

# Growth-Entrepreneurship in Denmark 2007

– studied via Global Entrepreneurship Monitor

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# Preface

This monograph focuses on growth-entrepreneurship, beyond accounting for the current changes in entrepreneurship in Denmark. How high is the level of entrepreneurial activity in Denmark compared to other countries, and is the trend stable, or upward or downward? How are the framework conditions shaping entrepreneurship and growth in Denmark compared to other countries? What growth has been attained by firms in Denmark, and how is the attained size dependent on the entrepreneur, specifically on gender, education, and entrepreneurial attitudes? What future size and relative growth do entrepreneurs expect in their startups and firms in Denmark, and how are their expectations for growth shaped by their personal characteristics? What future creation of jobs do the entrepreneurs expect in Denmark altogether, and which group of entrepreneurs is mainly behind this collective ambition, is it the starters, the new-business owner-managers, or the established-business owner-managers? Does funding of growth-entrepreneurship differ from funding of more ordinary entrepreneurship, in amount and in sources, and is growth-entrepreneurship predicted to yield paybacks that come especially slow or fast and that will be especially meager or manifold? Does growth-entrepreneurship often go hand-in-hand with innovation? Likewise, is growth-entrepreneurship typically coupled with exporting? How does Denmark compare to other countries in growth-entrepreneurship, are Danish entrepreneurs more or less ambitious than their foreign peers in their expectations for growth? These questions are addressed by analyzing data from our surveys in 2007 and preceding years in Denmark and many other countries, gathered mainly in our research program Global Entrepreneurship Monitor, GEM. The up-to-date surveys and analyses provide leading indicators of current changes in entrepreneurship.

This study is a sequel to my monographs "Entrepreneurship in Denmark 2005" and "Entrepreneurship in the Regions in Denmark 2006" and is the ninth in the series of studies of the current status of entrepreneurship in Denmark, covering each year from 1999 through 2007. The series is part of the research program Global Entrepreneurship Monitor (GEM), conducted by the international consortium Global Entrepreneurship Research Association (GERA), in which the Danish team is headed by the author. The Danish team and the consortium have collected most of the data, but the analyses and interpretations are of course the sole responsibility of the author. For this study I invited Torben Bager to contribute a chapter on policy for growth-entrepreneurship. This study is accompanied by an anthology on the entrepreneurs' networking, *Iværksættere og deres netværk*.

The study has been supported by grants from the International Danish Entrepreneurship Academy (IDEA) and Erhvervs- og Byggestyrelsen (National Agency for Enterprise and Construction). The University of Southern Denmark – through our Department of Entrepreneurship and Relationship Management and our Centre for Small Business Studies – has me granted time and facilities for the research. The study has benefit from discussions with Torben Bager and other colleagues in GEM/GERA.

This publication can also be viewed on the internet at [www.cesfo.dk](http://www.cesfo.dk) and [www.sam.sdu.dk/ansat/tsc](http://www.sam.sdu.dk/ansat/tsc) where also details of the study are published.



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# Sammenfatning

“Entreprenørskab” betegner den entreprenante aktivitet der består i at opdage og udnytte forretningsmuligheder ved at starte og drive virksomhed. Det omfatter dermed også “intraprenørskab” der betegner opdagelse af muligheder undervejs i driften af eksisterende virksomheder og udnyttelsen deraf ved at starte og drive en enhed. Aktiviteten “opstart” kaldes nu ofte iværksætteri, mens aktiviteten “drift af virksomhed” ofte kaldes ejerledelse eller selvstændig erhvervsdrift. Betegnelsen entreprenørskab dækker hermed også iværksætteri og ejerledelse eller selvstændighed.

Entreprenørskab er en aktivitet der udføres som en erhvervsbeskæftigelse, der egentlig bør betegnes entreprenør efter det oprindelige franske *entrepreneuer*, der i angelsaksiske samfund er blevet til betegnelsen for denne beskæftigelse. Entreprenør sammenfatter hermed de beskæftigelser, der ofte betegnes iværksætter, ejerleder og selvstændig erhvervsdrivende.

Entreprenørskab er blevet etableret og institutionaliseret som en samfundsinstitution med institutionelle og kulturelle rammer. Den kulturelle værdi, der af samfundet tillægges entreprenørskab, kommer kulturelt til udtryk i prestige af entreprenør som erhvervsbeskæftigelse, i anerkendelse af veludført entreprenant virke og også i undervisning i entreprenørskab.

Institutionaliseringen af entreprenørskab foregår også i verdenssamfundet, hvor et verdensomspændende netværk af indflydelsesrige organisationer, centreret omkring OECD, rådgiver om rammer der kan fremme entreprenørskab. Den verdensomspændende institutionalisering af entreprenørskab er et led i moderniseringen, udviklingen og globaliseringen af menneskeheden.

Siden 1990erne er den globale institutionalisering af entreprenørskab også fremmet af en international sammenslutning af forskere, nu formaliseret som Global Entrepreneurship Research Association (GERA), især gennem sammenslutningens forskningsprogram Global Entrepreneurship Monitor (GEM), som dette studie og forfatteren er tilknyttet, som National Team Leader for det danske forskerteam.

I forskningsprogrammet Global Entrepreneurship Monitor gennemfører vi hvert år en spørgeskemaundersøgelse af voksenbefolkningen i hvert deltagende land og også en ekspertvurdering af landets rammevilkår (Chapter 2). Indtil 2007, tilbage til begyndelsen i 1999, har 60 lande deltaget i et eller flere år. Danmark har deltaget hvert år, så vi kan løbende opdatere og se de aktuelle udviklingstendenser. Ved sammenligninger med mange andre lande kan vi studere den generelle dynamik i entreprenørskab, som den er typisk i mange lande, især i de højt udviklede lande, og mere specifikt den danske dynamik.

Vækst-entreprenørskab er i fokus i denne bog. Vækst-entreprenørskab betegner den entreprenørskab der er engageret i at blive større, til forskel fra den entreprenørskab der stagnerer eller endog er ved at blive mindre. Vækst-entreprenørskab i opstartsfasen betegnes ofte vækst-iværksætteri, og omfatter opstartsvirksomheder i den tidlige dannelsesfase (og endnu ikke vokser) med en forventning om at vokse. Vækst-entreprenørskab og især vækstiværksætteri gennemgår nu en institutionalisering i Danmark og i flere andre udviklede lande. Institutionaliseringen omfatter udkrystalliseringen af en særlig slags entreprenør, vækst-entreprenøren og specielt vækst-iværksætteren med den særlige rolle at engagere sig i vækst. Institutionalisering ses

for tiden i den politik for iværksætteri der specifikt fokuserer på at fremme vækst-entreprenørskab og især vækst-iværksætteri, eksempelvis opbygningen af regionale væksthuse. Institutionaliseringen af rollen som vækst-entreprenør og især vækst-iværksætter ses i den nye belønning for at spille denne rolle, nemlig en skattefordel der tildeles for opnået vækst.

Bogen her søger at besvare nogle spørgsmål om entreprenørskab og dernæst en række spørgsmål om vækst-entreprenørskab.

### **Entreprenøriel aktivitet i Danmark: Tendenser og sammenligninger med andre lande**

*Hvor højt er niveauet i entreprenørskab og iværksætteri i Danmark sammenlignet med andre lande, specielt de udviklede lande? Hvad er udviklingstendensen, stagnerer niveauet eller er det stigende eller faldende? (Chapter 3).*

Nu, i 2007 i Danmark, er niveauet af iværksætteri i opstartsfasen, målt som voksenbefolkningens rate af iværksættere der er i færd med at starte eller lige har startet en virksomhed, omtrent som det typisk er for de udviklede lande. Igenem adskillige år, og nu fortsat, er Danmark i midten blandt de udviklede lande i iværksætteraktivitet i voksenbefolkningen.

Men det er yderligere informativt at skelne mellem senere faser og tidligere faser. I de senere år har vi i Danmark oplevet en stigning i grundlæggelsen af nye virksomheder samtidig med et fald i ophør, resulterende i en stigning i eksisterende virksomheder. Men når vi måler de tidligere faser, så ser vi i Danmark en stagnation i raten af folk der forsøger at starte virksomhed og i den allertidligste fase ser vi et fald i raten af folk der har til hensigt at starte ny virksomhed inden for de næste få år. Dette fald i intentioner i Danmark kan betragtes som et forvarsel om et kommende fald i opstartsrate.

### **Rammevilkår for entreprenørskab i Danmark og andre lande**

*Hvorvidt ændres rammevilkårene for iværksætteri i Danmark, hvor gode er de sammenlignet*

*med vilkårene i andre lande, og hvordan påvirker de niveauet af iværksætteri? (Chapter 4).*

I 2007 og i de tidligere år har vi ved ekspertvurderinger opnået indikatorer på 14 rammevilkår i Danmark, og ligeså i andre lande. De omfatter 4 kulturelle vilkår: individualisme som en kulturel værdi, prestige af iværksætteren som erhvervsbækæftigelse, uddannelse og træning i entreprenørskab, befolkningens færdigheder i entreprenørskab, samt 10 institutionelle vilkår: mulighederne for entreprenørskab, finansielle ressourcer, regeringspolitik for entreprenørskab, offentlige støtteprogrammer, overførsel af teknologi til nye virksomheder, kommerciel og juridisk infrastruktur, markedets åbenhed for ny virksomhed, den teknisk-fysiske infrastruktur, ophavsrettigheder og patentsystem, samt støtteforanstaltninger til vækst-entreprenørskab.

De fleste af rammevilkårene i Danmark er blevet bedre igennem de seneste år. Nogle få af vilkårene er stagnerende. Ingen af vilkårene er forringede igennem de senere år. Alt i alt er rammen for dansk iværksætteri igennem de senere år blevet mere favorabel.

Til trods for forbedringerne, så er vilkårene i Danmark stadig omkring midten i sammenligning af de udviklede lande. De fleste rammevilkår er som de typisk er i de udviklede lande, enkelte vilkår er betydeligt bedre i Danmark (især støtten til vækstiværksætteri), og enkelte vilkår er betydeligt ringere i Danmark end typisk blandt de udviklede lande, så alt i alt er rammen i Danmark ret typisk.

Rammevilkårene i et land påvirker niveauet af iværksætteri i landet betydeligt, viser en statistisk analyse af de udviklede lande. Befolkningens færdigheder fremmes betydeligt af undervisning i iværksætteri, af prestigen af iværksætterrollen, og af den værdien af individualisme i landet. Mulighederne for iværksætteri fremmes betydeligt af de mere konkrete institutionelle rammer. Gode muligheder i landet koblet med gode færdigheder i befolkningen fremmer niveauet af iværksætteri i samfundet.

Den generelle sammenhæng mellem rammevilkår og niveauet i iværksætteri illustreres af Danmarks situation. Danmarks rammevilkår er som typisk for udviklede lande. Den generelle sammenhæng mellem vilkår og niveau, medfører at niveauet i Danmark er som typisk for udviklede lande.

### **Størrelse opnået i virksomheder i Danmark**

*Hvilken vækst er opnået for virksomheder i Danmark? Hvordan afhænger opnået størrelse af virksomhedens alder? Hvordan afhænger virksomhedsstørrelsen også af ejerlederen, specifikt af entreprenørens køn, uddannelse, og entreprenante holdninger og adfærd? (Chapter 5).*

Opnået vækst, eller størrelse af en virksomhed i Danmark, afhænger af dens alder, ældre tenderer til at være større end yngre virksomheder, om end mange forbliver ekstremt små. Virksomhedsstørrelse afhænger også af ejerlederens egenskaber, specielt af køn idet større virksomheders ejerledere særligt ofte er mandlige, og også af skoleuddannelse idet større virksomheders ejerledere særligt ofte har studenterekamen (eller HF eller tilsvarende). Virksomhedsstørrelsen afhænger indirekte af ejerlederens videregående uddannelse, idet videregående uddannelse påvirker ejerlederens netværken der virker fremmende for væksten. Analyserne viser endvidere at størrelsen også fremmes af ejerlederens entreprenante færdigheder, risikovillighed, og optimistiske syn på forretningsmuligheder, holdninger som til dels er formet af ejerlederens køn, alder og uddannelse.

### **Størrelse forventet i startvirksomheder og i eksisterende virksomheder**

*Hvad er entreprenørers forventninger til fremtidig størrelse i opstartsvirksomheder og i eksisterende virksomheder? Er deres ambitioner beskedne eller høje, måske endda højere end det er realistisk at indfri i fremtiden? (Chapter 6).*

Entreprenørernes forventninger til fremtidig størrelse er meget høje, og især starternes forventninger er ofte særdeles høje. Forventningerne tenderer til at være højere end det er realistisk at opnå.

Ydermere er forventningerne til fremtidig størrelse blandt starterne i dag endnu højere end forventningerne var blandt starterne nogle få år tidligere. Ligeledes er forventningerne til fremtidig størrelse endnu højere blandt ejerledere i dag end de var blandt ejerledere for blot få år siden.

### **Vækst forventet i startvirksomheder og i eksisterende virksomheder**

*Hvilken fremtidig tilvækst forventer entreprenørerne i deres opstartsvirksomheder og eksisterende virksomheder? Mere præcist, hvad er den forventede nettotilvækst, relativt til den nuværende størrelse? Hvordan afhænger entreprenørens forventninger til fremtidig vækst af egne karakteristika såsom køn, uddannelse, og entreprenant adfærd og holdninger? (Chapter 7).*

Starteres forventninger til fremtidig vækst er langt højere end ejerlederens forventninger til fremtidig vækst (relativt til nuværende størrelse). For begge slags entreprenører er forventningerne formet af deres egne karakteristika, både deres baggrund (køn, alder, uddannelse) og deres karakteristika dannet senere i livet (færdigheder, netværk, risikovillighed, syn på forretningsmuligheder). Forventningerne til vækst er særligt høje for de der er mænd, har færdigheder, har netværk, er risikovillige, og ser lyst på forretningsmuligheder. Disse entreprenante egenskaber formes til dels af baggrunden i køn, alder, skolegang, og videregående uddannelse som derved også indirekte påvirker forventningerne.

### **Jobskabelse forventet i Danmark**

*Hvor mange nye jobs forventes i Danmark, samlet set, når hver entreprenør har sin forventning til ændring i antal ansatte, som Summen af deres forventninger? Kan deres udtrykte forventning betragtes som en realistisk forudsigelse af arbejdsmarkedet eller kan det bedre forstås som en ambition? Hvilken kategori af entreprenører præger især deres forenede vækst-forventning, forudsigelse eller ambition – er det starterne, ejerlederne i de nye virksomheder, eller ejerlederne i de mere etablerede virksomheder? (Chapter 8).*

De enkelte entreprenørers udtrykte forventning til ændring i antal ansatte i løbet af fem år summeres op til en forenet forventning om skabelse af nye jobs i landet. Danske entreprenører forventninger summeres op til et omfang der er af en størrelsesorden som den nuværende arbejdskraft i landet, og forventningerne svarer således til en fordobling af arbejdskraften. Deres kollektive forventning er ikke en realistisk forudsigtelse, men kan bedre forstås som deres ambition. Den kategori af entreprenører som præger denne ambition – som forventer at skabe en stor del af de nye arbejdspladser – er hverken ejerlederne i de nye virksomheder eller ejerlederne i de mere etablerede virksomheder – men er starterne, især de særligt ambitiøse startere.

### **Vækst-iværksætteres finansiering**

*Er finansieringen af vækst-iværksætteri forskellig fra finansieringen af det mere almindelige iværksætteri, i beløb og i kilder? Forudsiger vækst-iværksættere at tjene investeringen hjem særlig hurtigt eller særlig langsomt? Forudsiger vækst-iværksættere at få fortjenester der er særlig små eller særlig store? (Chapter 9).*

Vækst-iværksætteri har ofte behov for særlig stor finansiering, større end mere almindelige opstarter. Ret stor finansiering kommer ofte fra vækst-iværksætterne selv. Ret stor finansiering til vækst-iværksætteri kommer ofte også fra andre, især fra banker og offentlige kilder, men sjældent fra familie. Vækst-iværksættere forudsiger ikke at tjene investeringen hjem hurtigere eller langsommere end andre iværksættere. Men vækst-iværksættere forudsiger at de vil tjene investeringen mangfoldigt tilbage, mere end almindelige iværksættere.

### **Koblingen mellem vækst-entreprenørskab og innovation**

*Følges vækst-iværksætteri og innovation ad, hånd-i-hånd, som en svag eller stærk sammenkobling inden for opstartvirksomheder og inden for eksisterende virksomheder? (Chapter 10).*

For entreprenører både i opstartfasen og i driftfasen, tenderer innovation og forventninger om

vækst til at følges ad, som en positiv kobling. De er sjældent alternativer. Sammenkoblingen mellem dem er svag inden for eksisterende virksomheder og stærkere inden for opstartsvirksomheder.

### **Koblingen mellem vækst-entreprenørskab og eksport**

*Følges eksport og vækst-iværksætteri ad, med en svag eller stærk kobling inden for opstartsvirksomheder og inden for eksisterende virksomheder? (Chapter 11).*

Både i opstartfasen og i driftfasen går eksport og vækstforventninger hånd-i-hånd. Deres sammenkobling er svag i eksisterende virksomheder og stærkere i opstartsvirksomheder.

### **Entreprenørers vækstforventninger i Danmark sammenlignet med andre lande**

*Hvad er Danmarks situation i vækst-entreprenørskab? Er danske entreprenørers vækstforventninger højere eller lavere end ambitionerne blandt entreprenører i andre lande? (Chapter 12).*

De danske starteres vækstforventninger er typiske blandt entreprenører i de udviklede lande, idet deres ambitioner ikke er særlig høje eller særlig lave, men er omkring midten af de udviklede lande. I sammenligning med de nordiske lande er danske entreprenørers vækstforventninger særlig høje.

### **Politik for vækst-iværksætteri**

*Hvilken politik vil fremme vækst-iværksætteri? (Chapter 13).*

Det synes umuligt at forudsige, med rimelig træfsikkerhed, hvilke startere vil skabe vækst. Analysen af ejerlederes opnåede vækst (i kapitel 5) finder adskillige faktorer der påvirker væksten, men deres påvirkninger er beskedne, og kan derfor ikke anvendes til rimelig forudsigtelse af hvem der vil skabe vækst. Så en pick-the-winner politik kan ikke praktiseres. Men når vi nu ved at danske iværksættere faktisk er ambitiøse, og endda mere ambitiøse end typisk i de andre nordiske lande, så vil omfanget af

vækst-iværksætteri nok øges betydeligt ved at øge interessen for iværksætteri, uden at bruge kræfter på at øge iværksætternes ambitioner. Denne erhvervspolitiske overvejelse får yderligere vægt når vi betænker at der nu er et fald i raten af folk med intention om at starte virksomhed. Stimuleres interessen for iværksætteri bredt, så vil landets omfang af vækst-iværksætteri også øges.



# Chapter 1

## Introduction: Growth-entrepreneurship

Entrepreneurship is conceptualized as the activity that comprises discovering opportunities and the exploitation of opportunities in existing and new firms. The activity is institutionalized and supported in society, with a social role for performing the activity, the vocation called the entrepreneur (Christensen 2005, Swedberg 2000). The study therefore focuses on the performers of the activity and the conditions affecting their performance.

Growth-entrepreneurship denotes the entrepreneurship that pursues expansion, as distinct from the ventures that stagnate or even contract (Autio 2005, 2007a, 2007b). Growth-entrepreneurship is currently becoming institutionalized as a distinct kind of entrepreneurship in Denmark and in some other developed countries, and this institutionalization entails crystallization of a distinct kind of entrepreneur, the growth-entrepreneur as the entrepreneur with the specialized role of pursuing expansion. The institutionalization of growth-entrepreneurship is seen in the public support tailored to promote growth-entrepreneurship, especially a new advisory-system for growth-entrepreneurship, *Væksthuse*. Likewise, the institutionalization of the role of the growth-entrepreneur is seen in the new reward for playing this role, namely a tax-benefit granted for attained expansion.

This monograph studies entrepreneurship in general and growth-entrepreneurship in particular. The questions in the following chapters are:

- *How can we investigate entrepreneurship in general and growth-entrepreneurship in particular?* (This methodological question is addressed in Chapter 2).
- *How high is the level of entrepreneurial activity in Denmark compare to other countries? Is the trend stable, or upward or downward?* (Chapter 3).
- *How are the framework conditions shaping entrepreneurship and growth in Denmark compared to other countries?* (Chapter 4).
- *What growth has been attained by firms in Denmark? That is, how big are the firms? How is the attained size of firms dependent on their age? How is the attained size dependent on the entrepreneur, specifically on the entrepreneur's gender, education, and entrepreneurial attitudes?* (Chapter 5).
- *What future size do entrepreneurs expect in their startups and firms in Denmark? Are their ambitions modest or high, perhaps even higher than can realistically be attained in the future?* (Chapter 6).
- *What future growth do entrepreneurs expect in their startups and firms in Denmark? More precisely, what is their expected net growth, relative to the present size of the firms? How is the entrepreneurs' expectation for future growth shaped by their personal characteristics such as gender, education, and entrepreneurial attitudes?* (Chapter 7).
- *What future creation of jobs do the entrepreneurs expect in Denmark? What is the sum of the expectations of the entrepreneurs in the country? Is their expressed expectation to be understood as their realistic forecast of the labor market, or is it better understood as a high ambition. Which group of entrepreneurs is mainly behind this collective growth-expectation, forecast or ambition – is it the starters, the new-business owner-managers, or the established-business owner-managers?* (Chapter 8).
- *Does funding of growth-entrepreneurship differ from funding of non-growth-entrepreneurship, in amount and in sources? Is growth-entrepreneurship predicted to yield paybacks that come especially slow or fast? Is growth-entrepreneurship predicted to yield returns that are especially meager or manifold?* (Chapter 9).

- *Does growth-entrepreneurship go hand-in-hand with innovation, as a weak or strong coupling, within startups and existing firms?* (Chapter 10).
- *Does growth-entrepreneurship go hand-in-hand with exporting, as a weak or strong coupling, within startups and existing firms?* (Chapter 11).
- *How does Denmark compare to other countries in growth-entrepreneurship? Is Denmark similar to other countries, or above or below, in expectations for growth?* (Chapter 12).
- *What policy is likely to promote growth-entrepreneurship?* (Chapter 13).
- *What conclusions are drawn concerning entrepreneurship in general and growth-entrepreneurship in particular?* (Chapter 14).

Before analyzing entrepreneurship and growth, we shall first consider how this endeavour is researched.

# Chapter 2

## Researching entrepreneurship and growth-entrepreneurship

Entrepreneurship is conceptualized as an activity that is institutionalized with a supportive framework in society, and with a social role for performing the activity, the entrepreneur. Growth-entrepreneurship, furthermore, is conceptualized as a specialized kind of entrepreneurial activity that is performed by a specialized entrepreneurial role, the growth-entrepreneur. Research therefore focuses on the performers of the activity and the framework of conditions affecting their performance.

To understand why some people, and not other people, become entrepreneurs, we compare entrepreneurs to non-entrepreneurs. To understand how some entrepreneurs, and not other entrepreneurs, become growth-entrepreneurs, we compare growth-entrepreneurs to entrepreneurs not pursuing growth, in order to see how their vocations are chosen and shaped.

To understand why Denmark has its activity of entrepreneurship and growth-entrepreneurship the way it does, we compare Denmark to other countries, that is we compare their activities and we compare their frameworks, in order to see how a nation's activity is shaped by its framework conditions.

### **Our GEM survey of the population of adults**

Individuals are compared to one another, and countries are compared to one another. This requires comparable data on individuals and comparable data on countries and their framework of conditions. Such data are gathered in the research program Global Entrepreneurship Monitor conducted within the framework of the Global Entrepreneurship Research Association, that maintains an informative homepage [www.gemconsortium.org](http://www.gemconsortium.org) (GERA 2005; Reynolds et al., 2005).

The performers are identified and investigated in a survey of the adult population. In Denmark we have in each of the 9 years 1999 to 2007 conducted a national probability sample survey of the adult population, with a new sample each year, pooling them for a total of 25.113 respondents interviewed on the telephone. Weighting the respondents enhances the validity of these surveys (weights are used in the analyses in Chapter 2). The questionnaire asks the adults about their involvement in entrepreneurship, so as to identify entrepreneurs (used in Chapter 3), and the identified entrepreneurs are asked about their venture, specifically about expected and attained growth (used in Chapters 5 to 13).

Similar surveys have been performed around the world, asking the same questions everywhere, and pooled into a total of more than 850.000 respondents interviewed in 1999 to 2007 in 60 countries. These include 37 developed countries or societies: Australia, Austria, Belgium, Canada, Croatia, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, Ireland, Israel, Italy, Japan, Latvia, the Netherlands, New Zealand, Norway, Poland, Portugal, Puerto Rico, Romania, Russia, South Korea, Serbia (including Montenegro), Singapore, Slovenia, Spain, Sweden, Switzerland, Taiwan, the United Kingdom and the United States. The survey has also been done in 23 developing countries or societies: Argentina, Brazil, Chile, China, Colombia, Dominican Republic, Ecuador, India, Indonesia, Jamaica, Jordan, Kazakhstan, Mexico, Myanmar, Peru, Philippines, South Africa, Thailand, Turkey, Uganda, United Arab

Emirates, Uruguay and Venezuela. Results are robust with respect to a slightly different classification of developed versus developing countries.

### **Our GEM expert panel assessment of framework conditions**

The framework of conditions affecting performance of the activity are measured annually, in 2007 and preceding years, in Denmark and the other countries in GEM. The conditions in a country are rated by a panel of experts usually comprising at least 36 experts in the country. The panel rates several conditions, so each condition is scored. Conditions have been assessed in Denmark in 2007 and each year back to 1999, and likewise in the other countries participating in GEM. Thereby we create a time series for each condition in Denmark so as to track changes (Chapter 3), to understand dynamics in the country, and to offer leading indicators for policy-making. We also compare conditions in Denmark to conditions in other countries in order to estimate effects of conditions upon entrepreneurship (used in Chapter 3), and also to offer comparative up-to-date leading indicators for policy-making.

### **Data from registries**

Entrepreneurship can also be investigated through data from registries. Registries are compiled by Statistics Denmark on persons, firms and people's work in firms (Danmarks Statistik 2005). The registry data on persons cover the lives of people. The Danish registries of individuals are very rich and unique, better than registries in most other countries, so they enable original and detailed analyses of, for example, the processes leading into the entrepreneurial vocation, out of it, and switches (Erhvervs- og Boligstyrelsen, 2002). The national registries of individuals are rather idiosyncratic to each country, and have apparently not been used for comparisons among nations.

The registry data on firms cover the evolution of firms. The Danish registries of firms are also better than registries in most other countries, so they allow analyses of the growth of firms in

Denmark (Erhvervs- og Byggestyrelsen, 2007). The national registries of firms are rather idiosyncratic to each country, but are nevertheless used for comparisons among countries (Eurostat 2005; Hoffmann et al, 2005). The differences among countries in registration reduces validity of the comparisons.

Our adult population survey has some distinct advantages over registry data. First, our survey is up-to-date and provides up-to-date leading indicators on entrepreneurship. Second, our survey goes beyond the behavior and investigates, for example, people's intentions to become entrepreneurs, their motivations, and their expectations. Third, our survey is conducted around the world, in the same manner everywhere, so as to enable valid comparisons.

# Chapter 3

## Entrepreneurial activity in Denmark: Trends and comparisons to other countries

Entrepreneurial activity is not a single circumscribed activity but is often seen as an activity with a lifecycle that unfolds in phases as rather distinct activities (Schøtt 2006a:16-17, 56-63; 2007b:22-24, 29-31). We distinguish six specialized activities:

- prospecting or intending to start a new business in the foreseeable future.
- starting a business, actively, such as by looking at facilities and financing.
- new business operation, paying salary or compensation, but not for long.
- established business operation, paying salary or compensation for long.
- discontinuing or closing the business.
- investing in a business.

The last activity, though, is not part of the lifecycle of entrepreneurship.

These activities are performed by the entrepreneur. The six specialized activities entails a typology of six specialized entrepreneurs:

- prospective starter
- starter
- owner-manager of a new business
- owner-manager of an established business
- ex-owner-manager
- investor

These specialized roles tend to be sequential, but may also overlap.

### Identifying entrepreneurs

To investigate entrepreneurial activity, we identify the entrepreneurs in the adult population by our GEM-survey (Chapter 2; Reynolds et al., 2005; Schøtt 2006a:20-23; Schøtt 2007b:24-28):

The prospective starters are those who answer Yes to the following question,

*Are you, alone or with others, expecting to start a new business, including any type of self-employment, within the next three years?*

The starters are those answering Yes to either of the following two questions,

*Are you, alone or with others, currently trying to start a new business, including any self-employment or selling any goods or services to others?*

*Are you, alone or with others, currently trying to start a new business or a new venture for your employer – an effort that is part of your normal work?*

A starter, furthermore, is also required to report to be actively starting and to be an owner of the startup.

The owner-managers are those answering Yes to the following question,

*Are you, alone or with others, currently the owner of a company you help manage, self-employed, or selling any goods or services to others?*

Owner-managers are also asked when salary or compensation was first paid to owners so as to distinguish between new and established businesses. The cutoff is set at 3½ years.

The ex-owner-managers are those answering Yes to the following question,

*Have you, in the past twelve months, shut down, discontinued or quit a business you owned and managed, any form of self-employed, or selling goods or services to anyone (not counting a business that was sold)?*

The investors are those answering Yes to the following question,

*Have you, in the past three years, personally pro-*

vided funds for a new business started by someone else (excluding any purchases of stocks or mutual funds)?

### Trends in entrepreneurial activity in Denmark

The level of each entrepreneurial activity in Denmark in a year is then estimated by the prevalence or rate of the so-identified entrepreneurs in our surveyed sample of the adult population, Table 3.1 (observations are weighted, thereby enhancing validity). An entrepreneur may of course be more than one specialized kind of entrepreneur, and thus be included more than once in the counts, so the total rate of entrepreneurship of all kinds is somewhat less than theSum of the six rates of specialized kinds of entrepreneurship.

The rate of prospective starters has apparently been declining in recent years, which is quite surprising considering the considerable efforts to promote interest in entrepreneurship.

The rate of actively trying to start has apparently been rather stable in recent years; that it has not increased is also surprising considering the support.

The rate of operating new businesses has apparently increased in the most recent years, which is consistent with our earlier findings, also our counts from registration of new businesses (Schøtt, 2006:62).

The rate of operating established businesses has also been increasing in recent years.

The rate of discontinuing operation of businesses has apparently declined in recent years, and this is quite consistent with the increase in the rate of operating established businesses, and may be a cause of the increase.

The rate of investing has apparently declined in recent years which is surprising, given the increase in wealth in the country.

An overall measure of entrepreneurial activity in the early phase is the so-called TEA-rate (Total Entrepreneurial Activity, albeit this is less than the totality) which is the rate of starters and new-business owner-managers (and thus a bit less than theSum of their two rates). The TEA-rate shows that entrepreneurship in the early phase has increased slightly in recent years.

Thus the rates of new and established businesses both seem to be increasing. But these are past events, even new businesses are the results of efforts in the past. The present is better indicated by the rate of those trying to start, and this rate is stagnant. The future is probably better indicated by the rate of prospective starting, and this rate is declining. These indicators of the present and future are leading indicators, they are ahead of the actual event of operating new businesses, and these leading indicators entail more gloomy predictions.

**Table 3.1**  
Rate of adults' participation in entrepreneurial activities. Denmark. Annually 2002-2007

	2002	2003	2004	2005	2006	2007
Prospective starters	9,0 %	7,3 %	9,9 %	9,0 %	8,2 %	7,7 %
Starters	3,6 %	3,0 %	2,5 %	2,4 %	2,9 %	2,3 %
TEA (Starter or New-bus.own.-man.)	6,5 %	5,9 %	5,3 %	4,8 %	5,3 %	5,4 %
New-business owning-managing	3,1 %	3,3 %	2,8 %	2,4 %	2,8 %	3,1 %
Established-business owner-manager	5,5 %	5,7 %	5,1 %	4,4 %	5,3 %	6,0 %
Discontinued owner-manager	1,8 %	1,5 %	2,0 %	1,8 %	1,8 %	0,9 %
Investor	3,4 %	2,5 %	2,9 %	2,4 %	2,5 %	2,1 %

### Level of entrepreneurial activity in Denmark compared to other countries

Where do the changes bring Denmark in comparison to other developed countries today, in 2007? The commonly used measure for up-to-date comparisons is the TEA-rate, Table 3.2. Entrepreneurial activity in Denmark now stands at a level that is roughly half of the level in the USA and Iceland and roughly double of the level in Russia and Austria. Denmark is slightly below the middle among the developed countries, 46% of the others are below and 54% of the others are above Denmark. Denmark has remained around the middle among the developed countries for quite many years (Hancock et al, 2001, 2002, 2003, 2004; Schøtt, 2006a, 2007b; Warhuus et al 2000).

**Table 3.2**  
Early-phase entrepreneurial activity-rate, as percent of adults (TEA).  
The three countries with highest TEA, and the three countries with lowest TEA, and Denmark with its percentile rank. 2007.

Iceland	12,5 %	
Hong Kong	10,0 %	
USA	9,6 %	
...		
Denmark	5,4 %	46 percentile rank
...		
Puerto Rico	3,1 %	
Russia	2,7 %	
Austria	2,4 %	

The gloomy forecast appears at first sight to contradict the rosier picture painted by the recent official report *Iværksætterindeks 2007* (Erhvervs- og Byggestyrelsen, 2007). However, the official report is based mainly on trends some years ago in numbers of registrations of businesses, and is thus most similar to our rates of new-business owner-managers and both their counts of registrations and our survey counting new-business owner-managers are showing an

increase in recent years. The old trends shown in the official report thus reconfirm the trends that have been revealed by our GEM-surveys in recent years (Schøtt, 2006a; 2007b). GEM provides more up-to-date indicators and even leading indicators that can better reveal current changes, and these look gloomier.

In conclusion, in recent years there has been a considerable increase in new businesses accompanied by a decline in discontinuations, resulting in an increase in the stock of existing businesses. However, during the same recent years, the attempted startups have been stagnant, and intentions among people to start new businesses have been declining.

The level of early-phase entrepreneurial activity, as a rate or prevalence in the adult population in Denmark, is today about the typical for developed countries. Indeed, for several years, Denmark has been in the middle among the developed countries.



# Chapter 4

## Framework conditions shaping entrepreneurship in Denmark and other countries

Entrepreneurship does not exist in a vacuum. Entrepreneurship is an activity that is organized in society and is shaped by conditions prevailing in the society. Entrepreneurial activity in society flourishes under some conditions and vanishes under other conditions (Morrison 2000; Shane 1992, 1993). The conditions affecting entrepreneurship are denoted the framework conditions in the society. The framework conditions are subject to intervention by the state, indeed, they have in recent decades become a focus for policy-making (Schøtt et al 2007). Some framework conditions are in the culture of society, notably in its values and knowledge. Other framework conditions are in the institutions of society, notably in its supportive arrangements, mobilization and allocation of resources, and regulation of the market. Some framework conditions may affect some kinds of entrepreneurship more than other kinds. For example, some conditions in society may be designed, by policy-making, specifically to promote growth-entrepreneurship (Chapter 14).

The framework conditions in society are numerous and only partly discerned, and their effects are even less determined. Here we examine 14 framework conditions in society, namely first 10 institutional conditions and then 4 cultural conditions:

- Support for growth-entrepreneurship
- Financial resources for entrepreneurship
- Government policies for entrepreneurship
- Public programs for entrepreneurship
- Technology transfer to entrepreneurship
- Commercial and legal infrastructure
- Internal market openness to new firms
- Physical infrastructure for new firms

- Intellectual property rights
- Opportunities for business
- Cultural value of individualism
- Cultural esteem of the vocation of entrepreneur
- Entrepreneurial education and training through schooling
- Entrepreneurial skills of the population

These framework conditions are measured in each country participating in GEM. A national panel of experts on entrepreneurship in the country is surveyed and assesses each condition on a scale from a low of 1 to a high of 5 (Chapter 2; Schøtt, 2006a:20-21; 2007b:25). Annual assessments of conditions in Denmark and other countries enable us to track changes over time in Denmark and to compare Denmark to other countries. The up-to-date measures of framework conditions, in so far as they affect future entrepreneurship, are actually leading indicators of entrepreneurial activity.

In the following we shall examine each condition, track its changes in Denmark and compare Denmark to other developed countries, and then estimate effects of the conditions upon entrepreneurial activity.

### **Institutional support for growth-entrepreneurship**

The institutional support for growth-entrepreneurship in Denmark is assessed by asking experts to ascertain truthfulness of each of the following statements,

- *In Denmark, there are many support initiatives that are specially tailored for high-growth entrepreneurial activity.*

- In Denmark, policymakers are aware of the importance of high-growth entrepreneurial activity.
- In Denmark, people working in entrepreneurship-support-initiatives have sufficient skills and competence to support high-growth firms.
- In Denmark, potential for rapid growth is often used as a selection criterion when choosing recipients of entrepreneurship support.
- In Denmark, supporting rapid firm-growth is a high priority in entrepreneurship policy.

The expert ascertains truthfulness of each statement in terms of "Completely false", "Somewhat false", "Neither true nor false", "Somewhat true" and "Completely true". The assessment is quantified on a scale from 1 to 5, averaged across the experts and averaged across the five statements for a measure of the support for growth-entrepreneurship in the year. With measurement taken in 2007 and a few preceding years we can track recent changes, Table 4.1. Support for growth-entrepreneurship in Denmark has tended to increase in recent years. This assessment is consistent with the changes in entrepreneurship policy and implementations (Erhvervs- og Byggestyrelsen, 2007).

**Table 4.1**  
Support for growth-entrepreneurship in Denmark. Annually 2005 to 2007.

2005	2006	2007
3,4	3,3	3,7

Where does this bring Denmark compared to other countries? Support for growth-entrepreneurship is also assessed in the other countries participating in GEM by the same questions to a national panel of experts there. Among the surveyed developed countries, only Ireland and USA seem more supportive of growth-entrepreneurship, so Denmark is near the top, with 90% of the other countries below.

Having examined the institutional support for growth-entrepreneurship, we turn to conditions

for more general entrepreneurship, first several institutional conditions and then cultural conditions.

**Table 4.2**  
Support for growth-entrepreneurship. The three countries with most support, the three countries with least support, and Denmark with its percentile rank. 2007.

Ireland	4,0	
USA	3,7	
Denmark	3,7	90 percentile rank
...		
Romania	2,8	
Croatia	2,6	
Serbia	2,6	

### Financial resources for entrepreneurship

Financial resources refer to the availability of funding for entrepreneurship (Schøtt, 2006:76, 2007:39). Each year, in Denmark, the financial resources are assessed by a panel of experts, that rates the availability on a scale from 1 to 5 (Chapter 2). The questions are quoted in our earlier studies. The availability of funding in Denmark has changed over the years, Table 4.3. Resources have been increasing.

**Table 4.3**  
Financial resources in Denmark. Annually from 2002 to 2007.

2002	2003	2004	2005	2006	2007
3,2	3,0	2,5	2,6	2,7	2,9

Where does this increase in availability of resources for entrepreneurship bring Denmark compared to other countries. Availability is also measured in the other countries participating in GEM, Table 4.4. Among the developed countries, Israel, USA and Belgium have greatest availability, and Italy, Greece and Spain have the lowest availability. Denmark is in the middle.

**Table 4.4**  
**Financial resources.**  
**The three countries with most financial resources, the three countries with least financial resources, and Denmark with its percentile rank. 2007.**

Israel	3,9	
USA	3,8	
Belgium	3,7	
...		
Denmark	2,9	55 percentile rank
...		
Spain	2,6	
Greece	2,6	
Italy	2,4	

In short, availability of resources have been increasing in recent years, but Denmark remains in the middle among the developed countries.

Availability of resources is a condition that is rather strongly related to the level of entrepreneurship, as estimated in a statistical comparison among many developed countries (Schøtt, 2006).

### Government policies toward entrepreneurship

Government policies toward entrepreneurship refer to the policies that the national government and more local public authorities decide and implement (Schøtt, 2006a:78, 2007b:40). Government policies in Denmark are measured annually by a panel of experts that rates the policies on a scale from 1 to 5. Government policies in Denmark have been changing, Table 4.5. Over the years, policies have become more favorable.

**Table 4.5**  
**Government policies in Denmark.**  
**Annually from 2002 to 2007.**

2002	2003	2004	2005	2006	2007
2,6	2,7	2,8	3,1	3,1	3,2

Where does this increase in favorable policies bring Denmark compared to other countries?

Government policies have also been measured in the other countries participating in GEM, Table 4.6. Among the developed countries, government policies seem a little more favorable in Iceland and Finland, but Denmark is near the top, with 90% of the other countries having less favorable policies.

**Table 4.6**  
**Government policies.**  
**The three countries with most favorable government policies, the three countries with least supportive policies, and Denmark with its percentile rank. 2007.**

Iceland	3,4	
Finland	3,4	
Denmark	3,2	90 percentile rank
...		
Greece	2,1	
Croatia	2,0	
Italy	1,9	

In short, government policies in Denmark have become more supportive, and Denmark is now among the countries with most favorable policies.

### Public programs for entrepreneurship

Public program refer to the programs that are publicly available, and mostly supported by funds from the public, channelled through national and more local administrations (Schøtt, 2006a:80, 2007b:41). The adequacy of the public programs in Denmark are assessed annually by a panel of experts rating their adequacy on a scale from 1 to 5, Table 4.7. Adequacy of the public programs shows no clear trend, but may perhaps have increased a bit most recently.

**Table 4.7**  
**Public programs in Denmark.**  
**Annually from 2002 to 2007.**

2002	2003	2004	2005	2006	2007
3,0	2,9	2,9	3,1	3,0	3,2

Where is Denmark now positioned compared to other countries in terms of supportive public programs? Public programs are likewise assessed in other countries, Table 4.8. Among the developed countries, public programs are more supportive in some countries, notably Austria, but Denmark has quite supportive programs, only 20% of the other countries have more supportive programs, whereas 80% of the others have less supportive programs. That Denmark has fairly supportive public programs is hardly surprising as Denmark is still a welfare society, with welfare extending to public support for private business.

**Table 4.8**  
Public programs.  
The three countries with most supportive public programs, the three countries with least, and Denmark with its percentile rank. 2007.

Austria	3,5	
Switzerland	3,3	
Finland	3,3	
...		
Denmark	3,2	80 percentile rank
...		
Romania	2,4	
Russia	2,3	
Greece	2,2	

In short, the supportiveness of public programs in Denmark has perhaps increased slightly most recently, and Denmark now ranks fairly high compared to other developed countries.

### Technology transfer to entrepreneurship

Technology transfer denotes the movement of technological knowledge from public research institutions to entrepreneurship (Schøtt, 2006a:82, 2007b:42). The extent of technology transfer in Denmark is assessed annually by a panel of experts rating the extent on a scale from 1 to 5. Technology transfer in Denmark has been changing over the years, Table 4.9. Technology transfer seems to have increased over the years.

**Table 4.9**  
Technology transfer in Denmark.  
Annually from 2002 to 2007.

2002	2003	2004	2005	2006	2007
2,3	2,5	2,4	2,5	2,6	2,6

Where does the increase bring Denmark, in comparison to other countries. Technology is measured likewise in many other countries, Table 4.10. Among the developed countries, technology transfer is especially extensive in Switzerland, Belgium and the USA. Denmark is in the middle, with half of the other countries above and the other half of the countries below Denmark in technology transfer.

**Table 4.10**  
Technology transfer.  
The three countries with most technology transfer, the three countries with least, and Denmark with its percentile rank. 2007.

Switzerland	3,4	
Belgium	3,2	
USA	3,1	
...		
Denmark	2,6	50 percentile rank
...		
Croatia	2,2	
Romania	2,2	
Russia	2,1	

### Commercial and legal infrastructure for entrepreneurship

Commercial and legal infrastructure refers to the availability and affordability of high quality services of commercial, legal and professional kinds (Schøtt, 2006a:84, 2007b:43). The infrastructure in Denmark is measured annually by a panel of experts on a scale from 1 to 5. The infrastructure in Denmark has changed over the years, Table 4.11. The availability has tended to increase over the years.

**Table 4.11**  
**Commercial and legal infrastructure in Denmark. Annually from 2002 to 2007.**

2002	2003	2004	2005	2006	2007
3,4	3,4	3,4	3,5	3,7	3,5

How does Denmark now compare to other countries? The infrastructure is also measured in the other countries participating in GEM. The availability is higher in several countries, notably in Israel, USA and Norway. Among the developed countries, Denmark is a little above the middle, with 40% of the others above and 60% of the others below.

**Table 4.12**  
**Commercial and legal infrastructure. The three countries with most commercial and legal infrastructure, the three countries with least, and Denmark with its percentile rank. 2007.**

Israel	3,8	
USA	3,8	
Norway	3,8	
...		
Denmark	3,5	60 percentile rank
...		
Slovenia	3,1	
Romania	3,0	
Croatia	2,7	

In short, although availability of commercial and legal services has increased in Denmark over the years, Denmark is only a little above the middle among the developed countries.

### Internal market openness to entry of new firms

Openness of the internal market refers to the ease of entry into the market for new firms (Schøtt, 2006a:86, 2007b:44). The openness of the internal market in Denmark is assessed annually by a panel of experts, on a scale from 1 to 5. The openness in Denmark has changed

over the years, Table 4.13. The internal market has tended to become more open over the years.

**Table 4.13**  
**Internal market openness in Denmark. Annually from 2002 to 2007.**

2002	2003	2004	2005	2006	2007
2,6	2,6	2,5	2,8	2,9	2,7

How open is the internal market in Denmark in comparison to other countries? The openness is assessed in the other countries participating in GEM, Table 4.14. Many countries are far more open, notably Iceland and Serbia (including Montenegro). Among the developed countries, Denmark is far below the middle, with 70% of the others more open, and 30% of the others less open.

**Table 4.14**  
**Internal market openness. The three countries with widest internal market openness, the three countries with narrowest, and Denmark with its percentile rank. 2007.**

Serbia	3,3	
Iceland	3,3	
Hong Kong	3,1	
...		
Denmark	2,7	30 percentile rank
...		
Israel	2,5	
Finland	2,5	
Spain	2,3	

In short, although the internal market in Denmark has tended to become a little more open over the years, it is much below the middle compared to other developed countries.

**Physical infrastructure for entrepreneurship**  
 Physical infrastructure encompasses facilities for

transportation and communication, their availability and affordability and speed of obtaining them (Schøtt, 2006a:88, 2007b:45). Physical infrastructure in Denmark is assessed annually by a panel of experts. The physical infrastructure in Denmark has changed over the years, Table 4.15. The physical infrastructure has tended to improve over the years.

**Table 4.15**  
Physical infrastructure in Denmark.  
Annually from 2002 to 2007.

2002	2003	2004	2005	2006	2007
3,9	4,1	4,0	4,2	4,4	4,3

How is the physical infrastructure in Denmark compared to other countries? The physical infrastructure is assessed likewise in the other countries participating in GEM, Table 4.16. The physical infrastructure is better in some societies, notably Hong Kong, Switzerland and the USA. Among the developed countries, Denmark is much above the middle, with 20% of the others above and 80% of the others below.

**Table 4.16**  
Physical infrastructure.  
The three countries with most physical infrastructure, the three countries with least, and Denmark with its percentile rank. 2007.

Hong Kong	4,6	
Switzerland	4,5	
USA	4,4	
...		
Denmark	4,3	80 percentile rank
...		
Italy	3,0	
Russia	3,0	
Puerto Rico	2,9	

In short, the physical infrastructure in Denmark has tended to improve over the years, and Den-

mark is now much above the middle among the developed countries.

### Intellectual property rights

Intellectual property rights refer to the establishment of private ownership of knowledge (Schøtt, 2006a:90, 2007b:46). This property right in Denmark is assessed annually by a panel of experts, using a scale from 1 to 5. The rights in Denmark have been changing over the years, Table 4.17. The rights have been expanding considerably over the years.

**Table 4.17**  
Intellectual property rights in Denmark.  
Annually from 2002 to 2007.

2002	2003	2004	2005	2006	2007
3,3	3,2	3,5	3,7	3,6	3,9

Where does this expansion bring Denmark in comparison to other countries. Rights are assessed likewise in the other countries participating in GEM. Rights seem more extensive in Switzerland and Finland, Table 4.18. Denmark is among the developed countries with most extensive rights, as 90% of the other countries have less comprehensive rights.

**Table 4.18**  
Intellectual property rights.  
The three countries with most protective intellectual property rights, the three countries with least, and Denmark with its percentile rank. 2007.

Switzerland	4,4	
Finland	4,2	
Denmark	3,9	90 percentile rank
...		
Greece	2,5	
Serbia	2,3	
Russia	2,2	

In short, the intellectual property rights in Denmark have expanded, and Denmark is now

among the developed countries with the most extensive rights.

### Opportunities for entrepreneurship

Opportunities refer to the opportunities that people in the society have for exploiting business ideas by starting, running and expanding businesses (Schøtt, 2006a:74, 2007b:38). Opportunities in Denmark are assessed annually by a panel of experts, on a scale from 1 to 5. Opportunities have been changing, Table 4.19. Opportunities in Denmark have been enlarging over the years.

**Table 4.19**  
**Opportunities in Denmark.**  
**Annually from 2002 to 2007.**

2002	2003	2004	2005	2006	2007
3,3	3,3	3,3	3,5	3,6	3,6

Where does this enlarging of opportunities bring Denmark now, in comparison to other countries? Opportunities are assessed in the other countries participating in GEM. Opportunities are greater in several countries, notably USA, Iceland and Switzerland, Table 4.20. Among the developed countries, Denmark is far above the middle, with 20% of the others above and 80% of the others below.

**Table 4.20**  
**Opportunities.**  
**The three countries with greatest opportunities, the three countries with least, and Denmark with its percentile rank. 2007.**

USA	4,0	
Iceland	3,9	
Switzerland	3,7	
Denmark	3,6	80 percentile rank
...		
Greece	3,0	
Spain	3,0	
Italy	2,8	

In short, opportunities in Denmark have enlarging over the years and Denmark is now far above typical, above the middle, among the developed countries in its opportunities for starting, running and expanding businesses.

### Effects upon opportunities from institutional conditions

Opportunities for exploiting business ideas is a condition for entrepreneurship, but it is not a institutional condition like the eight examined earlier - - financial resources, government policies, public programs, technology transfer, commercial and legal infrastructure, internal market openness, physical infrastructure, and intellectual property rights. Opportunities should rather be considered as the condition emerging as a combination of the eight more basic institutional conditions.

Indeed, opportunities is positively correlated with each of these eight basic institutional conditions, Table 4.21 (based on 37 developed countries; each correlation is statistically highly significant).

A positive correlation of opportunities with an institutional condition means that countries with a favorable institutional condition tend to have great opportunities (and countries with an unfavorable condition tend to have few opportunities). Thus, specifically, countries with ample financial resources tend to have great opportunities (and those with poor financial resources tend to have few opportunities). Countries with supportive policies typically have great opportunities (and those with unsupportive or policies tend to have few opportunities).

The multiple correlation is the correlation of opportunities with an optimal combination of institutional conditions. Countries with a combination of several favorable institutional condition tend to have great opportunities, and this tendency is quite strong (and those with a combination of several unfavorable institutional conditions tend to have few opportunities).

**Table 4.21**  
Correlation of opportunities with each institutional condition.

Financial resources	0,6
Government policies	0,6
Public programs	0,5
Technology transfer	0,5
Commercial and legal infrastructure	0,6
Internal market openness	0,4
Physical infrastructure	0,6
Intellectual property rights	0,6
Multiple correlation with all eight	0,8

In short, opportunities, as a condition, is positively correlated with each of the eight basic institutional conditions, and is highly correlated with a combination of basic institutional conditions (the multiple correlation is much higher than any of the eight correlations).

Later, after examining cultural conditions, we shall ascertain how the basic institutions combine to create opportunities that, together with cultural conditions, shape entrepreneurship.

### Cultural value of individualism

Values refer to what is appreciated in society, what is considered good (Schøtt, 2006a:64, 2007b:33). Modernity values the individual as an actor that is not only capable of taking action, and acting alone, by own effort, but also taking responsibility for acting alone and finding ways to act and to gain by acting (Weber, 1904). Modernity thus has a value that we briefly can call individualism, in contrast to collectivism, valuing the collectivity and the collective good (Mueller et al 2000; Nakata et al 1996; Thomas et al 2000; Tiessen 1997). Denmark is in many ways a highly modern society but is actually also rather collectively oriented.

The value attached to individualism in Denmark is assessed annually by a panel of experts, using a scale from 1 to 5. The value attached to individualism has changed, Table 4.22. Individualism has become more highly valued over the years.

**Table 4.22**  
Individualism in Denmark.  
Annually from 2002 to 2007.

2002	2003	2004	2005	2006	2007
2,0	2,4	2,4	3,1	2,6	2,9

How does the value attached to individualism in Denmark compare to its value in other countries. Individualism is assessed likewise in other countries. Several societies are highly individualistic, notably Israel, Iceland and Hong Kong, Table 4.23. Among the developed countries, Denmark is rather individualistic, 35% of the others are more and 65% of the others are less individualistic.

**Table 4.23**  
Cultural values.  
The three countries with most favorable values, the three countries with least, and Denmark with its percentile rank. 2007.

Israel	4,2	
Iceland	4,0	
Hong Kong	3,9	
...		
Denmark	2,9	65 percentile rank
...		
Croatia	2,4	
Belgium	2,4	
Slovenia	2,3	

In short, there has been an increase in the cultural value attached to individualism in Denmark over the years, and Denmark is now more individualistic than typical among the developed countries.

### Cultural esteem of the entrepreneurial vocation

Esteem refers to the cultural prestige of the vocation or role of the entrepreneur among the vocations in society, as this prestige motivates people to pursue this vocation rather than other occu-

pations (Schøtt, 2006:66, 2007:34). Esteem of the entrepreneurial vocation in Denmark is assessed annually by a panel of experts, on a scale from 1 to 5. The esteem has been changing, Table 4.24. The esteem has increased considerably over the years, and also in recent years.

**Table 4.24**  
Esteem in Denmark.  
Annually from 2002 to 2007.

2002	2003	2004	2005	2006	2007
2,9	2,9	3,1	3,2	3,4	3,5

Where does this increased esteem bring Denmark now, in comparison to other countries? Esteem is likewise assessed in the other countries participating in GEM. Esteem of the entrepreneurial vocation is far higher in many other societies, notably in Israel, USA and Hong Kong, Table 4.25. Among the developed countries, Denmark is in the middle, half of the others are above and half of the others are below.

**Table 4.25**  
Esteem accorded the entrepreneurial vocation.  
The three countries with highest esteem, the three countries with lowest, and Denmark with its percentile rank. 2007.

Israel	4,5	
USA	4,1	
Hong Kong	4,1	
...		
Denmark	3,5	50 percentile rank
...		
Slovenia	3,0	
Croatia	2,9	
Belgium	2,9	

In short, although the esteem of the entrepreneurial vocation has been increasing much in Denmark, Denmark remains typical among the developed countries.

## Education and training for entrepreneurship

Education and training here refers to the formal instruction, all the way up through higher education, that provides knowledge and skills for performing the entrepreneurial role (Schøtt, 2006:68, 2007:35). This kind of education in Denmark is assessed annually by a panel of experts, on a scale from 1 to 5. The extent of entrepreneurial education has changed, Table 4.26. The conveyance of entrepreneurial knowledge and skills has been increasing in recent years (for specific educational initiatives, see Erhvervs og Byggestyrelsen 2007).

**Table 4.26**  
Education in Denmark.  
Annually from 2002 to 2007.

2002	2003	2004	2005	2006	2007
2,3	2,2	2,3	2,3	2,4	2,5

Where does this increase in entrepreneurial education bring Denmark to today, in comparison to other countries. The entrepreneurial content in education is likewise assessed in the other countries participating in GEM. Entrepreneurial education is more extensive in several countries, notably the USA, Ireland and Norway, Table 4.27. Among the developed countries, Denmark is far below the middle, 75% of the others are above and only 25% of the others are below.

**Table 4.27**  
Education.  
The three countries with best education, the three countries with least, and Denmark with its percentile rank. 2007.

USA	2,9	
Ireland	2,9	
Norway	2,8	
...		
Denmark	2,5	25 percentile rank
...		
Spain	2,3	
Puerto Rico	2,3	
Greece	2,1	

In short, although the entrepreneurial content in education in Denmark has been expanding, it is still far less than typical for the developed countries.

### Skills for the entrepreneurial vocation

Skills refers to the skills of the entrepreneurial vocation, that prevail in the population, and encompass techniques for starting and organizing a firm, understanding markets and managing growth (Schøtt, 2006a:70, 2007b:36). The skills of the population in Denmark is assessed annually by a panel of experts, on a scale from 1 to 5. The skills have changed, Table 4.28. The skills have increased much over the years.

**Table 4.28**  
Skills in Denmark.  
Annually from 2002 to 2007.

2002	2003	2004	2005	2006	2007
2,0	2,2	2,3	2,6	2,6	2,8

Where does this increase in skills bring Denmark now, in comparison to other countries? Skills are likewise assessed in other countries. Skills are more extensive in many societies, notably in Iceland, Hong Kong and Israel, Table 4.29. Among the developed countries, Denmark is a little above the middle, with 40% of the others above and 60% of the others below.

**Table 4.29**  
Skills.  
The three countries with most skills, the three countries with least, and Denmark with its percentile rank. 2007.

Iceland	3,6	
Hong Kong	3,5	
Israel	3,2	
...		
Denmark	2,8	60 percentile rank
...		
Puerto Rico	2,4	
Austria	2,3	
Croatia	2,3	

In short, although entrepreneurial skills have increased in the population in Denmark, they are only a little above the typical for the developed countries.

### Effects of cultural values and opportunities upon entrepreneurial activity

The cultural and institutional conditions are a framework for entrepreneurship. A favorable framework enhances entrepreneurship whereas an unfavorable framework hampers performance. The framework is favorable in some countries and less favorable in other countries, and this shapes different levels of entrepreneurial activity.

Is entrepreneurial activity in the various countries coupled with its framework conditions? Whether entrepreneurial activity goes hand-in-hand with a framework condition, in the various countries, is ascertained by the correlation between the activity and the condition, computed across the countries. Entrepreneurial activity is measured by the TEA-rate (Chapter 3), and each of 14 framework conditions is measured in this chapter. All 14 correlation coefficients between entrepreneurship and the 14 framework-conditions are positive (each variable is averaged across years, and the correlation is then computed across the 37 developed countries).

But the framework conditions are related to each other. The institutional conditions are related in the way that opportunities can be considered a consequence emerging as a combination of the institutional conditions, not as a straightforward sum of these conditions but in the way that each condition has a positive effect on opportunities. The four cultural conditions – individualism, esteem, education, skills – are also related as causes and effects. The cultural value attached to individualism affects the esteem of the entrepreneurial vocation. Education and training for the entrepreneurial vocation is affected by the esteem of the vocation. In turn the education affects the skillfulness of the population. This sequence of effects among cultural conditions is then thought to promote entrepreneurship.

We can actually estimate these effects by analyzing the data on the various countries, Figure 4.1 (based on the 37 developed countries). Effects upon opportunities from institutional conditions are estimated by a multiple linear regression (the effect of each condition is hard to disentangle from effects of the other conditions, so not all effects can be seen, so the analysis ignores some conditions where effects cannot be seen [a stepwise backward elimination], and we end up regarding opportunities as largely a combination of five institutional conditions; these five conditions account for more than half of the variance in opportunities). The effect upon esteem from individualism is estimated by a regression (and this effect is estimated as huge, the standardized regression coefficient is 0,8). The direct effects upon education from esteem and individualism is estimated by a regression (individualism has a much larger effect than esteem, as gauged by their standardized regression coefficients). The direct effects upon skills from education, individualism and esteem are estimated by a regression (esteem has no significant effect and individualism has a much stronger direct effect than education). The direct effects upon entrepreneurial activity from opportunities and the four cultural conditions are estimated by a regression (direct effects from individualism, esteem and education are not significantly seen, but both opportunities and skills have strong effects upon entrepreneurship, opportunities stronger than skills, and they account for a third of the variance in entrepreneurship). These effects are shown in Figure 4.1. Each arrow represents an effect as just described. All these effects are positive and thickness of the arrow symbolizes the strength of the effect (the standardized regression coefficients range from about 0,1 to about 0,8).

Entrepreneurial activity in a country is promoted by the cultural and institutional conditions in the country as shown in Figure 4.1. Each of the five institutional conditions promotes opportunities that in turn promotes entrepreneurship. Thereby each institutional condition indirectly (namely by creating opportunities) promotes entrepreneurship.

Cultural conditions promote entrepreneurship through several sequences of positive effects. The cultural value attached to individualism directly promotes all the other three cultural conditions: esteem of the entrepreneurial vocation, the education in entrepreneurship and the entrepreneurial skillfulness of the population. Esteem promotes education, so there is also an indirect effect of individualism upon education (namely through esteem). Education promotes skills, so there is an indirect effect of esteem upon skills (namely through education) and there are also indirect effects of individualism upon skills (one indirect effect is from individualism to education and then to skills, and another indirect effect is from individualism to esteem to education to skills). Skills promotes entrepreneurial activity, and thereby there are several indirect effects of the other cultural conditions upon entrepreneurship.

Several conclusions can be drawn from the above analyses of framework conditions, their changes in Denmark, their favorableness in Denmark in comparison to other developed countries, and their effects upon entrepreneurship.

In recent years most of the framework conditions have tended to become more favorable and are more favorable today than a few years ago. A few of the framework conditions seem to be stable, without becoming more favorable or becoming less favorable. None of the framework conditions are worse today than they were a few years earlier. So, on the whole, the framework for entrepreneurship is more favorable today than a few years ago.

Where does this improvement bring Denmark compared to other countries? Most of the Danish framework conditions are rather close to the typical situation for developed countries, and rank around the middle among the developed countries. A few conditions are much more favorable in Denmark than typical among the developed countries. Conversely, a few conditions are much less favorable in Denmark than typical among the developed countries. So, on

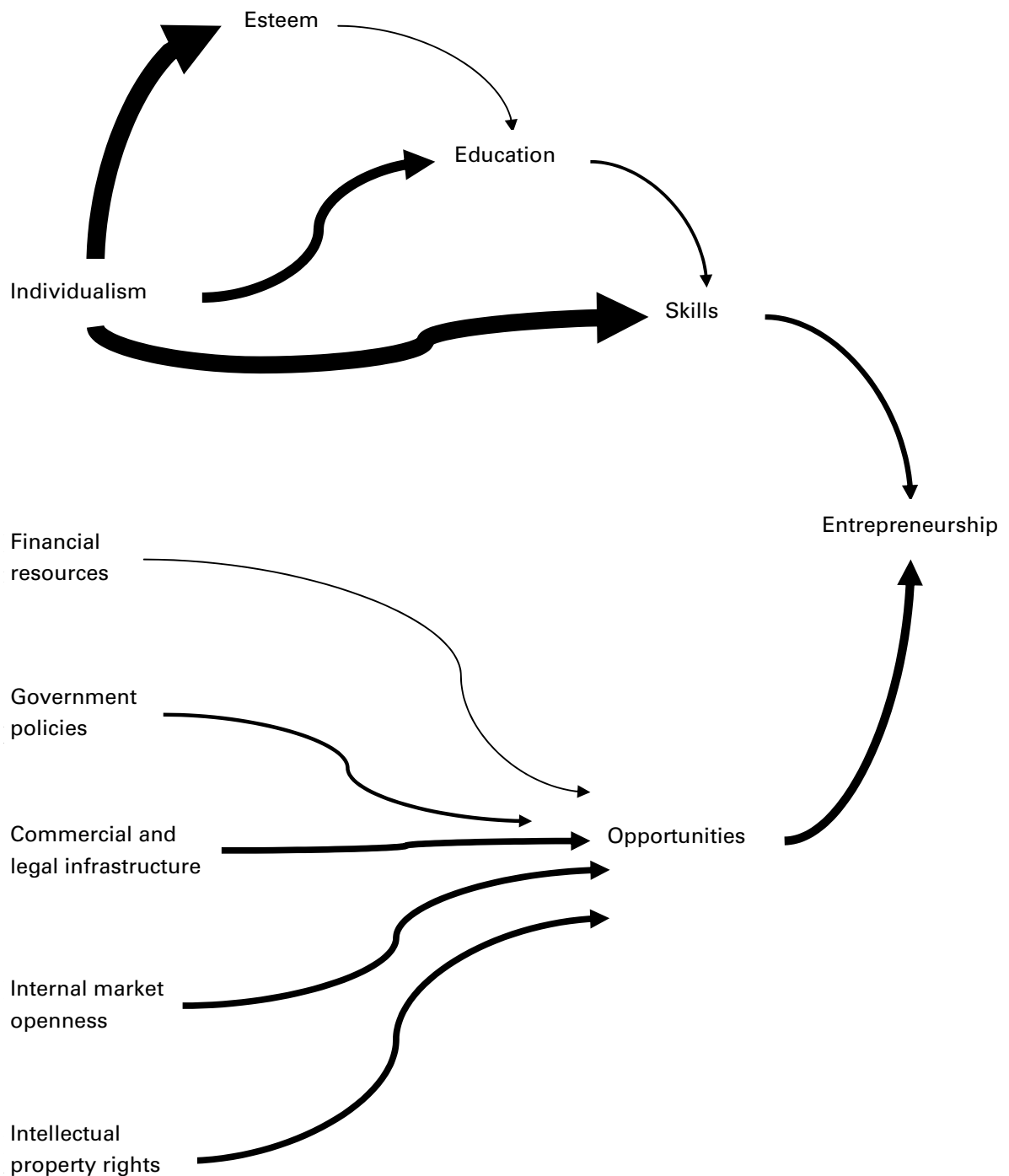
the whole, the framework in Denmark is about as favorable as the typical for the developed countries.

Both the cultural and the institutional framework conditions greatly promote entrepreneurial activity in discernable ways, cultural conditions enhance the entrepreneurial skills of the population and basic institutional conditions create

opportunities for the population to bring their skills into entrepreneurship.

Denmark has a level of entrepreneurship that is about typical for the developed countries and a framework that is about typical. This is easily understood. When a country has a framework that is typical, then we also expect the resulting level of activity to be typical.

**FIGURE 4.1 Effects of cultural and institutional conditions upon entrepreneurship.**



# Chapter 5

## Size attained by firms in Denmark

We now begin the analysis focusing on growth. The first questions are, What growth has been attained by firms in Denmark? That is, how big are the firms? How is the attained size dependent on the age of the firm? How is the attained size dependent on the entrepreneur, specifically on personal characteristics such as gender, education, and entrepreneurial attitudes?

Growth, that has been attained by a firm, here refers to its current size as measured by the number of persons working for the firm (Autio 2005). Our GEM-survey of the adult population in Denmark identifies owner-managers of existing firms (see Chapter 2). The owner-managers are then asked, *Right now, how many people, not counting the owners but including exclusive subcontractors, are working for this business?* This chapter analyzes the owner-managers identified in our surveys in Denmark in the years 2001 to 2007 who reported their number of employees, a total of 1.810 owner-managers.

**Table 5.1**  
Size of the firm, by age of the firm.

	Firms 0-5 years old	Firms 6+ years old
0 employee currently	43 %	33 %
1 – 9 employees currently	46 %	51 %
10+ employees currently	12 %	17 %
Sum	100 %	100 %
N firms	753	968

Size of a firm depends on the age of the firm, as a firm starts by being extremely small and big firms have taken many years to grow so big. The tendency to grow, apart from closing, is

evident by comparing new businesses to more established businesses, Table 5.1 (the association between age and size is statistically highly significant). Most businesses remain quite small, if they survive, and only few climb above ten employees.

### Size of firm and characteristics of its owner-manager

To understand growth of firms, apart from the age of the firm, we examine how attained growth is associated with personal characteristics of the owner-manager. We may hypothesize that big firms especially often are headed by educated and skilled men who are networking, willing to take risks, and recognizing opportunities. How size depends on gender, education, skills, networking, risk-willingness, and recognition will now be examined.

Gender of the owner-manager is associated with size of the firm, Table 5.2. Women tend to head small firms, whereas men tend to head bigger firms (the association is statistically highly significant). Causality may run in both directions, in the sense that men may be more growth-oriented than women, and that growing firms may attract males more than females, also into position as owner-manager.

**Table 5.2**  
Size of the firm, by the owner-manager's gender.

	Women	Men
0 employee now	43 %	35 %
1 – 9 employees	47 %	49 %
10+ employees	10 %	16 %
Sum	100 %	100 %
N owner-managers	575	1235

**Table 5.3**  
Size of the firm, by the owner-manager's secondary schooling.

	No graduation	Graduation
0 employee now	36 %	39 %
1 – 9 employees	52 %	43 %
10+ employees	12 %	18 %
Sum	100 %	100 %
N owner-managers	678	808

**Table 5.4**  
Size of the firm, by the owner-manager's further education.

	Vocational education	Lower-level higher education	Medium-level higher education	Upper-level higher education
0 employee now	38 %	43 %	37 %	38 %
1 – 9 employees	50 %	45 %	49 %	44 %
10+ employees	13 %	12 %	14 %	18 %
Sum	100 %	100 %	100 %	100 %
N	488	111	292	398

Note. This tabulation omits those reporting to have neither vocational education nor higher education.

Does education of the owner-manager pertain to size of the firm? We asked the adults in our survey whether they graduated from secondary school (*studentereksamen, HF, etc*). Graduation is associated with size, Table 5.3 (the association is statistically significant). Graduates tend to head big firms more often than owner-managers who did not graduate from secondary school.

Does further education also pertain to size of the firm? We asked the adults in our survey whether they had a vocational education, a lower-level higher education (1-2 years), a medium-level higher education (3-4 years), or an upper-level higher education (longer than 4 years). Owner-managers with vocational education tend to have slightly smaller firms than owner-managers with higher education, on the whole (the difference is statistically significant). Among those with higher education, the duration of the education is positively associated with size of the firm (the association is statistically significant).

Knowledge is acquired not only through formal education, but also through experience and other informal ways. We asked the adults in our survey, *Do you have the knowledge, skill and experience required to start a new business?* Having the skills is associated with size of the firm, Table 5.5 (the difference is statistically significant). Those who consider themselves skilled tend to head big firms whereas those who consider themselves less skilled tend to head smaller firms.

**Table 5.5**  
Size of the firm, by the owner-manager's skill.

	Skilled	Less skilled
0 employee now	36 %	46 %
1 – 9 employees	49 %	44 %
10+ employees	15 %	10 %
Sum	100 %	100 %
N owner-managers	1416	343

Is networking associated with size of the firm? People's networking in entrepreneurship was indicated in our survey by asking, *Do you know someone personally who started a business in the last two years?* Owner-managers' networking is associated with size of their business, Table 5.6 (the difference is statistically significant). Those who network tend to be in big firms more often than those who are not networking.

**Table 5.6**  
Size of the firm, by the owner-manager's networking.

	Networking	Not networking
0 employee now	35 %	41 %
1 – 9 employees	48 %	48 %
10+ employees	16 %	11 %
Sum	100 %	100 %
N owner-managers	1230	551

Is risk-willingness also associated with size of the firm? People's risk-willingness or risk-aversion was indicated in our survey by asking, *Would fear of failure prevent you from starting a business?* Owner-managers' risk-aversion or risk-willingness is associated with size of their business, Table 5.7 (the difference is statistically significant). Those who are risk-willing tend toward heading big firms more often than those who are risk-averse.

Is recognition of opportunity also associated with size of the firm? People's perception of

**Table 5.7**  
Owner-managers' risk-willingness and size of their firm.

	Risk-willing	Risk-averse
0 employee now	35 %	47 %
1 – 9 employees	50 %	41 %
10+ employees	15 %	13 %
Sum	100 %	100 %
N owner-managers	1397	364

opportunities was indicated in our survey by asking, *In the next six months, will there be good opportunities for starting a business in the area where you live?* Recognition of opportunity is indeed associated with size, Table 5.8 (the difference is statistically significant). Those who perceive opportunities to be good tend to head big firms more often than those who do not see good opportunities.

Each personal characteristic has now been examined in its association with size, and in this focus on one characteristic, the others have been ignored. Now we shall examine all the characteristics jointly, and ascertain how each characteristic is associated with size, while also taking the others into account, holding them constant.

### Size of firm explained by characteristics of the owner-manager

How size of a firm depends on the characteristics of the owner-manager can be examined by a multiple linear regression. The association of a characteristic with size is indicated by a coef-

**Table 5.8**  
Owner-managers' opportunity-recognition and size of their firm.

	Recognizing opportunity	Less recognition of opportunity
0 employee now	37 %	36 %
1 – 9 employees	47 %	52 %
10+ employees	16 %	12 %
Sum	100 %	100 %
N owner-managers	1099	479

ficient, a standardized regression-coefficient that is tested for significance, Table 5.9 (a coefficient is considered significant if its probability-value is below 0,05; and marginally significant if the p-value is between 0,05 and 0,10).

Gender is associated with size, in the way that being male is associated with large size (and female is associated with small size), while holding the other characteristics constant (the

coefficient for gender is statistically highly significant). Graduation from secondary school is also associated with size, in the manner that having graduated is positively associated with large size (and not being a graduate is associated with small size). Skills is also related to size, being skilled relates to large size. Networking seems also associated with size, in the way that networking is associated with large size (the coefficient, though, is only marginally

**Table 5.9**  
**Size of the firm, dependent on characteristics of the owner-manager.**  
**Multiple regression with standardized coefficients.**  
**Dependent variable is logarithm of number of persons in the firm**  
**(employees plus owner-manager).**

	Coefficient	Probability-value
Gender (male)	0,11	0,0002 (one-sided)
Graduation from secondary school	0,08	0,004 (one-sided)
Vocational education	0,01	0,42 (one-sided)
Medium-level higher education	0,02	0,34 (one-sided)
Upper-level higher education	0,03	0,29 (one-sided)
No vocational or higher education	0,06	0,06 (two-sided)
Skills	0,07	0,01 (one-sided)
Networking	0,05	0,06 (one-sided)
Risk-willingness	0,06	0,03 (one-sided)
Opportunity-recognition	0,03	0,14 (one-sided)
Age of the owner-manager	- 0,01	0,66 (two-sided)
Age of the firm	0,18	0,0005 (one-sided)
R2 = 0,06		
N = 1144 owner-managers		

Notes:

- Size as dependent variable is the logarithm of number of persons in the firm (employees plus owner-manager).
- Gender is a dummy variable that is 0 for women and 1 for men.
- Graduation from secondary school is a dummy that is 1 if graduated and 0 if not.
- Vocational education is a dummy for this further education.
- Medium-level higher education is a dummy for 2-3 years of higher education.
- Upper-level higher education is a dummy for 4 years or more of higher education.
- No vocational or higher education is a dummy for this situation.
- These four situations of further education are compared to Lower-level higher education as a reference.
- Skills, networking, riskwillingness, and opportunity-recognition are dummy variables as discussed in the text.
- Age of the owner-manager is the logarithm of years of age.
- Age of the firm is the logarithm of one plus years of age.

significant). Risk-willingness is associated with size, in that risk-willingness relates to large size, and risk-aversion relates to smaller size. Opportunity-recognition may be related to size, recognition may relate to large size and less recognition to small size (this coefficient, though, is actually not significant). Age of the firm is of course positively associated with size, the older the firm, the larger the firm. Age of the owner-manager is not significantly associated with size, when the other characteristics are held constant.

The four listed kinds of further education – vocational education, medium-level higher ed, upper-level higher ed, and no vocational or higher education – are all in contrast to lower-level higher education (i.e. they are four dummy variables for the five kinds of further education). Lower-level educated owner-managers form the reference-group against which the other owner-managers are compared. The positive coefficient for vocational education (0,02) indicates that the owner-managers with vocational education have larger firms than the owner-managers with lower-level higher education (in our sample). However the coefficient is not statistically significant, so we cannot generalize. The coefficient for medium-level higher education and the coefficient for upper-level higher education, likewise, are not significant. Those without vocational or higher education are a rather small and mixed residual group in the survey, about which I had no prior hypothesis. They do not differ significantly (albeit marginally) from those with lower-level higher education. In short, vocational or higher education has no significant association

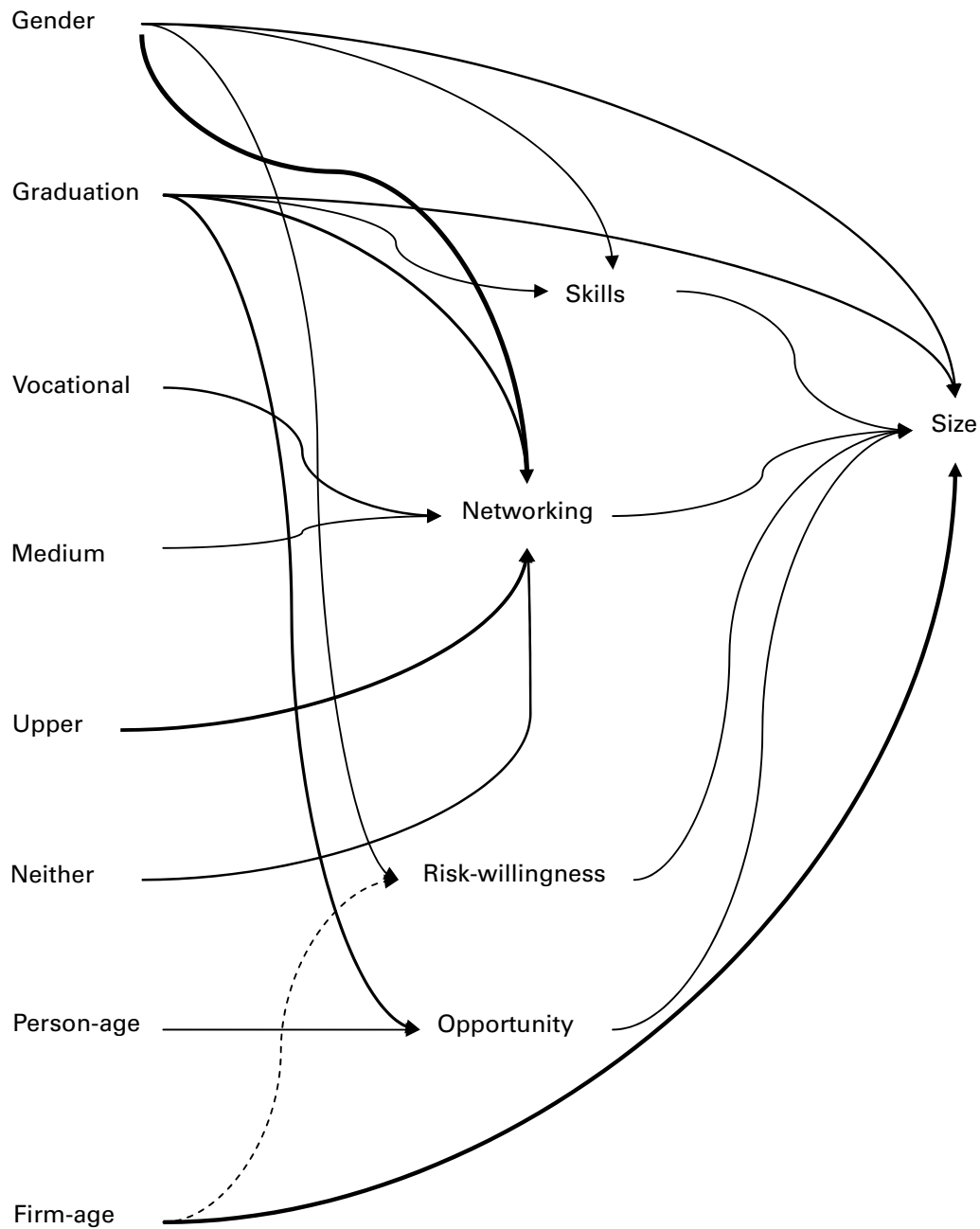
with size, when the other characteristics are held constant.

The characteristics of an owner-manager that affect the size of the firm comprise characteristics that are a background, namely gender, age and education, and characteristics that tend to be formed later, namely skills, network, risk-willingness and recognition of opportunities. The background affects these characteristics and thereby also indirectly affect the size of the firm.

These direct and indirect effects can be estimated (by multiple regressions, like those toward the end of Chapter 4) and represented as arrows, Figure 1. Most effects are positive, but one is negative (shown as a dotted line). The strength of an effect is symbolized by the thickness of the arrow (the strength is ascertained by the standardized regression coefficient, their magnitudes range up to only 0,21 which is a modest effect). The effects tend to be rather weak.

Size of a firm is directly promoted by firm-age and by the owner-manager being male and having graduated from secondary school, and by the skills, networking, risk-willingness and opportunity-recognition of the owner-manager. The owner-manager's gender, education and age also have several indirect effects upon size, namely through their effects upon skills, networking, risk-willingness and opportunity-recognition. High firm-age lowers the risk-willingness and thereby indirectly lowers the size (but this negative indirect effect is much weaker than the positive direct effect of firm-age upon size, so that the combined effect is positive).

**FIGURE 5.1**  
**Effects upon size of a firm from its age and characteristics of its owner-manager.**



In conclusion, size attained by firms depends on their age and on several characteristics of their owner-managers, directly by gender and graduation from secondary school and indirectly by further education that affect their networking which in turn seems to promote growth in size (also evidenced in Schøtt 2007, 2008). Size is also enhanced by the skills, risk-willingness and opportunity-recognition of the owner-manager

which are shaped by the gender, age and schooling.

Attained growth is that attained in the past. Future growth, as the growth expected in the future, will be examined next.

# Chapter 6

## Size expected in startups and firms in Denmark

What do people think about the future and what do they expect? I shall not forecast the future, forecasting is not my job. Rather, my task is to comprehend the thought and behavior of people, here to describe and explain entrepreneurs' thinking about their future. What future size do entrepreneurs expect in their startups and firms in Denmark? Are their ambitions modest or high, perhaps even higher than can realistically be attained in the future? Are ambitions rising in Denmark?

Future size of a firm refers to the number of people working for the firm in the future (Autio 2007). Our survey of the adult population identifies starters engaged in starting new firms and identifies owner-managers running existing firms (this identification is described in Chapter 2). The starters' expectation for future size of their new venture was indicated by asking, *How many people will be working for this business, not counting the owners but including all exclusive subcontractors, when it is five years old?* Similarly, the owner-managers' expectation for future size of their existing firm was indicated by asking, *Five years from now, how many people will be working for this business, not counting the owners but including all exclusive subcontractors?* The analyses in this chapter will be

based on the 528 starters and 1693 owner-managers identified in 2001 to 2007 who reported an expected future size.

### Expectations for future size in startups and existing firms

Expectations for five-year-growth differ between startups and existing firms, Table 6.1 (the differences are statistically highly significant). Starters have higher expectations than owner-managers of young firms, and far higher expectations than owner-managers of older firms. This rank order of expected future sizes is the opposite of the current sizes of these groups of firms. That is, the smallest firms (the startups) are expected to become the biggest firms, and the biggest firms (the old firms) are expected to become the smallest firms in five years. The conclusion thus is that starters have very high expectations, much higher than owner-managers of existing firms, and especially higher than owner-managers of old firms.

The expected sizes in Table 6.1 can be compared to the actual sizes of existing firms, as were shown in Table 5.1 in the preceding chapter. A glance at the two tables show that the expected sizes are much higher than the actual sizes. In particular, the starters' expectations for future sizes

**Table 6.1**  
Size expected in startups and firms in Denmark.

	Startups	Firms 0-5 years	Firms 6+ years
0 employee expected	23 %	29 %	34 %
1 – 9 employees	46 %	46 %	48 %
10+ employees	39 %	25 %	18 %
Sum	100 %	100 %	100 %
N	528	696	930

are far higher than the actual sizes of existing firms, and thus exceed anything realistic. We also see that the owner-managers of firms 0-5 years old have expectations for sizes when the firms will be 5-10 years old, which are much higher than the actual sizes of the firms 6+ years old. The comparison thus leads to the conclusion that the expectations of starters, and also of owner-managers of young firms, are so high as to be quite unrealistic.

### The historical rise in expectations for size

When we see that the expectations are so unrealistic, we should think that they are probably shaped by many forces, many forces other than a forecast. One such force may be the circumstance that not only have entrepreneurs become elevated as today's heroes, but growth-entrepreneurs have become heralded as super-heroes. Growth has become highly desirable, and small is no longer beautiful. A rise in the public desirability and status of growth-entrepreneurship may raise own expectations in the minds of the entrepreneurs. We can compare expectations now to expectations a few years ago, Table 6.2.

There has been a historical rise in recent years in the expectations of starters, today's starters have higher expectations than those of starters a few years earlier (the starters' increase is statistically significant). Likewise, nowadays owner-managers have higher expectations than those of owner-managers earlier (also the owner-managers' increase is statistically significant).

These findings are relevant for discussions of policy toward entrepreneurship. Because entre-

preneurs have expectations that are very high, higher than what is realistic, and have expectations that are even increasing, policies do not need to aim so much at raising entrepreneurs' ambitions, but may be better aimed at enabling entrepreneurs to pursue their ambitions for growth (see Chapter 13 for analyses of policies toward growth).

The above analysis of entrepreneurs' expectations for future size is not any end or goal in itself, but is merely the point of departure for analyzing their expectations for growth, that is, future size relative to current size, which will be examined next.

**Table 6.2**  
Expectations in 2000-05 and in 2006-07.

	Starters' expectations		Owner-managers' expectations	
	2000-05	2006-2007	2000-05	2006-07
0 employee expected	27 %	20 %	33 %	31 %
1 – 9 employees	44 %	49 %	48 %	45 %
10+ employees	29 %	32 %	18 %	23 %
Sum	100 %	100 %	100 %	100 %
N	246	282	743	950

# Chapter 7

## Growth expected in startups and firms in Denmark

Expectations for future size was examined in the previous chapter, concluding that starters have extremely high expectations for future size, they expect the future size to exceed that of existing firms, even the well-established firms. This chapter turns the focus from future size to future change in size.

Focusing on change in size will enable us to better understand the expectations. What future growth do entrepreneurs expect in their startups and firms in Denmark? More precisely, what is their expected net growth, relative to the current size of the firms? How are the entrepreneurs' expectations for future growth shaped by their personal characteristics such as gender, education, and entrepreneurial attitudes?

Growth connotes a change in the direction of expansion, as opposed to a change in the direction of contraction, and this connotation is thus a truncation of change. The full range of change encompasses positive growth, zero-growth, and negative growth, as they are sometimes called. Thus the concept of growth, in its full range, actually refers to change with a direction: up, down or neither.

The starters identified in our GEM-survey in Denmark (Chapter 2) reported the number of people they expected to be working for the firm when it will be five years old (as examined in Chapter 6). At startup of course begins without having anyone working for the startup. For a startup, therefore, the expected future growth is its expected size. For an existing firm, however, we shall consider future size relative to current size:

The owner-managers identified in our GEM-survey in Denmark (Chapter 2) reported the number of people currently working for their firm (examined in Chapter 5) as well as the number of people they expected to be working for the firm in five years (examined in Chapter 6). So the owner-managers' expectation for growth is indicated by the difference between the expected future size and the current size.

This chapter analyzes the starters and owner-managers identified in our GEM-surveys in Denmark in the years 2001 to 2007 who reported expected size five years later and, for the owner-managers, also the current size. They number 528 starters and 1686 owner-managers.

**Table 7.1**  
Change expected in size in five years, by starters and owner-managers.

	Starters	Owner-managers
Fewer employees expected	-	7 %
0 change expected	23 %	59 %
1–9 additional employees expected	46 %	25 %
10+ additional employees expected	31 %	9 %
Sum	100 %	100 %
N	528	1686

### Change expected in startups and existing firms

Starters and owner-managers differ in their expectations for growth, Table 7.1 (the difference is statistically significant). Starters have far higher expectations than owner-managers for growth. Expectations also differ widely within each phase. Among the starters, many have ambitious expectations, many others have modest expectations, and some expect no change. Among the owner-managers, most expect no change, but there are also some who expect high growth, and even some who expect negative growth.

### Growth-expectation and personal characteristics

How are the entrepreneurs' expectations shaped by their personal characteristics? We may hypothesize that high-growth expectations are especially frequent held by young educated men who are skilled, networking, risk-willing and recognizing opportunities. We shall examine

how growth-expectations depend on gender, education, skills, networking, risk-willingness and opportunity-recognition.

Gender seems to shape growth-expectations, Table 7.2. Among the starters, men tend to have higher expectations than women (the difference is statistically significant). Among the owner-managers, also the men have higher expectations (the difference is statistically significant).

Does a person's age shape the expectation for growth, are the young more ambitious, Table 7.3? Among the starters, age makes no visible difference, surprisingly (the two columns are almost identical and the small difference is not significant). Among the owner-managers, the younger ones tend to have higher expectations than the older ones (the difference is significant).

Does a person's growth-expectation depend on schooling and further education? Graduation from secondary school (studentereksamen, HF,

**Table 7.2**  
Change expected in size, by gender of starters and owner-managers.

	Starters		Owner-managers	
	Women	Men	Women	Men
Fewer employees expected	-	-	7 %	6 %
0 change expected	30 %	19 %	66 %	56 %
1 – 9 additional employees	47 %	46 %	22 %	26 %
10+ additional employees	23 %	35 %	5 %	11 %
Sum	100 %	100 %	100 %	100 %
N	191	337	531	1155

**Table 7.3**  
Change expected in size, by age of the starters and owner-managers.

	Starters		Owner-managers	
	18-39 years	40-64 years	18-39 years	40-64 years
Fewer employees expected	-	-	5 %	8 %
0 change expected	21 %	24 %	51 %	63 %
1 – 9 additional employees	48 %	45 %	34 %	21 %
10+ additional employees	31 %	31 %	11 %	8 %
Sum	100 %	100 %	100 %	100 %
N	248	271	560	1107

etc) is examined in relation to growth-expectations, Table 7.4. Among the starters, graduation makes no significant difference for growth-expectations. Among the owner-managers, graduation makes a difference, in the way that those who graduated had higher expectations.

Further education appears related to growth-expectations, Table 7.5. Among the starters, those with vocational training have higher expectations than those with higher education. Among the owner-managers, however, those

with vocational training have lower expectations than those with higher education. My interpretation is that starters with vocational training are extremely ambitious when they start, but then lower their ambitions as they become established (another plausible interpretation is that those with extremely high and unrealistic ambitions are especially likely to suffer attrition as they move from starting toward operating and their venture). We are currently following a panel of starters through survival (or discontinuation) toward establishment and growth, examining

**Table 7.4**  
Change expected in size, and graduation from secondary school, of starters and of owner-managers.

	Starters		Owner-managers	
	No graduation	Graduated	No graduation	Graduated
Fewer employees expected	-	-	7 %	6 %
0 change expected	24 %	20 %	62 %	55 %
1–9 additional employees	45 %	47 %	24 %	27 %
10+ additional employees	31 %	33 %	7 %	11 %
Sum	100 %	100 %	100 %	100 %
N	150	255	634	750

**Table 7.5**  
Change expected in size, and further education, of starters and of owner-managers

<b>STARTERS</b>	Vocational education	Lower-level higher education	Medium-level higher education	Upper-level higher education
Fewer employees expected	-	-	-	-
0 change expected	21 %	26 %	18 %	25 %
1–9 additional employees	42 %	49 %	47 %	43 %
10+ additional employees	37 %	26 %	36 %	32 %
Sum	100 %	100 %	100 %	100 %
N starters	111	43	111	95
<b>OWNER-MANAGERS</b>	Vocational education	Lower-level higher education	Medium-level higher education	Upper-level higher education
Fewer employees expected	7 %	3 %	7 %	5 %
0 change expected	60 %	69 %	59 %	58 %
1–9 additional employees	26 %	20 %	24 %	26 %
10+ additional employees	7 %	8 %	9 %	12 %
Sum	100 %	100 %	100 %	100 %
N owner-managers	457	100	269	372

Note. Those with neither vocational nor higher education are not included.

also how their expectations are modified and how they are turned into actual growth (Schøtt, 2007).

Among the starters with higher education at various levels, in Table 7.5, we see that those with upper-level higher education have higher expectations than those with lower-level higher education. Among the owner-managers we also see a positive association between expectations and level of higher education. So, for those with higher education, and irrespective of phase, a higher level of education entails higher expectations.

Skills, in the sense of having knowledge, skills and experience to start a new business, are associated with growth-expectations, Table 7.6 (the measurement of skills is described in Chapter 5). Those considering themselves skilled also tend to have high growth-expectations, higher than those who consider themselves less skilled.

Networking, as personally knowing an entrepreneur, pertains to growth-expectations, Table 7.7 (the measure of networking is described in Chapter 5). Starters who network have higher expectations than starters who do not network (the difference is significant). Owner-managers who network also have higher expectations than others (the difference is significant).

Riskillingness is also related to growth-ambitions, Table 7.8 (the measurement of riskwillingness is described in Chapter 5). Risk-willing starters are more ambitious than risk-averse starters (the difference is significant). Likewise, risk-willing owner-managers are more ambitious than risk-averse owner-managers (the difference is significant).

Recognizing opportunity also relates to growth-ambitions, Table 7.9 (the measurement of opportunity-recognition is described in Chapter 5). Starters and owner-managers perceiving

**Table 7.6**  
Change expected in size, by skills of starters and of owner-managers.

	Starters		Owner-managers	
	Skilled	Less skilled	Skilled	Less skilled
Fewer employees expected	-	-	6 %	9 %
0 change expected	20 %	42 %	56 %	69 %
1–9 additional employees	46 %	43 %	27 %	18 %
10+ additional employees	34 %	15 %	10 %	4 %
Sum	100 %	100 %	100 %	100 %
N	415	84	1321	322

**Table 7.7**  
Change expected in size, by networking.

	Starters		Owner-managers	
	Networking	Not networking	Networking	Not networking
Fewer employees expected	-	-	6 %	7 %
0 change expected	21 %	27 %	55 %	68 %
1–9 additional employees	44 %	54 %	28 %	20 %
10+ additional employees	35 %	19 %	11 %	4 %
Sum	100 %	100 %	100 %	100 %
N	385	135	1147	512

**Table 7.8**  
**Change expected in size, by risk-willingness, of starters and of owner-managers.**

	Starters		Owner-managers	
	Risk-willing	Risk-averse	Risk-willing	Risk-averse
Fewer employees expected	-	-	7 %	7 %
0 change expected	22 %	29 %	57 %	68 %
1–9 additional employees	46 %	47 %	27 %	18 %
10+ additional employees	32 %	24 %	10 %	6 %
Sum	100 %	100 %	100 %	100 %
N	413	93	1304	341

**Table 7.9**  
**Change expected in size, by opportunity-recognition, of starters and of owner-managers.**

	Starters		Owner-managers	
	Recognizing opportunity	Less recognition of opportunity	Recognizing opportunity	Less recognition of opportunity
Fewer employees expected	-	-	1 %	8 %
0 change expected	17 %	30 %	56 %	65 %
1–9 additional employees	49 %	44 %	28 %	21 %
10+ additional employees	34 %	26 %	10 %	6 %
Sum	100 %	100 %	100 %	100 %
N	396	105	1030	454

opportunities are more ambitious than those who do not see opportunities (the differences are significant).

Each personal characteristic has now been examined in its association with growth-expectation, and with the focus on one characteristic, while the others have been ignored. Now we shall examine all the characteristics jointly, and ascertain how each characteristic is associated with expectation, while also taking the others into account, holding them constant.

### **Growth-expectation explained by personal characteristics**

How growth-expectation depends on the characteristics of the entrepreneur can be examined by a multiple linear regression. The association of a characteristic with expectation is indicated by a coefficient, a standardized regression-coefficient, that is tested for significance, Table 7.10 (a coefficient is considered significant

if its probability-value is below 0,05; and marginally significant if its p-value is between 0,05 and 0,10). Starters and owner-managers are analyzed separately.

For the starters, gender is associated with expectation, in the way that being male is associated with high expectation (and female is associated with lower expectation), while holding the other characteristics constant (the coefficient for gender is statistically highly significant).

Starters' skills is also related to expectation, being skilled relates to high expectation. Networking is also associated with expectation, in the way that networking is associated with high expectation. Risk-willingness is also associated with expectation, in that risk-willingness relates to high expectation, and risk-aversion relates to lower expectation.

The starters' opportunity-recognition is not sig-

nificantly related to expectation. The starters' age is not significantly related to expectation, when the other characteristics are held constant. Graduation from secondary school is also not associated with expectation.

The four listed kinds of further education – vocational education, medium-level higher

ed, upper-level higher ed, and no vocational or higher education – are all considered in contrast to lower-level higher education. Starters with lower-level higher education form the reference-group against which the other starters are compared. The positive coefficient for vocational education (0,003) indicates that the starters with vocational education have higher expectations

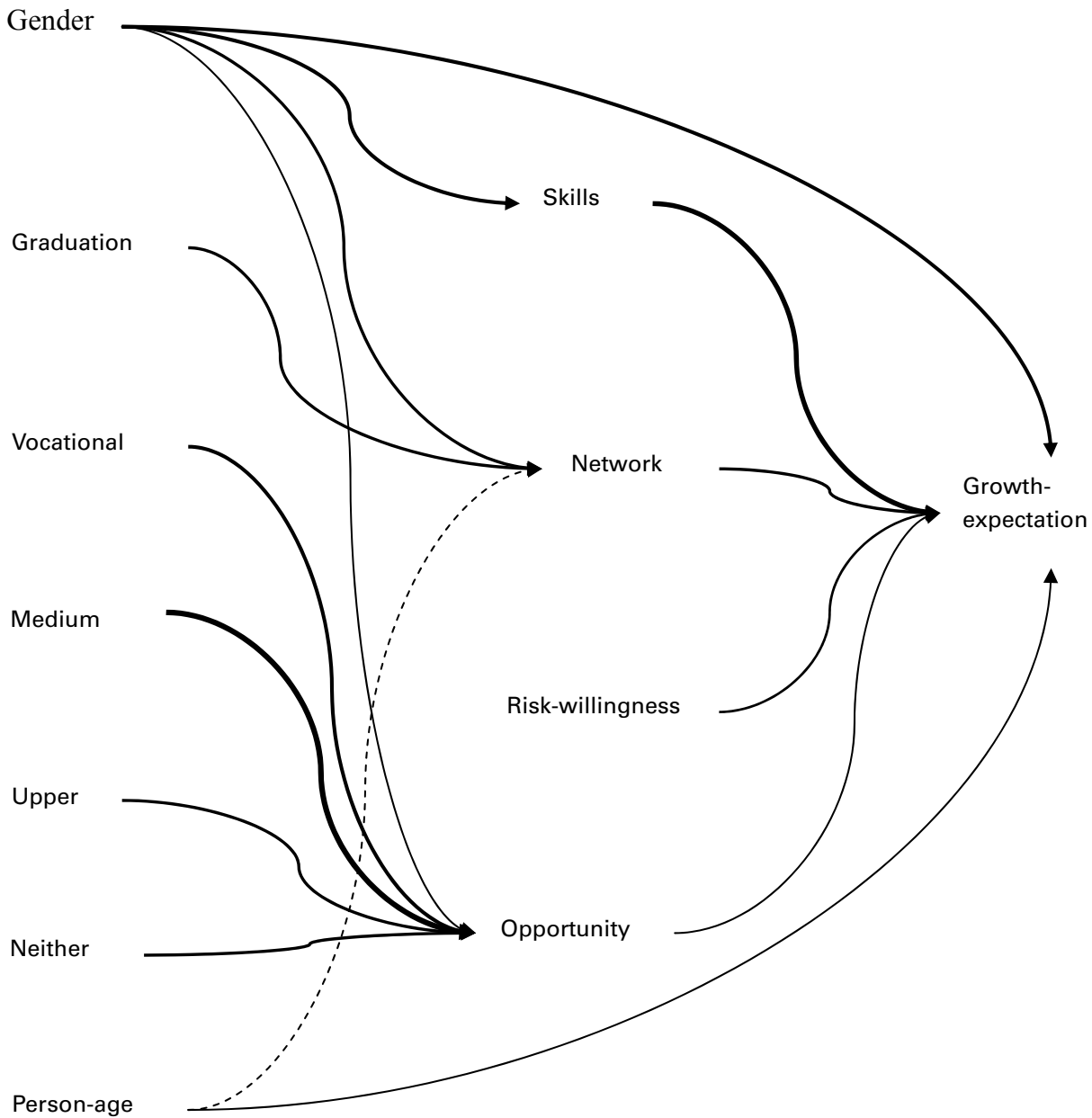
**Table 7.10.**  
**Growth-expectation, dependent on attributes.**  
**For the starters and for the owner-managers.**  
**Linear regression with standardized coefficients and probability-values.**

	Starters		Owner-managers	
	Coefficient	Probability-value	Coefficient	Probability-value
Gender (male)	0,16	0,002 (one-sided)	0,07	0,01 (one-sided)
Graduation from secondary school	0,03	0,31 (one-sided)	- 0,02	0,54 (two-sided)
Vocational education	0,03	0,38 (one-sided)	- 0,001	0,96 (two-sided)
Medium-level higher education	0,05	0,27 (one-sided)	0,01	0,43 (one-sided)
Upper-level higher education	- 0,04	0,65 (two-sided)	0,05	0,18 (one-sided)
No vocational or higher education	- 0,03	0,66 (two-sided)	0,01	0,83 (two-sided)
Skills	0,14	0,02 (one-sided)	0,02	0,24 (one-sided)
Networking with starter	0,10	0,04 (one-sided)	0,002	0,46 (one-sided)
Risk-willingness	0,12	0,03 (one-sided)	0,05	0,05 (one-sided)
Opportunity-recognition	0,03	0,29 (one-sided)	0,07	0,01 (one-sided)
Age of the entrepreneur	0,003	0,94 (two-sided)	- 0,09	0,01 (one-sided)
Age of the firm			- 0,26	0,001 (one-sided)
	R2 = 0,09		R2 = 0,11	
	N = 327		N = 1127	

Notes:

- Growth-expectation, as the dependent variable in the first regression, is measured as the logarithm of one plus the number of employees that the starter expects to have five years upon start.
- Growth-expectation, as the dependent variable in the second regression, is measured as the logarithm of the ratio of one plus expected number of employees to one plus current number of employees.
- Gender is a dummy variable that is 0 for women and 1 for men.
- Graduation from secondary school is a dummy that is 1 if graduated and 0 if not.
- Vocational education is a dummy for this further education.
- Medium-level higher education is a dummy for 2-3 years of higher education.
- Upper-level higher education is a dummy for 4 years or more of higher education.
- No vocational or higher education is a dummy for this situation.
- These four situations of further education are compared to Lower-level higher education as a reference.
- Skills, networking, riskwillingness, and opportunity-recognition are dummy variables as described in Chapter 5.
- Age of the person is the logarithm of years of age.
- Age of the firm is the logarithm of one plus years of age.

**Figure 7.1**  
**Conditions with direct and indirect effects upon growth-expectations of starters**



than the starters with lower-level higher education (in our sample). However the coefficient is not statistically significant, so we cannot generalize from our sample of starters to the starters in general. The coefficient for medium-level higher education and the coefficient for upper-level higher education, likewise, are not significant. Those without vocational or higher education are a rather small and mixed residual group in the survey, about which I had no prior hypothesis. They do not differ significantly from those

with lower-level higher education. In short, starters' vocational or higher education has no significant association with expectation, when the other characteristics are held constant.

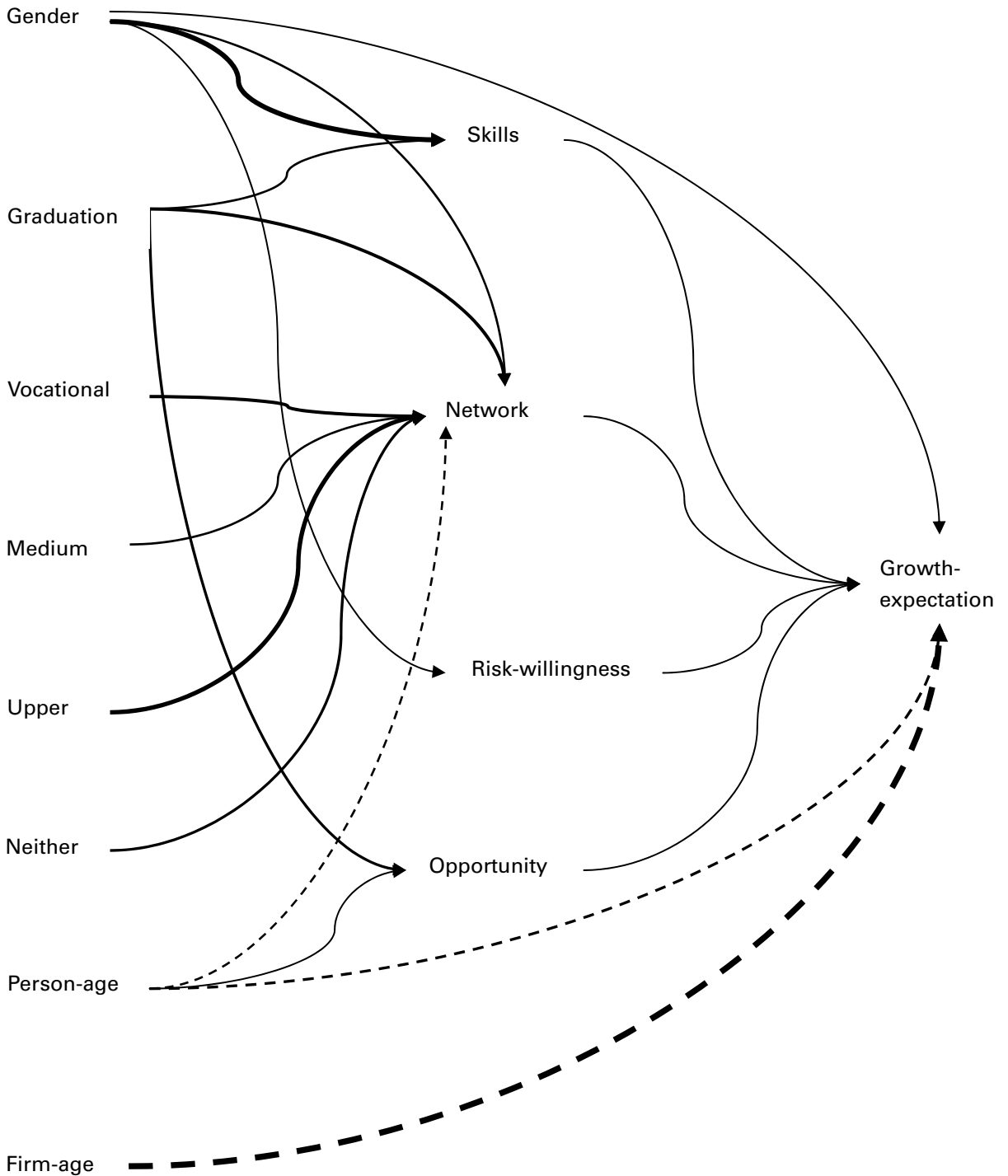
The owner-managers have associations that are mostly similar to those for the starters, Table 7.10. For the owner-managers, being male entails higher expectations than being female. Being risk-willing entails higher expectations. Recognizing opportunity also elevates expectations.

Owner-managers' graduation from secondary school has no significant effect on expectations. Having a vocational education, in contrast to a lower-level higher education, has no significant effect on the expectation. Likewise, having medium-level higher education or upper-level

higher education, in contrast to having lower-level higher education, do not matter for their expectations.

Owner-managers' skills has no bearing on their expectations. Networking with an upstarter has

**Figure 7.2**  
**Conditions with direct and indirect effects upon growth-expectations of owner-managers.**



no significant effect upon expectations (this is not surprising, it is more worthwhile to know that their networking with peers promotes growth; for evidence on this, see Schøtt 2008b).

Several conclusions can be drawn from the analyses of growth-expectations. Starters have far higher expectation than owner-managers for future growth. For both kinds of entrepreneurs, expectations are shaped to notable extent by their personal characteristics, both background and entrepreneurial characteristics formed later in life. Starters' and entrepreneurs' growth-expectations are enhanced by being male, skilled, networking, risk-willing and opportunity-recognizing, and their background in terms of gender, age, schooling and further education also have indirect effects upon their expectations.



# Chapter 8

## Creation of jobs expected in Denmark

The individual entrepreneurs' expressed expectations of change in number of jobs within each firm add up to a collective expectation of the creation of jobs in the country. What does this collective expectation amount to? Is their expressed expectation to be understood as their realistic forecast of the labor market, or is it better understood as their ambition? Which group of entrepreneurs is mainly behind this collective growth-expectation, forecast or ambition – is it the starters, the new-business owner-managers, or the established-business owner-managers?

Each entrepreneur expects the firm to change its size by some number of people in five years. Collectively, the entrepreneurs thus expect their firms to change in their aggregate size by the Sum of these numbers. Aggregating not only across our sample but also across the population, from which the sample was drawn, Sum up to the nation's entrepreneurs' collective expectation for the change during five years in employees, the new jobs that they expect to create in the country.

In our GEM-surveys of the adult population in Denmark we interviewed a 22.106 adults, or roughly 1 out of 200 working-age adults in the country (in the latest seven years, but timing of the surveys is unimportant here). Thereby we identified starters and owner-managers and each reported their expected change in number of persons working for their firms, some expected a negative change, many expected no change, and many expected a positive growth (as analyzed in the preceding chapter). With many more positive changes than negative changes, their expected changes Sum up to a positive number, 12.387 additional persons that they expect to employ in five years.

This expectation for 12.387 additional jobs was elicited by interviewing a sample of roughly 1 out of 200 adults in the country, a rather representative sample. So a census of the adult population, rather than our sample, would elicit a number roughly 200 times higher, which amounts to an expectation for about 2.500.000 additional jobs in the country. This estimate is quite rough (e.g., the estimate ignores missing data arising from the "don't know" responses, and numbers exceeding a thousand are also ignored; moreover, it ignores that starters have a gestation-period which is shorter than the period that owner-managers are available for sampling). The estimate could be improved, and precision is important if the estimate were to serve as a forecast of the labor market, but the estimate suffices for analyzing expectations. This number of 2.500.000 is roughly the current size of the work force in the country. So adding this number of jobs would amount to a doubling of the labor force.

These 2.500.000 jobs represent of the Danish entrepreneurs' collective expectation for their creation of additional new jobs in five years, like a snapshot taken one day when all entrepreneurs expressed their expectations in a census. (Furthermore, shortly after that day, within the five-year-window, will come more starters who will also expect to employ workers within that window, thus further increasing the number of jobs to be created within the window). Such expansion of the work force, would require a combination of, say, immigration of a million working adults, employing a million robots, and employing half a million retirees, students, pupils, homemakers and soldiers returning from wars, perhaps along with lengthening the work-day, shortening vacations, and moving more manufacturing overseas. No combination of

steps to expanding the work force this much would be feasible. So this creation of new jobs should not be considered anything like a realistic forecast of the labor force. Expanding the labor force would hit a ceiling, and hitting the ceiling is indeed part of the dynamics in today's labor market in Denmark.

The entrepreneurs' expressed expectation for creation of the many jobs is not to be understood as a forecast, but is better understood as their ambition. Ambition is what people would like to do and also strive for with good intention, but more or less ignoring constraints arising from limitations in their ability and their environment, such as the limited labor force. The conclusion, based on their expressed expectations, is that the entrepreneurs have very high ambitions, and far higher than they can possibly reach.

Which group of entrepreneurs is mainly behind this collective growth-expectation or ambition – is it the starters, the new-business owner-managers, or the established-business owner-managers?

### Where are the entrepreneurs?

To pinpoint the growth potential in the entrepreneurial effort in the country, we first consider where the entrepreneurs are in the system, the distribution of entrepreneurs across phases and expectations, Table 8.1.

In Table 8.1, the largest group of entrepreneurs is the 30% who are owner-managers in estab-

lished firms and expecting no change. Indeed, among the three phases, the largest is that of owner-managers of established firms (44%); and, among the four levels of change, the largest is that of entrepreneurs expecting no change (50%). The highly ambitious starters are a mere 8% of all the entrepreneurs.

### Where are the expected job?

Each entrepreneur reported a number for the expected change in their staff, so instead of counting the entrepreneurs as in Table 8.1, we can count their expected new jobs, Table 8.2. The entrepreneurs who expected no change entail zero job creation as shown in that row in Table 8.2. The entrepreneurs who expect fewer employees entail the negative job creations shown in the top row (the percentage is the number of jobs expected to be lost as percentage of the total number of new jobs that are added). The entrepreneurs who expect additional employees entail the positive job creations shown in the third row and fourth row.

Job creation is expectedly largest for the startups expecting 10 or more employees, it is expectedly as much as 44% of all new job creations. So 44% of the creations of new job are expected by those entrepreneurs who are starters and highly ambitious, the 8% of the entrepreneurs. It should be reemphasized that this kind of calculation is a very crude estimate for numerous reasons (for example, Table 8.2 is a distribution of expected job-creations in a five-year window, based on a sample of expectations, but an expectation from

**Table 8.1**  
**Entrepreneurs, by phase of business and expectation for change.**  
**Percent of all entrepreneurs.**

	Starters	Owner-managers of firms 0-5 years	Owner-managers of firms 6+ years	Sum
Fewer employees expected		2 %	3 %	5 %
0 change expected	5 %	15 %	30 %	50 %
1–9 additional employees	11 %	11 %	8 %	30 %
10+ additional employees	8 %	4 %	3 %	15 %
Sum	24 %	32 %	44 %	100 %
N entrepreneurs				2.214

**Table 8.2**

**New jobs expected in businesses in total, by phase and expectation for change.  
Percent of all expected jobs.**

	Startups	Firms 0-5 years	Firms 6+ years	Sum
Fewer employees expected		- 1 %	- 2 %	- 3 %
0 change expected	0 %	0 %	0 %	0 %
1–9 additional employees	6 %	7 %	4 %	17 %
10+ additional employees	44 %	23 %	19 %	86 %
Sum	50 %	29 %	21 %	100 %
N new jobs expected				12.387

an owner-manager is more likely to be included than an expectation from a starter pertaining to that window, because the former person is an owner-manager for longer than the other person is a starter, and therefore the former is more likely to be reporting an expectation than the latter; in other words, the sampled starters should be weighted more than the sampled owner-managers when estimating their expected contributions to job creation, so our calculated 44% is perhaps underestimated). Despite their crudeness, the estimates are informative.

By this crude estimate, a mere 8 % of the entrepreneurs, namely the highly ambitious starters, expect to create as much as 44% of the future jobs expected altogether in the country.

Concludingly, the individual entrepreneurs' expressed expectations of change in number of jobs within each firm add up to a collective expectation of the creation of jobs in the country in five years. The Danish entrepreneurs' collective expectation amounts to roughly 2.500.000 new jobs in the country, an amount that is about the size of the current work force and thus would amount to doubling the work force. Their collective expectation is not a realistic forecast but is it better understood as their ambition. The group of entrepreneurs that is mainly behind this collective growth-expectation or ambition – is neither the new-business owner-managers nor the established-business owner-managers, but is the starters, especially the highly ambitious starters.

Policy in Denmark currently focuses on increasing growth-entrepreneurship, increasing the number of new firms that grow rapidly (Chapter 13). Increase can be attained by raising ambitions or by enabling high ambitions to become actual growth. The policy-conclusion of the above analysis is that policy should not aim at increasing ambitions, because ambitions are already high, but rather aim at facilitating growth in the firms of the ambitious starters.



# Chapter 9

## Growth-starters' funding in Denmark

Does funding of growth-entrepreneurship differ from funding of non-growth-entrepreneurship, in amount and in sources? Is growth-entrepreneurship predicted to yield paybacks that come especially slow or fast? Is growth-entrepreneurship predicted to yield returns that are especially meager or manifold? It seems reasonable to hypothesize that growth-entrepreneurship requires especially much funding and is extensively funded by the starter.

### Funding and expectations for growth

The need for funding is measured for starters identified in our GEM-surveys (Chapter 2). Starters were asked, *How much money, in total, will be required to start this new business?* The question was asked in the years 2004 to 2007, with 381 starters responding.

The amount of money required for the startup is associated with the starter's expectation for growth, Table 9.1.

The starter's expectation for growth is indicated by the expected number of employees when the new firm is five years old (Chapter 6). The starters with high expectations for growth tend to require more funds than the starters with lower expectations (the association be-

tween growth-expectation and needed funds is significant).

This money, when some is required, may be provided by the starter alone, or partly provided by others. The starters who required some money were asked, *Will the total amount of money required be provided by yourself alone?* The question was asked in 2006 to 2007 with 309 starters responding.

The starters' self-sufficiency in provision of money as needed is related to their growth-ambition, Table 9.2 (the differences are statistically significant). The highly ambitious starters are not self-sufficient whereas the less ambitious starter tend to rely on own money.

Are starters' growth-expectations related to their own investment? The starters were asked, *How much of your own money, in total, do you expect to provide for this new business?* The question was asked in 2004 to 2007, with 349 starters responding.

The starters' investment relates to their growth expectations, Table 9.3 (the association is statistically significant). The highly ambitious starters tend to provide an investment of own money

**Table 9.1**  
Money required for the startup, by expected future size.

	0 employee expected	1-9 employees expected	10+ employees expected
No money required to start	9 %	5 %	2 %
1-100.000 Danish crowns	66 %	38 %	21 %
100.001+ Danish crowns	25 %	57 %	77 %
Sum	100 %	100 %	100 %
N starters	32	113	94

**Table 9.2**  
**Provision of money by the starter, by expected future size.**

	0 employee expected	1-9 employees expected	10+ employees expected
All money will be provided by starter	96 %	73 %	52 %
Not all money will come from starter	4 %	27 %	48 %
Sum	100 %	100 %	100 %
N starters	23	90	75

**Table 9.3**  
**Money provided by the starter, by expected future size.**

	0 employee expected	1-9 employees expected	10+ employees expected
No money provided by starter	10 %	8 %	7 %
1-100.000 Danish crowns	63 %	43 %	33 %
100.001+ Danish crowns	27 %	49 %	60 %
Sum	100 %	100 %	100 %
N starters	30	106	88

**Table 9.4**  
**Money needed from others than the starter, by expected future size.**

	0 employee expected	1-9 employees expected	10+ employees expected
No money from others	87 %	76 %	52 %
1-100.000 Danish crowns	7 %	4 %	7 %
100.001+ Danish crowns	7 %	20 %	41 %
Sum	100 %	100 %	100 %
N starters	30	106	88

**Table 9.5**  
**Correlations among growth-expectation, money required in total, money provided by self, money provided by others, and self-sufficiency.**

	Money required total	Money from self	Money from others	Self-sufficiency
Growth-expectation	0,37	0,15	0,32	- 0,35
Money required total		0,81	0,37	- 0,31
Money from self			0,02	0,02
Money from others				- 0,92

that is larger than the investment provided by less ambitious starters.

Are starters' growth-expectations also related to money to be provided by others. Money to be

provided by others is measured as the difference between money required in total and money to be provided by the entrepreneurs themselves. Money from others is related to growth-expectations, Table 9.4 (the association is statistically

significant). The ambitious starters tend to rely on money from others far more than less ambitious starters.

The association of growth-expectation with these aspects of funding are also measured by the correlations, Table 9.5. The correlations are significant, except the two that are near 0.

### Starters' funding from others

Who are the others on whom the starters rely for providing the needed money that are not provided by themselves? The starters were asked, *Where do you expect to get the rest of the money needed to start your business? Will this be from ...a close family member?...other*

*relatives?... etc.* The question was asked in 2001, 2003 and 2006, with about 100 starters responding to each sub-question.

Growth-expectation is related to most of these sources of funding, one way or the other, Table 9.5 (each of the eight tests is based on only about 70 starters). Highly ambitious starters especially often use banks or other financial institutions, especially often use governmental or public support programs, and especially often use people they don't know personally. Highly ambitious starters especially rarely use close family (and probably also rarely other relatives, but this difference is not statistically significant in this small sample).

**Table 9.6**  
Sources of needed funding, by expected future size. Sumoney 1-8

	0 employee expected	1-9 employees expected	10+ employees expected	Probability-value (two-tailed)
Close family	69 %	36 %	9 %	0,001
Other relatives	19 %	9 %	0 %	0,12
Work colleagues	6 %	6 %	5 %	0,97
People you don't know personally	0 %	6 %	33 %	0,003
Friends or neighbors	6 %	9 %	0 %	0,37
Banks or other financial institutions	6 %	30 %	45 %	0,03
Government or public support programs	0 %	23 %	40 %	0,02
Other sources of funding	0 %	21 %	50 %	0,002

**Table 9.7**  
Predicted time till payback of investment, by expected future size. Supayback

	0 employee expected	1-9 employees expected	10+ employees expected
About six months	38 %	20 %	24 %
About one year	17 %	21 %	32 %
About two years	17 %	29 %	29 %
About five years	14 %	20 %	14 %
About ten years, or more, or never	14 %	11 %	1 %
Sum	100 %	100 %	100 %
N starters	29	92	84

**Table 9.8**  
**Predicted return on investment during the next ten years, by expected future size.**  
**Supayoff**

	0 employee expected	1-9 employees expected	10+ employees expected
None or half the investment	0 %	9 %	4 %
About the same as investment	19 %	14 %	10 %
One and half times investment	0 %	3 %	2 %
Twice the investment	12 %	18 %	11 %
Five times the investment	15 %	17 %	17 %
Ten times the investment	27 %	18 %	24 %
Twenty times the investment	27 %	21 %	33 %
Sum	100 %	100 %	100 %
N starters	26	95	83

### Starters' predictions for payback

Is growth-expectation related to payback, both in terms of time until payback of own investment and in terms of return on the investment? Time until payback was measured by asking the starters, *How long do you think it will be before you get back the full amount of your contribution to this new firm?* This question was posed in the surveys in 2004 to 2006, with 329 starters responding. Growth-expectation is not systematically related to predicted time until payback of own investment, Table 9.7.

The starters prediction of their return on their investment was measured by asking the starters, *In the next ten years, what payback do you expect to get on the money you put into this startup?* This question was asked in our sur-

veys 2004 to 2007, with 322 starters responding. Growth-expectation seems weakly related to the return on the investment, Table 9.8. The higher the expectation, the larger the predicted return, but the tendency is weak (and the association is marginally significant).

Growth-entrepreneurship, we conclude, tends to require especially large funding, much funding comes from the entrepreneurs themselves, and much funding comes from others, especially from banks and public sources, but rarely from family. Growth-entrepreneurs do not predict payback to be especially fast or especially slow, compared to more ordinary entrepreneurship, but they tend to predict an especially high return.

# Chapter 10

## Coupling between growth-entrepreneurship and innovation

Does growth-entrepreneurship go hand-in-hand with innovation, as a weak or strong coupling, within startups and existing firms? (Neergaard et al 2003)

The innovativeness of startups and existing firms is indicated by asking about newness of the product to customers, newness of the technology used, and competitiveness on the market (Schøtt, 2006a:102, 2007a:57). The responses are added into an index of innovativeness. The numerical index is used for analyses such as correlations, and the index is simplified by a cutoff so as to just distinguish between innovative and less innovative entrepreneurs. This analysis is based on the surveys in 2002 to 2007, identifying 360 starters and 1497 owner-managers reporting their innovativeness and growth-expectations.

Innovationness relates to grow-expectations, Table 10.1. Among the starters, the innovative ones have higher expectations than the less innovative ones (the difference is statistically significant). Among the owner-managers, likewise, innovation and growth-expectation are

positively associated (the difference is statistically significant).

The coupling between innovativeness and growth-expectation is indicated by their correlation. Innovativeness is measured by the numerical index, and growth-expectation is measured by the logarithm of the ratio of one plus number of employees expected in five years to one plus number of current employees (this denominator is 1 for the starters).

For the starters, the correlation is 0,25 between innovativeness and growth-expectation (the correlation is statistically significant). For the owner-managers, the correlation is 0,10 between innovativeness and growth-expectation (the correlation is significant). Thus, for the entrepreneurs in both phases, innovativeness and growth-expectations tend to go hand-in-hand, as a positive coupling. Their coupling, though, is weak within existing firms and stronger within startups.

**Table 10.1**  
Growth-expectation, by innovativeness, of starters and of owner-managers.

	Starters		Owner-managers	
	Innovative	Less innovative	Innovative	Less innovative
Fewer employees expected	-	-	6 %	7 %
0 change expected	13 %	21 %	56 %	62 %
1–9 additional employees	40 %	55 %	26 %	25 %
10+ additional employees	47 %	24 %	11 %	6 %
Sum	100 %	100 %	100 %	100 %
N entrepreneurs	229	131	625	872



# Chapter 11

## Coupling between growth-entrepreneurship and exporting

Does growth-entrepreneurship go hand-in-hand with exporting, as a weak or strong coupling, within startups and existing firms? (Bager et al 2005).

Export-orientation of startups and firms is indicated by asking the starters and owner-managers how many percent of their customers are abroad (Schøtt, 2006a:107, 2007a:61). The percentage is used for analyses such as correlations, and the measure is simplified by just contrasting the exporting to the non-exporting entrepreneurs. This analysis is based on the surveys in 2002 to 2007, identifying 331 starters and 1450 owner-amangers reporting their exporting and growth-expectations.

Exporting relates to grow-expectations, Table 11.1. Among the starters, the exporters have higher growth-expectations than the starters without export-orientation (the difference is statistically significant). Among the owner-managers, likewise, exporting and growth-expectation are positively associated (the difference is statistically significant).

The coupling between export and growth-expectation is indicated by their correlation. Export is measured by the percentage of customers abroad, and growth-expectation is measured by the logarithm of the ratio of one plus number of employees expected in five years to one plus number of current employees (this denominator is 1 for the starters).

For the starters, the correlation is 0,20 between export-orientation and growth-expectation (significant). For the owner-managers, the correlation is 0,06 between exports and growth-expectation (significant). Thus, for the entrepreneurs in both phases, export and growth-expectations tend to go hand-in-hand and are positively coupled. Their coupling, though, is weak within existing firms and stronger within startups.

**Table 11.1**  
Growth-expectation, by exporting, of starters and owner-managers.

	Starters		Owner-managers	
	Exporting	No export	Exporting	No export
Fewer employees expected	-	-	6 %	7 %
0 change expected	13 %	20 %	53 %	65 %
1 – 9 additional employees	41 %	49 %	28 %	24 %
10+ additional employees	46 %	31 %	13 %	4 %
Sum	100 %	100 %	100 %	100 %
N entrepreneurs	152	179	693	757



# Chapter 12

## Growth-expectations of entrepreneurs in Denmark compared to other countries

How does Denmark compare to other countries in growth-entrepreneurship? Is Denmark similar to other countries, or above or below, in expectations for growth?

The GEM-survey of the adult population has been conducted in many countries around the world, and in by far most developed countries, everywhere using the same questions to identify starters and owner-managers and to elicit their expectations for growth. A starter or owner-manager's growth-expectation is measured as the logarithm of the ratio of one plus number of employees expected in five years to one plus number of current employees (for startups this denominator is 1), as analyzed in several earlier chapters. We have adequate data on starters' and owner-managers' growth-expectations in the period 2001-2007 in 31 developed countries.

### Entrepreneurs' average expectation

The growth-expectations of starters in each country can be averaged, Table 12.1, left side. Among the participating developed countries, the starters in the Czech Republic have the highest average growth-expectations, and the Portugese starters have the lowest growth-expectations. Denmark is in the middle among the developed countries, with 47% of the others lower and 53% of the others having a higher mean growth-expectation of the starters. Among the Nordic countries, Danish starters have higher growth-expectations than starters in Finland and Sweden where expectations are seen to be extremely low; also Norway is lower than Denmark. In Iceland starters' growth-expectations are similar to the expectations among starters in Denmark. These estimates are consistent with those in another recent study, that counts high-expectation early-phase entrepreneurs relative

**Table 12.1**

**Starters' and owner-managers' mean growth-expectations in the five developed countries where highest, in the five where lowest, and in Denmark with its percentile rank.**

Starters		Owner-managers	
Czech Republic	3,3	Czech Republic	0,74
Latvia	2,7	Russia	0,62
Russia	2,2	Croatia	0,51
Slovenia	2,1	Latvia	0,48
Israel	2,1	Canada	0,41
...	...	...	...
Denmark	1,6 47 percentile	Denmark	0,24 50 percentile
...	...	...	...
Finland	1,3	Portugal	0,14
Australia	1,3	Taiwan	0,13
Spain	1,2	Netherlands	0,13
Sweden	1,2	France	0,10
Portugal	1,2	Greece	0,07

to all early-phase entrepreneurs (Erkko 2007), as used in the second table in Chapter 13.

The growth-expectations of owner-managers in each country can also be averaged, Table 12.1, right side. The owner-managers in the Czech Republic have the highest growth-expectations, and the Greek owner-managers have the lowest expectations. The Danish owner-managers have growth expectations in the middle among the developed countries, with 50% of the countries having lower expectations and the other 50% of the developed countries having higher expectations, on average among the owner-managers. Among the Nordic countries, the Danish owner-managers have growth-expectations that are a little above those in Iceland and much above those in Sweden, Norway and Finland, also consistent with the estimates found in another recent study (Erkko 2007), as used in Chapter 13.

Countries tend to be similar in their rank-order on the starters' expectations and on the owner-managers' expectations. If a country is high on one it is typically also high on the other, and if a country is low on one it is typically also low on the other. Indeed, across the countries, the correlation between the starters' expectations and the owner-managers expectations is 0,79.

In short, the Danish entrepreneurs have growth-expectations that tend to be higher than those of entrepreneurs in the other Nordic countries. Danish entrepreneurs are quite typical among the entrepreneurs in the developed countries, in that their growth-expectations are quite typical, neither especially high nor especially low, but in the middle.

# Chapter 13

## Boosting growth entrepreneurship in Denmark and other countries: How do we shape an appropriate entrepreneurship policy?

by *Torben Bager*

Aiming for more entrepreneurs does not by itself solve the problem of creating more growth oriented entrepreneurs and firms. Low-income countries serve to illustrate this point, as most of them have an impressive number of small-scale entrepreneurs, but lack growth-oriented entrepreneurs and firms. However, most people also agree that a pick-the-winner strategy is inappropriate in the field of entrepreneurship, due to high uncertainty and complexity, when firms are formed. Even in the venture capital field, which only deals with well-documented and tested projects and predominantly well-educated entrepreneurs, failure rates are high. Thus a realistic policy for growth-oriented entrepreneurship seems bound to search for a position somewhere in the middle, rejecting the poles of sheer number boosting as well as a pick-the-winner strategy. This article searches for this middle position based on recent entrepreneurship and policy studies in Denmark and other countries.

### **Two roads to more growth oriented entrepreneurs – illustrated by Nordic GEM-data**

GEM-data demonstrate significant variation among the five Nordic countries in terms of start-up activity and growth-oriented entrepreneurship. Compared the results demonstrate that two logical roads to more high-growth entrepreneurs in a country are possible: increasing the entrepreneurial activity level (with the share of growth-oriented

entrepreneurs unchanged) and increasing the share of entrepreneurs, who become growth oriented (with the entrepreneurial activity level unchanged).

Among the Nordic countries, Iceland has by far the highest entrepreneurial activity level and Finland the lowest, with Denmark, Norway and Sweden positioned in the middle. Iceland also has an extensive share of high-growth entrepreneurs (measured by expected number of employees in 5 years), but not higher than Denmark, and again Finland is positioned significantly lower than the other countries.

These results were reached by Professor Erkki Autio in a recent comparative study of the Nordic countries (Autio 2007b, Autio 2007a). The calculation was based on pooled GEM-data for the years 2000-2005. Two tables illustrate the points just made. In the tables, the vertical bars indicate 95% confidence intervals.

Table 13.1 compares the adult-population prevalence of high-expectation and high-growth entrepreneurs in the Nordic countries. High-expectation entrepreneurs are nascent and new entrepreneurs, who expect 20 or more employees within the next five years. High-growth entrepreneurs are established entrepreneurs (firm is more than 42 months old), who currently have 20 or more employees. Adult-population prevalence is defined as the high-expectation or high-growth entrepreneurs'

share of the general adult population (18-64 years old).

The prevalence of high-expectations is presented to the left, and the prevalence of high-growth to the right. We see that Iceland clearly depicts the most extensive high-growth orientation among the Nordic countries. Some 1.3% of the Icelandic working-age adults qualify as high-expectation entrepreneurs. For other Nordic countries this rate is significantly lower, from around 0.5% (Sweden) to 0.7% (Denmark). Finland's rate of high-expectation entrepreneurs was significantly lower than that of other Nordic countries, approximately 0.3%.

When comparing the prevalence rate of high-growth established entrepreneurs (right cluster in Table 13.1), a similar pattern emerges. Again, the Icelandic possess the most growth-oriented entrepreneurs, with an adult-population prevalence rate of 0.7% for high-growth established entrepreneurs. Denmark, Norway and Sweden

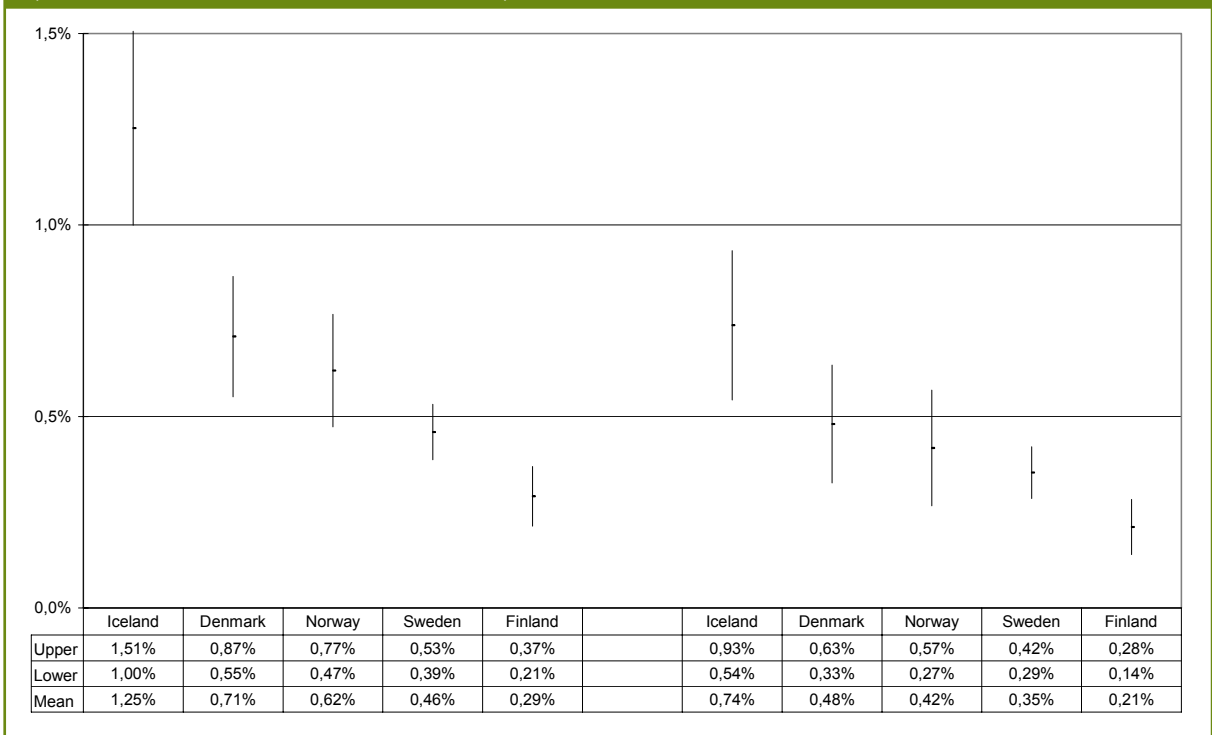
are approximately at the same level, with an adult-population prevalence of high-growth entrepreneurs of approximately 0.4%. Finland's rate of high-growth established entrepreneurs is again significantly lower, approximately 0.2%.

The analysis in Table 13.1 shows that high-growth expectations are quite well correlated with realized growth, at least in the Nordic context. If the rate of high-growth expectations is high, the rate of high-growth entrepreneurs will also be high.

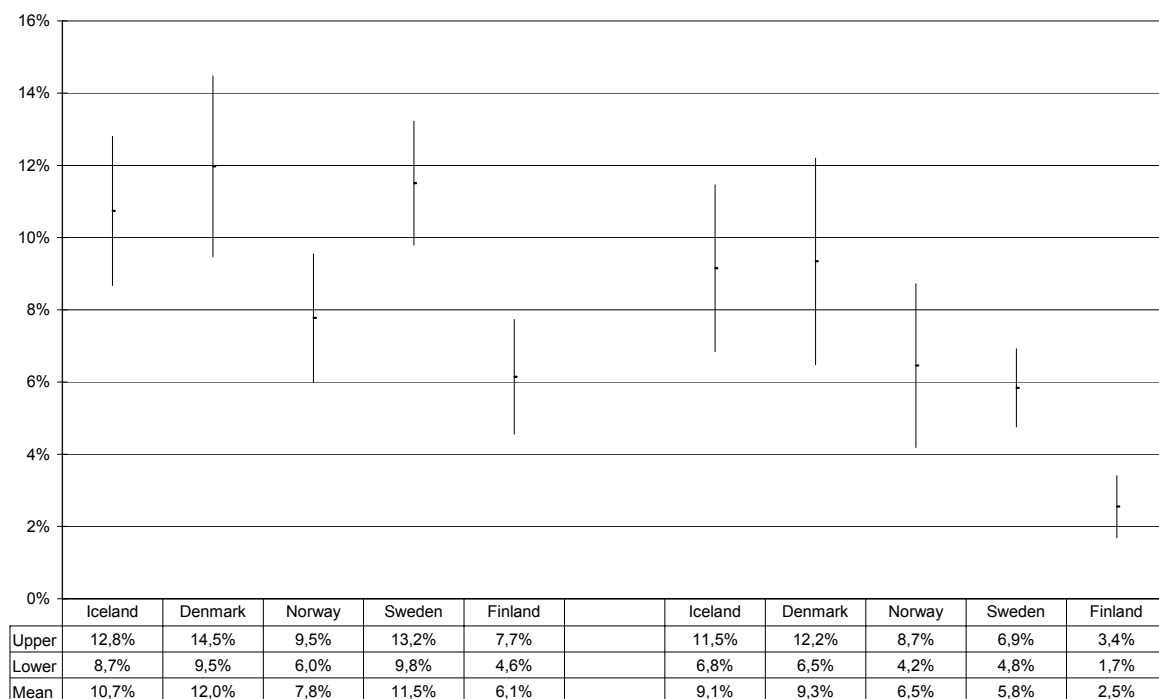
The differences among the Nordic countries are quite dramatic. Iceland's rate of high-expectation entrepreneurs is four times that of Finland, and Iceland's rate of high-growth entrepreneurs is over three times that of Finland.

Table 13.2 compares the anatomy of entrepreneurship in the Nordic countries. Anatomy of entrepreneurship is understood as the relative

**Table 13.1**  
**Adult-population prevalence of high-expectation (20 or more expected employees in the next five years; left) and high-growth entrepreneurs (20 or more current employees; right)**



**Table 13.2**  
**Anatomy of entrepreneurship; relative prevalence of high-expectation (left)**  
**and high-growth entrepreneurs (right)**



prevalence of high-expectation entrepreneurs among nascent and new entrepreneurs, and high-growth entrepreneurs among established entrepreneurs, respectively. Where the adult-population prevalence shows the general incidence of high-expectation entrepreneurs in the adult-age population, the relative prevalence shows the share of identified entrepreneurs that are growth-oriented. A country with a low adult-population prevalence of entrepreneurs may still enjoy a high relative prevalence of high-expectation entrepreneurs (i.e., healthy anatomy of entrepreneurship), if many of its entrepreneurs are growth-oriented.

Table 13.2 shows that Iceland’s high adult-population rate of high-expectation and high-growth entrepreneurs is due to its high overall rate of entrepreneurial activity. In fact, Iceland’s relative prevalence of high-growth expectation entrepreneurs is approximately at the same level as that of Denmark and Sweden. Norway depicts slightly lower relative prevalence

of high-expectation entrepreneurs along with Finland.

A similar pattern is repeated for the relative prevalence of high-growth entrepreneurs (right cluster in Table 13.2). Again, Finland stands out with its low relative prevalence of high-growth entrepreneurs. Finland’s relative prevalence of high-growth entrepreneurs is less than half that of Sweden and less than one third that of Iceland and Denmark.

These results illustrate the two logical roads to more growth-oriented entrepreneurship: 1) Lifting the entrepreneurial activity level (while preserving the share of high-growth entrepreneurs) and 2) lifting the share of high-growth entrepreneurs (while maintaining the entrepreneurial activity level). For Iceland the results suggest that the entrepreneurship-policy focus should be sharply on the latter, as the entrepreneurial activity level is already amongst the highest in the world. Finland’s situation is very

different, needing a policy that focuses on both aspects.

This line of argument underlines that entrepreneurship policy – even in countries with great similarity - needs to be shaped according to the specific situation in each country, rather than simply follow some overall start-up or growth guidelines for a group of countries, such as the developed ones (Klyver and Bager, 2007). The almost universal understanding among entrepreneurship and growth researchers that developed countries should predominantly focus on growth-oriented entrepreneurship rather than raising the general level of entrepreneurial activity is thus moderated by the specific situation in each country.

For Denmark, however, the policy situation is even more confusing due to conflicting results in GEM's survey based studies and studies based on registry analysis. GEM results in fact suggest that Denmark would gain more from boosting its general entrepreneurial activity level than from increasing its share of high-growth entrepreneurs, as it is already among the highest in the Nordic context. Nevertheless, in recent years the Danish Government's overall policy has been the opposite. The dominant policy focus is on introduction of new measures for growth-oriented entrepreneurship, i.e. screening, selecting and supporting potential high-growth entrepreneurs and firms, rather than supporting the many small-scale start-ups. This policy is backed by results based on a registry analysis of a number of European countries plus a few non-European countries (USA, Canada and Korea). For a number of years these data have consistently demonstrated that Denmark is performing well in terms of start-up, while lacking behind in terms of growth-performing entrepreneurs (Iværksætterindeks 2006). In these studies the Nordic countries (except Iceland, which is not included) perform at approximately the same level of growth-entrepreneurship performance, but significantly lower than some other European and non-European countries.

A possible explanation for these conflicting results is that the two data sets predominantly focus on different phases of the entrepreneurial process. GEM-data focuses on early stage growth expectations (contrasted realised growth in mature firms), while the registry-based analysis looks at the growth of young firms beyond 15 employees, i.e. firms that are max 4 years old in 2002 that have grown significantly from 2002-2004, and in their formative years have reached a level of minimum 15 employees. In other words, the registry-based analysis measures *continued* growth for young SMEs beyond a minimum of 15 employees, while GEM measures the share of all entrepreneurs that expect – or have reached – a minimum size of 20 employees. Thus these results are not necessarily conflicting. Finland may for example have a serious problem with early-stage growth entrepreneurship, but not with continued growth of young SMEs.

Nevertheless, these results create an unclear and more complex message to policy makers, who then have to prioritise, not only from volume- and quality-oriented entrepreneurship, but rather from three dimensions: 1) Lifting the general entrepreneurial activity level in the country, 2) lifting the share of early stage growth-oriented entrepreneurs and 3) lifting the share of young SMEs that continue to grow substantially after having passed the micro-firm size level in their formative years. For Denmark GEM-data suggest that the country should not ignore the overall start-up activity, particularly not measures for obtaining more growth-oriented entrepreneurs in the pipeline, while the registry analysis suggests that Denmark in particular should emphasize the continued growth of young SMEs, i.e. by supporting the very few in a start up population (much less than 1%), who demonstrate ability to grow beyond the micro-firm size.

### **Policy impact at various stages of the entrepreneurial process**

However, prioritising from these policy fields is not the only difficulty facing entrepreneurship-policy makers. An equally important question

is: What *can* be influenced by policy measures? If continued growth of young SMEs is selected as focal point for entrepreneurship policy, one must still consider, whether such firms in fact need support and are open to influence from outsiders. Perhaps they already know their field and capabilities well – or at least believe so – and usually have sufficient resources to fill knowledge gaps and expand. In that case they may be almost beyond the reach of entrepreneurship-policy makers and new policy initiatives.

Entrepreneurship research clearly suggests that early-stage entrepreneurs are more open-minded and volatile than later stage entrepreneurs, both concerning their role and their projects/firms (Davidsson, 2006). In the early stages both the human actor and the idea/project is in the making. Having decided to become an entrepreneur, many early-stage entrepreneurs start reflecting on what kind of entrepreneur they want to become in the future; and business ideas tend to float in the early stage as a result of – often surprising - responses from costumers, suppliers, etc. to the actions, services and products the entrepreneur exposes. This also applies to the extend to which early-stage entrepreneurs are or become growth oriented, with some un-ambitious entrepreneurs gradually gaining confidence and turning toward growth orientation, while ambitious entrepreneurs may turn away from it (Bager and Schøtt, 2004). In the more mature stages everything is more settled; the entrepreneur knows his or her role, the firm, the business field, etc. and has gained confidence in the ability to run and develop the firm in his or her own way. Thus the entrepreneurs are less open minded and more difficult to influence by policy measures.

Moreover, public funded policy measures aimed at well-off continued-growth entrepreneurs may be regarded as a fundamental mistake because there is no significant market failure to correct, whereas for early-stage entrepreneurs with limited track records and little resources one can argue for a number of market failures (Bager et al., 2005).

### **Growth-oriented versus knowledge-intensive entrepreneurship**

Some view growth-oriented and knowledge-intensive entrepreneurship as two sides of the same coin. However, they are not.

Knowledge-intensive entrepreneurship is often small-scale. In developed countries a significant proportion of highly educated people create small firms, where they sell knowledge-based services. In this way they contribute to the creation of new products and methods for the growing and knowledge-intensive firms, thus they belong to knowledge-intensive entrepreneurship. In fact, a dense network of small-scale knowledge-intensive firms is a feature found in all dynamic, entrepreneurial economies.

On the other hand, many traditional firms, e.g. in the building or cleaning industries, grow significantly without actually contributing with anything new to the market. They contribute jobs, but contribute little to a knowledge and innovation driven economy.

If long term knowledge-intensive entrepreneurship is the important factor in a developed economy, as some argue (Audretsch, 2006), then involvement of highly educated people in the entrepreneurial economy is important and policy measures aimed at universities and colleges the core. During their study period more students must be involved in mind-setting activities and educated and trained in entrepreneurship topics as well as be exposed to idea-generating and project-based study forms. In this policy field broadly ranged activities aiming at boosting start-up activities cannot be separated sharply from growth-oriented activities. Mind-setting activities, idea-generation training, etc. are the basis for both small-scale and growth-oriented entrepreneurial activity.

### **Supporting winners in practice – experiences from 10 countries**

The key problem related to a picking-the-winners strategy is that winners are easy to find ex post but not ex ante. And it is in the early stages that they need support.

In practice, winners are in fact not picked through growth-oriented entrepreneurship policies. What we see is rather supporting-potential-winners policies and measures in Denmark and other developed countries (Autio et al., 2007). Potential winners count several more persons than those that are the final winners. They are hard to identify, so step-wise selection is important, starting with a broad range of entrepreneurs and gradually narrowing the group down as some of them fail to enter a growth process.

Most growth-oriented policy measures are in fact general in nature (e.g. related to finance and taxation) or infrastructural (e.g. enhancing commercialisation from universities and high-tech innovation). While these measures are important, they do not intervene directly in the motivation and skill process of potential growth entrepreneurs. In a GEM-survey of high-growth support initiatives in 9 countries (Australia, Brazil, Finland, Hong Kong, Hungary, Italy, the Netherlands, Spain and the UK) Erikko Autio and colleagues conclude that:

“In spite of recent interest, the initiatives focusing explicitly and exclusively on high-growth firms were surprisingly few. It is perhaps not a coincidence that those cases were reported in the more ‘mature’ policy-making contexts, such as United Kingdom, the Netherlands, and Finland” (Autio et al., 2007, p. 71).

The report also observed a number of other weaknesses, when looking at this total of 47 high-growth policy initiatives in 9 countries:

- Cooperation between private and public institutions is rare, although it is imperative to involve private-sector participation, particularly in the later stages of the venturing and growth process.
- Tendency is towards over-emphasis on technology sectors, with many initiatives subscribing to the notion that rapid growth is most likely for technology-push situations,

and production of new technologies is the key for economic success.

- None of the initiatives were specializing in knowledge-intensive services and generally there tends to be neglect of the business services’ importance.
- There is strong focus on universities and HEIs although it is rare to start high-growth firms directly upon graduation.

The report concludes that while focus on venture industry support and technology driven innovation is justified,

“It does leave several important areas insufficiently covered. The small number of dedicated high-growth policy initiatives, as well as the apparent lack of coordination across policy departments, suggest that much remains to be done in order to develop effective and far-reaching policy initiatives for supporting high-growth entrepreneurial activity.” (Autio et al., 2007, p. 74)

A similar policy report organised by the Danish GEM-team on high-growth initiatives in Denmark reached a similar conclusion (Korsgaard et al., 2005). The report looked at five policy initiatives: 1) Vækstfonden (The Danish Investment Fund), 2) Innovationsmiljøerne (Innovation incubators), 3) NOVI (one of seven innovation incubators), 4) Born Global and Born Creative (Government initiative to internationalise high-tech and high-creative firms) and 5) Start og Vækst (a regional, public funded advisory agency). From these 5 initiatives only no. 4 is aiming explicitly and directly at high-growth entrepreneurs, while the others are more indirect measures, attempting to strengthen the financial and technological infrastructure, particularly for high-tech entrepreneurs, and provide advisory services of a more general nature.

### **Creating a balanced high-impact entrepreneurship policy in Denmark**

Three balances seem important in the entrepreneurship-policy field:

- The balance between start-up policies and high-impact policies
- The balance between high-growth and knowledge intensive policies
- The balance between high-impact policies aimed at the starting phase, the early growth phase and the continued growth phase

**Figure 13.1 and 13.2 illustrate these balances**

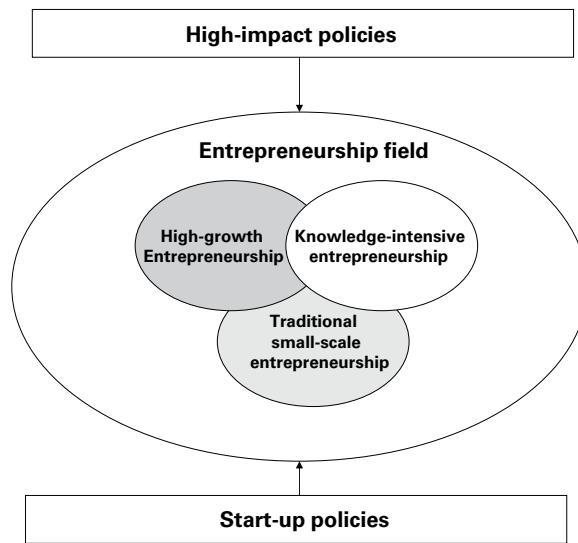
Figure 13.1 illustrates the two first mentioned balances, of which we in this article predominantly focus on the balance between high-growth and knowledge-intensive policies. Figure 13.2 illustrates selected high-impact policy measures along the phases from starting to continued growth.

**All three phases are important**

The *starting phase* is important to get more people into the pipeline and qualify their ideas and plans with the aim of enhancing survival and growth rates. The starting phase is important, whether it leads to a growing firm or just results in a knowledge-intensive small-scale firm. Any picking-the-winner strategy seems in vain here, and even a supporting-the-winner strategy is extremely difficult, simply because winners are so difficult to identify in the early stages. Only in the technology driven field is this to some extent applicable since obtaining a patent is a way of qualifying a potential winner, but most high-impact venturing is not high-tech. Advanced technology is usually applied to build such firms, but the core of the business idea is in most cases not technological and cannot be protected through patents. Thus what is needed in this phase is a quite open approach that aims at getting as many on board as possible, even at a young age during the study years in order to influence students’ motivation for entrepreneurship and train enterprising behaviour, idea generation, business plan-formulation, etc., i.e. some of the skills needed when they some day, in most cases 5-15 years later, decide to start a high-impact firm.

The *early growth phase* is also very important. Once the firm is off the ground, while still very

**Figure 13.1: Policies influencing the entrepreneurship field**



volatile, chances of influencing growth ambitions are high and policies can compensate for some weaknesses in young firms such as: entrepreneurs lacking managerial skills, seed capital, knowledge of the business field they are in, access to cheap specialised advisors and professional and peer networks that can give them cheap and reliable support and access to potential costumers. In this phase winners are still not easy to detect as many have to change their ideas radically when confronted with costumers and competitors, or realise that they do not possess the managerial skills – and sometimes also motivation - needed to grow a firm. The number of potential high-growth entrepreneurs remains fairly high, although the majority of high-impact starters are sorted out within the first year as they either close down or abstain from growing beyond the self-employment level.

The *continued growth phase* is very important for job creation and formation of new powerful and often international firms in a region or a country. Here a supporting-the-winner strategy makes sense in that winners have already proven their ability to reach a size beyond the micro-firm level. They may well also need financial and advisory support to continue the growth process, e.g. by expanding beyond

**Figur 13.2**

**Policy measures for the starting, early growth and continued growth phases.**

<b>Starting Phase</b>	<b>Early Growth Phase</b>	<b>Continued Growth Phase</b>
<b>Policy Measures:</b>	<b>Policy Measures:</b>	<b>Policy Measures:</b>
Motivating students	Provision of seed capital	Provision of venture & angle capital
Training students	Mentor arrangements	Mentor arrangements
Supporting academic entrepreneurship	Physical and virtual networking	Physical and virtual networking
Creating incubators	Managerial training	Supporting internationalisation
Ensuring IP	Access to specialised advisors	

national markets. The number of firms that reach this level is quite low, and many of them do not need any support at all to continue to grow, at least not support organised by public bodies. Often public support in this field has to be channelled through public-private collaboration that needs to be un-bureaucratic, action oriented and flexible.

As all three phases are important, it is difficult to prioritise. However, an argument for emphasising the first phase more than the second phase, and the second phase more than the third is that the need for public support is particularly high here as market failures are more severe in the early stages. Moreover, prioritising the first phase is also well in line

with consistent results from the Danish GEM-research for the last nine years that demonstrate the need for more Danish entrepreneurs in the pipeline, and in particular more high-impact and well-educated entrepreneurs.

The importance of the first phase has recently been underlined through international research based on GEM-data. Seven years of GEM-results from more than 50 countries demonstrate that the only framework condition, out of GEM's nine framework conditions, which has significant impact on high-growth expectancy entrepreneurship, is the national levels of entrepreneurship education and training (Levie and Autio, 2007).

# Chapter 14

## Conclusions

The analyses in the preceding chapters lead to a series of conclusions, first about entrepreneurship in general and then about growth-entrepreneurship in particular.

### **Entrepreneurial activity in Denmark: Trends and comparisons to other countries**

*How high is the level of entrepreneurial activity in Denmark compared to other countries? Is the trend stable, or upward or downward? (Chapter 3).*

The level of early-phase entrepreneurial activity, as a rate or prevalence in the adult population in Denmark, is today about the typical for developed countries. Indeed, for several years, Denmark has been in the middle among the developed countries. In recent years there has been a considerable increase in new businesses accompanied by a decline in discontinuations, resulting in an increase in the stock of existing businesses. However, during the same recent years, the attempted startups have been stagnant, and intentions among people to start new businesses have been declining.

### **Framework conditions shaping entrepreneurship in Denmark and other countries**

*How are the framework conditions shaping entrepreneurship and growth in Denmark compared to other countries? (Chapter 4).*

In recent years most of the framework conditions have tended to become more favorable and are now more favorable today than they were just a few years ago. A few of the framework conditions seem to be stable, without becoming more favorable or becoming less favorable. None of the framework conditions are worse today than they were a few years earlier. So, on the whole,

the framework for entrepreneurship is more favorable today than a few years ago.

Most of the Danish framework conditions are rather close to the typical situation for developed countries, and rank around the middle among the developed countries. A few conditions are much more favorable in Denmark than typical among the developed countries. Conversely, a few conditions are much less favorable in Denmark than typical among the developed countries. So, on the whole, the framework in Denmark is about as favorable as the typical for the developed countries.

Both the cultural and the institutional framework conditions greatly promote entrepreneurial activity in discernible ways, cultural conditions enhance the entrepreneurial skills of the population and basic institutional conditions create opportunities for the population to bring their skills into entrepreneurship.

Denmark has a level of entrepreneurship that is about typical for the developed countries and a framework that is about typical. This is easily understood. When a country has a framework that is typical, then we also expect the resulting level of activity to be typical.

### **Size attained by firms in Denmark**

*What growth has been attained by firms in Denmark? That is, how big are the firms? How is the attained size of firms dependent on their age? How is the attained size dependent on the entrepreneur, specifically on the entrepreneur's gender, education, and entrepreneurial attitudes? (Chapter 5).*

Size attained by firms depend on their age and on several characteristics of their owner-managers,

directly by gender and graduation from secondary school and indirectly by further education that affect their networking which in turn seems to promote growth in size. Size is also enhanced by the skills, risk-willingness and opportunity-recognition of the owner-manager which are shaped by their gender, age and schooling.

### **Size expected in startups and in firms in Denmark**

*What future size do entrepreneurs expect in their startups and firms in Denmark? Are their ambitions modest or high, perhaps even higher than can realistically be attained in the future? (Chapter 6).*

Entrepreneurs have expectations that are very high, and starters have expectations that are extremely high. The expectations tend to be higher than what is realistic. There has even been a historical rise in recent years in the expectations of starters, today's starters have higher expectations than those of starters a few years earlier. Likewise, nowadays owner-managers have higher expectations than those of owner-managers earlier.

### **Growth expected in startups and in firms in Denmark**

*What future growth do entrepreneurs expect in their startups and firms in Denmark? More precisely, what is their expected net growth, relative to the present size of the firms? How is the entrepreneurs' expectation for future growth shaped by their personal characteristics such as gender, education, and entrepreneurial attitudes? (Chapter 7).*

Starters have far higher expectation than owner-managers for future growth, relative to current size. For both kinds of entrepreneurs, expectations are shaped to notable extent by their personal characteristics, both background and entrepreneurial characteristics formed later in life. Starters' and entrepreneurs' growth-expectations are enhanced by being male, skilled, networking, risk-willing and opportunity-recognizing, and their background in terms of gender, age, schooling and further education

also have indirect effects upon their expectations.

### **Creation of jobs expected in Denmark**

*What future creation of jobs do the entrepreneurs expect in Denmark? What is the sum of the expectations of the entrepreneurs in the country? Is their expressed expectation to be understood as their realistic forecast of the labor market, or is it better understood as a high ambition. Which group of entrepreneurs is mainly behind this collective growth-expectation, forecast or ambition – is it the starters, the new-business owner-managers, or the established-business owner-managers? (Chapter 8).*

The individual entrepreneurs' expressed expectations of change in number of jobs within each firm add up to a collective expectation of the creation of jobs in the country in five years. The Danish entrepreneurs' collective expectation add up to an amount that is about the size of the current work force and thus would amount to doubling the work force. Their collective expectation is not a realistic forecast but is it better understood as their ambition. The group of entrepreneurs that is mainly behind this collective growth-expectation or ambition is neither the new-business owner-managers nor the established-business owner-managers, but is the starters, especially the highly ambitious starters.

### **Growth-starters' funding**

*Does funding of growth-entrepreneurship differ from funding of non-growth-entrepreneurship, in amount and in sources? Is growth-entrepreneurship predicted to yield paybacks that come especially slow or fast? Is growth-entrepreneurship predicted to yield returns that are especially meager or manifold? (Chapter 9).*

Growth-entrepreneurship tends to require especially large funding, much funding comes from the entrepreneurs themselves, and much funding comes from others, especially from banks and public sources, but rarely from family. Growth-entrepreneurs do not predict payback to be especially fast or especially slow, compared to more ordinary entrepreneurship,

but they tend to predict an especially high return.

### **Coupling between growth-entrepreneurship and innovation**

*Does growth-entrepreneurship go hand-in-hand with innovation, as a weak or strong coupling, within startups and existing firms? (Chapter 10).*

For the entrepreneurs in both the startup phase and in the operation-phase, innovativeness and growth-expectations tend to go hand-in-hand, as a positive coupling. Their coupling, though, is weak within existing firms and stronger within startups.

### **Coupling between growth-entrepreneurship and exporting**

*Does growth-entrepreneurship go hand-in-hand with exporting, as a weak or strong coupling, within startups and existing firms? (Chapter 11).*

For the entrepreneurs in both phases, export and growth-expectations tend to go hand-in-hand and are positively coupled. Their coupling, though, is weak within existing firms and stronger within startups.

### **Growth-expectations of entrepreneurs in Denmark compared to other countries**

*How does Denmark compare to other countries in growth-entrepreneurship? Is Denmark similar to other countries, or above or below, in expectations for growth? (Chapter 12).*

The Danish entrepreneurs are typical among the entrepreneurs in the developed countries, in that their growth-expectations are quite typical, neither especially high nor especially low, but in the middle. In comparison to the the Nordic countries, though, Danish entrepreneurs' growth-expectations are quite high.

### **Policy promoting growth-entrepreneurship**

*What policy is likely to promote growth-entrepreneurship? (Chapter 13).*

It seems impossible to predict, with reasonable precision, who will grow. Indeed, the analysis

of conditions affecting growth as attained by owner-managers (Chapter 5) did indeed find several factors affecting growth, but their effects are rather small, and therefore cannot be used reasonably well to predict who will grow. So a policy aimed at predicting the winners is not feasible. Given that Danish starters are highly ambitious, and even more ambitious than typical in the Nordic countries, even if only typical among the developed countries more broadly, the volume of growth-entrepreneurship is more likely to be enlarged by boosting the overall volume of entrepreneurship in the country. This policy consideration becomes even more pertinent when our leading indicators of entrepreneurship show decreases in recent years. Specifically, the intentions among adults to start a business in the foreseeable future have been declining in recent years, and attempts at starting seem stagnant (Chapter 3). These leading indicators of future startups makes it even more pertinent for policy-makers to consider focusing policy toward increasing people's interest in entrepreneurship and to boost the prevalence of entrepreneurial activity in the population.

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