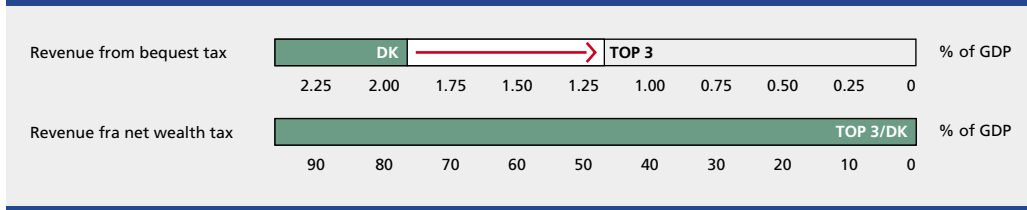
The absence of a secondary market may help explain why the Danish stock market appears to be less developed compared to the top 3.

5.2.3 Tax

Wealth- and bequest tax

Revenue from bequest taxes is significantly higher in Denmark, whereas the discontinuation of the wealth tax has brought Denmark in line with the top 3 countries.

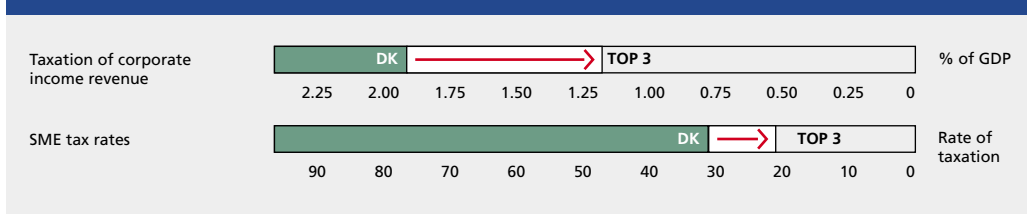
Figure 5.14 Comparing Denmark to the top 3 in the area of wealth- and bequest tax



Corporate taxes

The corporate tax rate and revenue derived from corporate taxation are somewhat higher in Denmark. The top 3 countries offer favourable tax schemes for small-sized businesses.

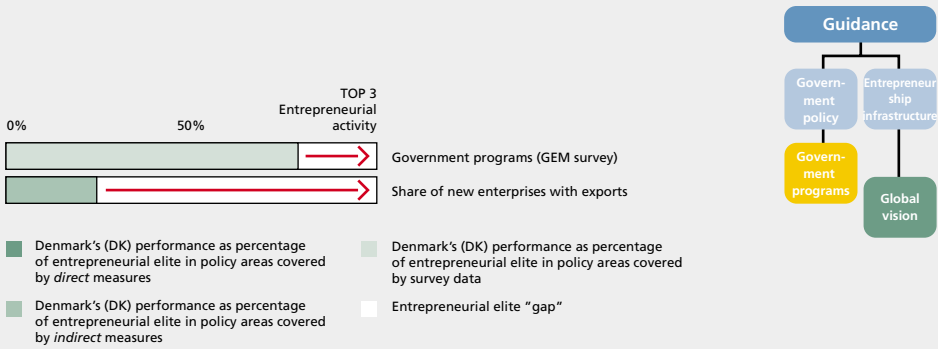
Figure 5.15 Comparing Denmark to the top 3 in the area of corporate tax



5.3 Guidance

While government programs for entrepreneurial guidance are on a level with the best-performing countries, the extent of private entrepreneurship guidance in Denmark is limited.

Figure 5.16 Comparing framework conditions in the area of entrepreneurship guidance

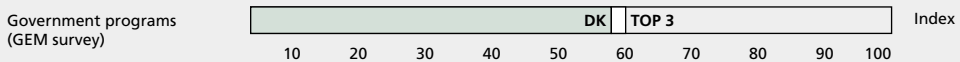


5.3.1 Government policies

Government programmes

It is somewhat difficult to measure the scope and quality of government programmes. Our analysis is based on a survey-based indicator where national experts were asked for their opinion regarding the extent to which government programs aimed at supporting new firms were effective. Programs include the business service program, incubators, patent offices, and the Growth Fund, among others. According to Danish experts the quality and scope of Danish government guidance programmes match those of the top 3 countries.

Figure 5.17 Comparing Denmark to the top 3 in the area of government programs



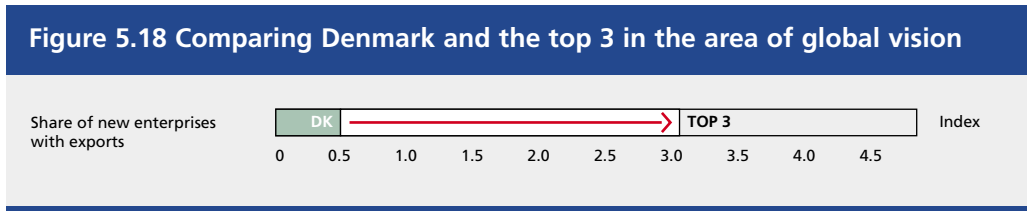
5.3.2 Entrepreneurship infrastructure

Private guidance (Global vision) and incubators

The measurement of scope and quality of private counselling should be treated with some caution. A sample of entrepreneurs and national experts has been asked to rate the quality of private guidance. However the survey-based indicator only covers nine countries. The United

States heads the ranking while Korea is at the bottom. Denmark receives an average ranking.

Private guidance serves an important role in supporting the global potential of new enterprises. The share of new enterprises with exports is applied as a measurement of entrepreneurship infrastructure. The indicator shows Denmark to be far behind the top 3.



Policy implementations

As part of the entrepreneurship plan the Danish government has initiated measures to improve public guidance to entrepreneurs. The initiative includes measures that will facilitate co-operation between private advisers and entrepreneurs.

Additional measures will have to be implemented to bring the Danish entrepreneurship infrastructure in alignment with those found in top-entrepreneurial regions across United States.

Box 5.7 Policies implemented to improve government programmes and collaboration with private advisers

Business service reform

On the first of January 2004 15 new business service centres were launched. The business service centres provide guidance for entrepreneurs and small businesses. With this initiative Denmark now has a unified public guidance- and information system.

Private guidance

The Government has facilitated access to private guidance by launching a virtual counsellor network as well as a number of entrepreneurship clubs. The virtual network consists of advisers that offer free counselling to entrepreneurs and small enterprises. The idea is to set up a database at www.startguiden.dk for quick and easy access to local area advisers. The entrepreneurship club is a forum where business individuals act as sparring partners for entrepreneurs. Through an EU-invitation to tender a contractor was chosen to establish, develop and run a nation-wide network of locally-anchored entrepreneurship clubs. The network will be comprised of 30 to 40 locally anchored entrepreneurship clubs.

Next-generation incubators

In October 2003 seven new incubators were approved for the period 2004 through 2008. The incubators will support the continued entry and development of knowledge-based high-tech enterprises.

Technology transfer units in the biomedicine industry

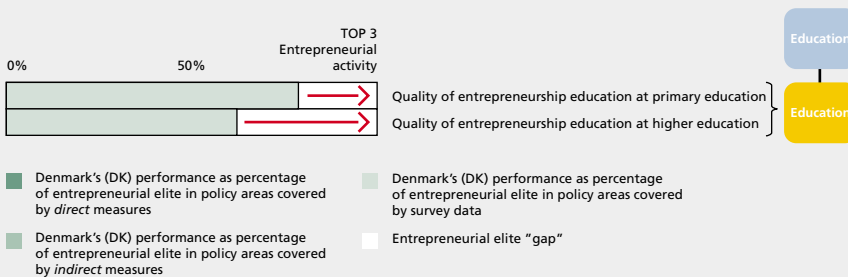
The program strengthens the commercial application of research-based knowledge in the biomedicine industry. Launched in 2003 the initiative has facilitated the set-up of a secretariat at the University of Copenhagen as well as a technology transfer consortium within biomedicine.

5.4 Education

5.4.1 Education

With respect to the level of entrepreneurial education in primary and secondary education, Denmark appears to be in alignment with the top 3 countries. However when it comes to entrepreneurial education in higher education Denmark is far behind the top 3 (Figure 5.19).

Figure 5.19 Comparing framework conditions in the area of entrepreneurship education

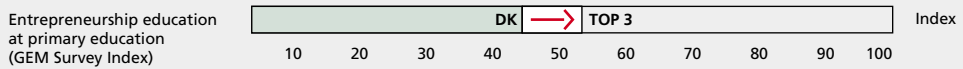


Primary and secondary education

The scope of entrepreneurial activities in primary and secondary education is measured using a survey indicator, where national experts have been asked to assess the extent to which teaching in primary and secondary education nurtures creativity and independence, and provides instruction to market economic principles and entrepreneurship.

The indicator vindicates that entrepreneurial activities in primary and secondary education come close to matching those of the top-performing countries.

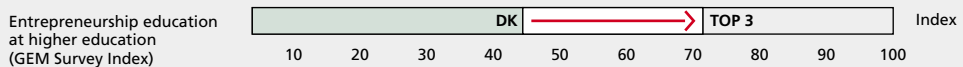
Figure 5.20 Comparing Denmark to the top 3 in the area of entrepreneurial education at primary and secondary education



Universities

The scope of entrepreneurial education in higher education is measured using a survey-indicator. A panel of national experts was asked to evaluate the supply of entrepreneurship courses, the general introduction to entrepreneurship at universities, the extent to which students are prepared to become entrepreneurs, and the quality of life-long learning programs. Data suggests that Denmark will have to make a concerted effort in strengthening entrepreneurship in higher education to match the performance of the top 3.

Figure 5.21 Comparing Denmark to the top 3 in the area of entrepreneurial education at higher education



Key policy implementations

The Danish government has given a higher priority to entrepreneurial education by launching a number of initiatives. It is assessed that recent initiatives will significantly boost Denmark's performance in entrepreneurial education in primary and secondary education.

The Danish government has also taken initiatives to address entrepreneurial education in higher education. It is assessed, however, that further initiatives are necessary to bring Denmark in line with the top-performing countries.

Box 5.8 Policies implemented to integrate entrepreneurship in the entire educational system

Strategies for self-motivation and entrepreneurial culture

The Danish government has presented a strategy to promote innovation, entrepreneurial motivation and self-motivation throughout the educational system. The strategy covers a wide range of initiatives aimed at promoting entrepreneurial culture throughout the Danish education system.

The Independence Fund

The government has launched the Independence Fund to promote entrepreneurial education throughout the entire educational system by facilitating stronger co-operation between the business environment and the educational system.

Secondary education

The government has taken action to promote entrepreneurial education in offering solution camps, entrepreneurship portals, creative technology projects, and by making entrepreneurship an optional subject in upper secondary school. An entrepreneurship simulator will provide students with an opportunity to test their entrepreneurship skills.

The Entrepreneurship Academy

The Entrepreneurship Academy offers merit-awarding courses, teaching competences and entrepreneurship research to students in short- and medium term education and in higher education.

The Entrepreneurship Barometer

The annual Entrepreneurship Barometer measures the entrepreneurial culture among university students and awards the top-entrepreneurship university. In 2003, the IT University was voted 'Entrepreneurial University of the Year'.

Entrepreneurs as innovative teachers

The initiative supports the opening of entrepreneurial establishments to business- and entrepreneurship-related competences including the increased use of teachers and external associate professors with a background as entrepreneurs or self-employed business owners. The occupational structure for research staffs will support the opening of educational establishments to business- and entrepreneurial skills.

Open educational establishments

The government supports the opening of educational establishments to the business community by involving parents and entrepreneurs in day-to-day education. The initiative will facilitate the set-up of a partnership that will foster cooperation between the business community and the educational establishments.

5.5 Culture

5.5.1 Culture

The level of prestige associated with being an entrepreneur, as well as the self-motivation and enthusiasm found among entrepreneurs are valid measures of entrepreneurial culture. Cultural and social norms may also influence the level of risk-taking among entrepreneurs. Compared to the United States and Canada the scope of entrepreneurial culture in Denmark is limited. Information on culture and attitudes in Korea is currently not available.

Figure 5.22 Comparing framework conditions in the areas of culture and attitudes

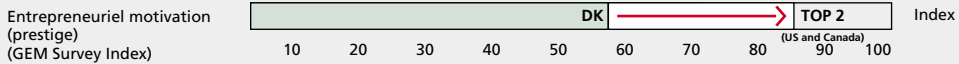


Prestige

It is difficult to measure the prestige associated with being an entrepreneur. A panel of national experts was asked to evaluate a number of attitudinal questions. The motivation (or prestige) indicator covers four questions:

- The creation of new ventures is considered an appropriate way to become rich
- Entrepreneurship is a desirable career choice
- Entrepreneurs have a high level of status
- Entrepreneurs are resourceful individuals.

Figure 5.23 Comparing Denmark to the top 3 in the area of prestige

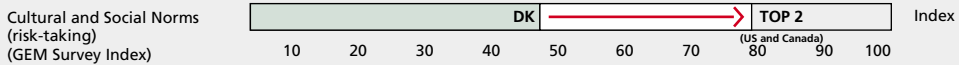


Cultural and social norms

It remains difficult to measure the societal norms related to entrepreneurship. A panel of national experts was asked to assess national culture with regards to entrepreneurship. The indicator for culture and social norms covers four questions:

- National culture is highly supportive of individual success
- National culture encourages creativity, innovation and risk-taking
- National culture emphasizes personal initiative.

Figure 5.24 Comparing Denmark to the top 3 in the area of prestige



Key policy implementations

The top-performing entrepreneurship countries have the best framework conditions for entrepreneurship as well as strong entrepreneurial cultures. It is likely that the causal connection goes both ways: On the one hand framework conditions conducive to entrepreneurial activity foster successful entrepreneurs. On the other hand a strong entrepreneurship culture fosters motivated and risk-taking entrepreneurs.

The past few years have witnessed the launch of a number of initiatives aimed at strengthening entrepreneurial culture in Denmark, including the “Janteknuser” award. Additional initiatives are currently being prepared to help foster a strong entrepreneurial culture in Denmark.

To the extent that the Danish framework conditions are brought in line with those of the top-performing countries, we will see a continued improvement in the Danish entrepreneurial culture.

Box 5.9 Policies implemented to strengthening entrepreneurial culture

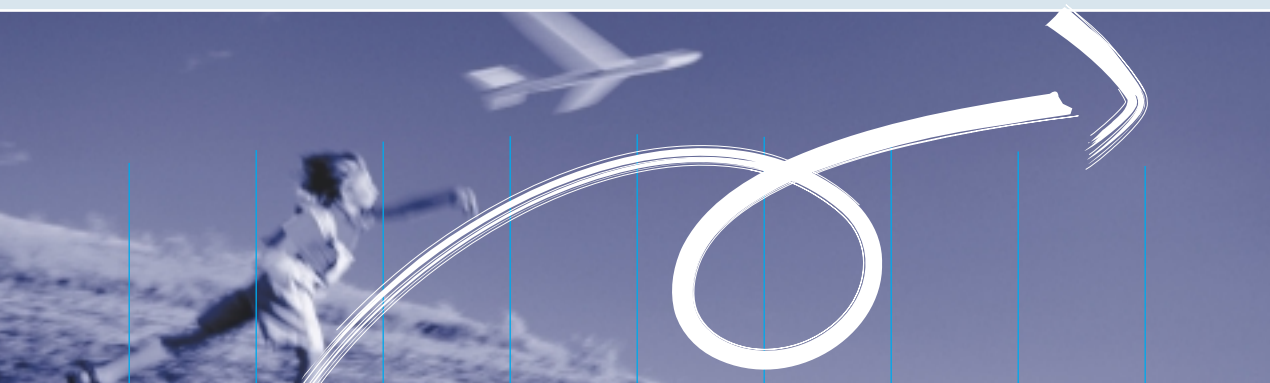
Entrepreneurship Award

The government has launched a self-motivation campaign. The Entrepreneurship Award and extensive media coverage will help create new role models for prospective entrepreneurs.

GEM acknowledgement

Data for our study was partly supplied by the University of Southern Denmark and provided by the Global Entrepreneurship Monitor (GEM), which is a consortium that in 2003 comprised research teams from the following countries: Argentina, Australia, Belgium, Brazil, Canada, Chile, China, Croatia, Denmark, Finland, France, Germany, Greece, Hong Kong, Iceland, Ireland, Italy, Netherlands, New Zealand, Norway, Singapore, Slovenia, South Africa, Spain, Sweden, Switzerland, Thailand, Uganda, the UK (which includes separate reports for Scotland and Wales), The United States and Venezuela.

Names of the members of national teams, the global coordination team, and the financial sponsors are published in the Global Entrepreneurship Monitor 2003 Report, which can be downloaded at www.gemconsortium.org. We thank all the researchers and their financial supporters.



The Entrepreneurship Index is an analytical tool that provides the first systematic mapping and evaluation of entrepreneurship in Denmark.

The index is built on data covering 14 countries and identifies Denmark's strengths and weaknesses.

It is the stated goal of the Danish Government that Denmark is a member of Europe's entrepreneurial elite by 2010.

The index continuously monitors and evaluates Denmark's progress in meeting that goal.