

Measuring Business Ownership Across Countries and Over Time: Extending the COMPENDIA Data Base

André van Stel
Jerzy Cieslik
Chantal Hartog

Zoetermeer, August 2010



This research has been partly financed by SCALES, SScientific Analysis of Entrepreneurship and SMEs (www.entrepreneurship-sme.eu)

EIM Research Reports

reference number	H201019
publication	August 2010
number of pages	61
email address corresponding author	ast@eim.nl
address	EIM Bredewater 26 P.O. box 7001 2701 AA Zoetermeer The Netherlands Phone: +31(0)79 343 02 00

All the EIM research reports are available on the website www.entrepreneurship-sme.eu.

The responsibility for the contents of this report lies with EIM bv. Quoting numbers or text in papers, essays and books is permitted only when the source is clearly mentioned. No part of this publication may be copied and/or published in any form or by any means, or stored in a retrieval system, without the prior written permission of EIM bv. EIM bv does not accept responsibility for printing errors and/or other imperfections.

Measuring Business Ownership Across Countries and Over Time: Extending the COMPENDIA Data Base

André van Stel^a, Jerzy Cieslik^b and Chantal Hartog^a

^a EIM Business and Policy Research, Zoetermeer, the Netherlands

^b Kozminski University, Warsaw, Poland

Abstract:

Since several years EIM Business and Policy Research maintains a data base on business ownership rates across OECD countries, called COMPENDIA (COMParative ENtrepreneurship Data for International Analysis). EIM harmonizes raw numbers of business owners (self-employed), as published in the *OECD Labour Force Statistics*, towards a uniform definition. We define the business ownership rate as the number of owner-managers of unincorporated and incorporated businesses, as a fraction of the total labour force. Until recently, data in COMPENDIA were published for a group of 23 OECD countries, starting from 1972 onwards. However, in the most recent version of the data base time series for seven additional countries have been introduced for the first time, so that the COMPENDIA data base now covers 30 OECD countries. The current paper makes four contributions. First, we provide an update of the methodology used to harmonize business ownership rates across countries. In doing so, as a second contribution, we provide two extended country cases (Poland and the United States) which illustrate the many methodological pitfalls that have to be dealt with when measuring the number of business owners. Third, we present business ownership time series for 30 OECD countries including the new countries in our data base: Czech Republic, Hungary, Korea, Mexico, Poland, Slovak Republic, and Turkey. Fourth and finally, we pay considerable attention to the sizable differences in the level and development of business ownership since 1989 in four Central and East European transition economies in our data base: Czech Republic, Hungary, Poland, and Slovak Republic.

Keywords: harmonizing data, business ownership, self-employment

JEL-codes: C82, L26

Corresponding author: André van Stel, ast@eim.nl

Version: August 2010

Document: Van Stel, Cieslik & Hartog v5.doc

Acknowledgement: The paper has been written in the framework of the research program SCALES, carried out by EIM and financed by the Dutch Ministry of Economic Affairs.

Contents

Introduction	5
PART I: Harmonization methods used in Compendia	8
I.1 Definitions and main data source	8
I.2 Harmonizing self-employment data in COMPENDIA	10
I.3 Measuring business ownership and total labour force in seven newly included OECD countries	15
I.3.1 Czech Republic	15
I.3.2 Hungary	16
I.3.3 Korea	17
I.3.4 Mexico	17
I.3.5 Poland.....	18
I.3.6 Slovak Republic	19
I.3.7 Turkey.....	19
PART II: Measuring business ownership in Poland and the United States	21
II.1 Measuring business ownership in Poland	21
II.1.1 Introduction	21
II.1.2 National Official Business Register (REGON)	22
II.1.3 Business enterprise surveys.....	23
II.1.4 Measuring self-employment in the LFS.....	24
II.1.5 The reconciliation of the LFS and enterprise survey data on business ownership.....	25
II.1.6 Conclusions.....	27
II.2 Measuring business ownership in the United States	31
II.2.1 Unincorporated Self-Employed	31
II.2.2 Incorporated Self-Employed.....	32
II.2.3 Total Number of Self-Employed.....	35
PART III: Business ownership rates in 30 OECD countries, 1972-2008.....	37
III.1 Non-agricultural business ownership rates for 30 OECD countries	37
III.2 Agricultural business ownership rates for 30 OECD countries.....	41
III.3 Business ownership rates in total private sector for 30 OECD countries	43
PART IV: Business ownership in four CEE transition economies, 1989-2008.....	45
IV.1 Introduction.....	45
IV.2 Trends in business ownership rates 1989 – 2008	45
IV.3 Explaining the differences in business ownership under transition.....	47
IV.4 Conclusion	53
Concluding remarks	54
References	55

INTRODUCTION

Entrepreneurship is widely considered to be very important for achieving economic progress. Therefore, in many countries policy makers aim at increasing the number of entrepreneurs. Of course, when designing such policies, decision makers need to be informed about the number of entrepreneurs already present in their country and how this number relates to the number of entrepreneurs in other countries. Surprisingly though, cross-country data bases on the number of entrepreneurs are not widely available (OECD, 2008, 2009a). Two well-known data bases are the Global Entrepreneurship Monitor (GEM) data base and the World Bank Group Entrepreneurship Survey (WBGES) data base.¹ Both data bases measure different aspects of entrepreneurship across a wide range of developed and developing countries. While GEM measures the number of early-stage entrepreneurs including both the formal and informal sectors of economy, WBGES measures the number of formal business registrations of limited liability corporations (Acs, Desai and Klapper, 2008). Both data bases cover relatively short and recent time spans, where data always refer to years in the 21st century.

The present paper deals with a third cross-country data base available to researchers and policy makers: EIM's COMPENDIA data base. This data base captures a yet different aspect of entrepreneurship, viz. the extent of incumbent self-employment (business ownership) in an economy. This measure is available since the early 1970s for a wide range of (developed) countries. Self-employment is most often used to operationalize entrepreneurship in a country, largely because it is measured in most countries, and measured in relatively comprehensive ways (Blau, 1987). But even so, cross-country comparability is far from straightforward. The numbers of self-employed reported in *OECD Labour Force Statistics* – the original source of raw data for COMPENDIA – are not comparable across countries as each country supplies numbers according to its own self-employment definition. In particular, the extent to which owner-managers of incorporated businesses (OMIBs) are included in the self-employment counts differs across countries.

Since many years, EIM maintains an international data base with self-employment (business ownership) numbers for 23 OECD countries that *are* comparable across countries. The 23 countries are the 15 countries of the (former) European Union plus Iceland, Norway, Switzerland, the United States, Japan, Canada, Australia and New Zealand. The data base is called COMPENDIA, an acronym for COMParative ENTrepreneurship Data for International Analysis. The data base currently contains numbers for the period 1972-2008, and is updated every year.² The business ownership definition used in COMPENDIA includes owner-managers of both unincorporated and incorporated businesses but excludes unpaid family workers. Following statistical convention, our definition also excludes so-called 'side-owners' (self-employment as a secondary activity). For countries not following the COMPENDIA definition in OECD Labour Force Statistics, we make corrections to arrive at an estimate for the number of self-employed persons according to the chosen definition. By now, the COMPENDIA data base has been widely used and acknowledged (see, among other studies, Armour and Cumming, 2008, Carree et al., 2002, 2007, Koellinger and Thurik, 2009, Nyström,

¹ We refer to Reynolds et al. (2005) and Klapper et al. (2007) for descriptions of these two data bases.

² In earlier times COMPENDIA contained data for even years only and was updated every two years.

2008, and Van Praag and Van Stel, 2010). The data base is available at www.entrepreneurship-sme.eu.

The construction and maintenance of the COMPENDIA data base addresses a call for new international data bases on entrepreneurship, as expressed by OECD and Eurostat in their joint *OECD-Eurostat Entrepreneurship Indicators Programme (EIP)*. The aim of this programme is to collect and construct internationally comparable data on entrepreneurship (OECD, 2008, 2009a). While at present the EIP mainly focuses on firm-based indicators of entrepreneurship, and more specifically on ‘employer enterprises’ (see OECD, 2009a, p. 8, and Ahmad and Hoffmann, 2008), the importance of labour market based indicators such as the number of business owners in the labour force is also acknowledged by the EIP (see Davis, 2008, p. 54).³ In fact, the COMPENDIA data base is complementary to the indicators currently highlighted in the EIP in several respects. First, while employer firms are undoubtedly very important since they create jobs, employer firm based indicators do not capture the large and increasing numbers of solo self-employed working independently to earn their own living (Wennekers et al., 2010).⁴ Second, while the current EIP publications (i.e., OECD, 2008, 2009a) strongly focus on cross-country differences in entrepreneurship in recent years, the COMPENDIA data base covers a long period of time (1972-present), allowing researchers to place recent developments in entrepreneurship in a historical context. Third, as mentioned, while at present EIP mainly focuses on firm-based statistics, COMPENDIA uses a labour market indicator of entrepreneurship. These starting points are very different, as one firm may have more than one business owner, and vice versa (see Van Stel, 2003, pp. 23-24, for a more detailed discussion).

The present paper makes several contributions to the literature. *First*, we provide an update of the methodology used to harmonize business ownership rates across countries.⁵ In doing so, as a *second* contribution, we provide two extended country cases (Poland and the United States) which illustrate the many methodological pitfalls that have to be dealt with when measuring the number of business owners. *Third*, we present business ownership time series for 30 OECD countries including seven new countries in our data base: Czech Republic, Hungary, Korea, Mexico, Poland, Slovak Republic, and Turkey. For these seven countries the data period is actually shorter than for the original 23 countries. For instance, for most Central and East European countries, self-employment was not measured under communism, and hence the data series start only in 1989. *Fourth* and finally, we pay attention to the sizable differences in the level and development of business ownership since 1989 in four Central and East European (CEE) transition economies in our data base: Czech Republic, Hungary, Poland, and Slovak Republic.

The organization of this paper is as follows. In Part I, we discuss the self-employment (business ownership) definition used in COMPENDIA. We also discuss the raw data on self-employment published in OECD Labour Force Statistics, as well as the general

³ Both Davis (2008, p. 54) and Parker (2008, pp. 10-11) stress the importance of harmonising the self-employment data from OECD Labour Force Statistics.

⁴ In fact, an important future development of the COMPENDIA data base should be the construction of separate numbers of business owners with employees (employers) and business owners without employees (solo self-employed or own-account workers).

⁵ See Van Stel (2003, 2005) for earlier documentation.

method that is used for each country to correct these raw data. This part also pays detailed attention to the construction of the business ownership time series for the seven new countries in the data base. As an illustration of the many data problems that may arise when constructing a time series on the number of business owners, Part II discusses in detail the construction of the COMPENDIA time series for Poland and the United States. Part III then presents the business ownership rates for the 30 countries and provides some explanation on general trends in business ownership that can be observed across countries. Part IV provides more detailed explanation on business ownership trends since 1989 in four Central and East European transition economies. We end the paper with some concluding remarks.

PART I: HARMONIZATION METHODS USED IN COMPENDIA

I.1 Definitions and main data source ⁶

In this section we describe the self-employment (business ownership) definition used in COMPENDIA, *i.e.*, which groups of workers are included in the self-employment count? We also mention the sector classification used in COMPENDIA and we give a short overview of harmonization problems that have to be solved. Finally, we describe how business ownership data are scaled in COMPENDIA, to arrive at comparable figures across countries. We start this section with a description of self-employment data in OECD Labour Force Statistics.

Self-employment data in OECD Labour Force statistics

OECD Labour Force Statistics (abbreviated as LFS) forms the basis for our data set on the number of self-employed per country. In this annual publication, in the chapter Country Tables, for every country there is a table called ‘Professional status and breakdown by activity’. In this table, total employment is divided in three professional statuses: a) employees, b) employers and persons working on own account, and c) unpaid family workers. In principle, we use the category ‘employers and persons working on own account’. At all events, this category includes all *unincorporated* self-employed individuals (sole proprietors and partners). However, as far as *incorporated* self-employed are involved (owner-managers of incorporated businesses), there is a uniformity problem. In some countries they are counted as self-employed and in other countries they are counted as employee. The latter case may prevail because formally, owner-managers of incorporated businesses are employees of their own businesses. The different statistical treatment of incorporated self-employed in different countries forms the main harmonization problem to be dealt with in COMPENDIA, and we will discuss this problem in detail in Section I.2.

In LFS, professional status applies to the *primary activity* of a person. For example, a person who works as an employee in some business for four days a week, and runs his own business for one day a week (*i.e.*, the person is self-employed as *secondary activity*) is counted in the a)-category rather than in the b)-category mentioned above.⁷ In other words, the data in the professional status classification in LFS relate to the main job. In COMPENDIA, we follow this practice and we exclude the so-called side owners (*secondary activity*) from our self-employment count.

Which groups of workers are included in COMPENDIA?

In constructing a data set on numbers of self-employed, we have to decide which groups of workers are included in the self-employment count, and which are not. In particular, we have to deal with the following two borderline cases: unpaid family workers and owner-managers of incorporated businesses. In some studies, these groups of workers are counted as self-employed, and in other studies they are counted as

⁶ This section is derived from Van Stel (2005).

⁷ The minimum weekly amount of time that a person has to work in order to be included in the LFS is one hour (OECD 2002, pp. xi-xii).

employees. As regards unpaid family workers, we consider these workers not relevant for measuring the extent of ‘entrepreneurship’. These people do not own the business they work for, and thus do not bear responsibility and risk in the same way as ‘real’ self-employed individuals do. We exclude this group of workers from our self-employment count. As regards owner-managers of incorporated businesses, we do consider this group as highly relevant, because in an ‘entrepreneurial’ sense, this group is not essentially different from the unincorporated self-employed. We include the incorporated self-employed in our self-employment definition.

Which sector classification is used in COMPENDIA?

In LFS, the employment status division is applied separately for the agriculture, hunting, forestry and fishing industries on the one hand and the ‘non-agricultural activities’ on the other hand.⁸ This two-sector classification is also used in COMPENDIA. The agricultural industries are structurally different from the rest of the economy, in that self-employment is the natural employment status in these industries. In this paper, we mainly concentrate on the number of self-employed in the non-agricultural industries. However, the number of self-employed in agriculture is dealt with as well, in Section III.2.

Summarizing, the following self-employment (business ownership) definition is used in COMPENDIA: *the total number of unincorporated and incorporated self-employed, who carry out self-employment as their primary employment activity.* In COMPENDIA these numbers are collected separately for the agricultural and non-agricultural industries. We use the terms business owners and self-employed interchangeably, to indicate that we also include owner-managers of incorporated businesses in our self-employment notion.

Harmonizing the OECD Labour Force Statistics data

In constructing a harmonized data set for the number of business owners across countries and over time, two types of comparability problems can be identified. The *first* problem involves comparability across countries, *i.e.*, different countries using different self-employment definitions. Having chosen a self-employment definition to be used in our data set COMPENDIA, we have to adjust the raw LFS data for those countries which use a different definition in LFS. The corrections that we apply mainly involve corrections for the numbers of incorporated self-employed in certain countries. We aim at applying the same method for each country to ensure comparability. This general method is described in Section I.2. The *second* problem involves comparability over time, *i.e.*, the occurrence of trend breaks in LFS. A trend break may occur if the set-up of the labour force survey in a country changes from a certain year onwards. Also changes in self-employment definitions over time or changes in industrial classifications may introduce trend breaks. These trend breaks are corrected for in COMPENDIA and, for the 23 countries originally included in COMPENDIA, these are described in detail in Van Stel (2003). For the seven newly included countries, they will be described in Section I.3.

Scaling the business ownership data

⁸ The ‘agricultural industries’ are thus defined to include agriculture, hunting, forestry and fishing.

In order to compare self-employment figures across countries in a meaningful way, some form of scaling must be applied. A common scaling variable is the size of the labour force. In COMPENDIA, the number of self-employed (business owners) in a country as a fraction of total labour force is indicated as the country's business ownership rate. Total labour force consists of employees, self-employed persons (including OMIBs), unpaid family workers, people employed by the Army and unemployed persons. Data on total labour force are also obtained from OECD Labour Force Statistics. For this variable, comparability problems of the raw LFS figures across countries and over time occur less often than for the variable self-employment. However, in some cases, corrections were still needed, and these are described in Van Stel (2003).

I.2 Harmonizing self-employment data in COMPENDIA⁹

In this section we give a general description of the data collection and data construction of the number of business owners for all 30 countries in the data base, for the period 1972-2008. As mentioned, our business ownership definition includes unincorporated self-employed as well as owner-managers of incorporated businesses (OMIBs). In this section we focus on business ownership in the non-agricultural industries. Our starting point is formed by the numbers reported in OECD Labour Force Statistics. At all events, these numbers include all unincorporated self-employed. However, the extent of inclusion of OMIBs in the reported numbers varies per country, due to different set-ups of labour force surveys in different countries. This involves issues as whether the classification in employment status categories is done by the interviewer or by the respondent, the degree of guidance that is given by the interviewer on the term 'self-employment', the number of categories which respondents can choose from, etcetera. For details on these labour force surveys, see OECD (2000), Annex 5A.

Estimating the 1994 level of the number of OMIBs

The countries thus differ in the extent to which OMIBs are included in the official statistics. In *OECD Employment Outlook June 2000*, p. 158, countries are categorized in five types as regards the inclusion of OMIBs in OECD Labour Force Statistics:

- 1) excluding (all) OMIBs,
- 2) classification of OMIBs is unclear,
- 3) including (all) OMIBs,
- 4) including most OMIBs,
- 5) excluding most OMIBs.

Our desired definition is the third one: including (all) OMIBs. For countries not following this definition, *i.e.*, those countries which are categorized as 1), 2), 4), or 5), we make an estimation of the number of OMIBs in 1994 using the following procedure.

⁹ This section is an update of the corresponding section in Van Stel (2005).

Estimation procedure for European countries in COMPENDIA¹⁰

We use as the total number of business owners (unincorporated as well as incorporated self-employed) the maximum of

- a) the reported number of self-employed in OECD Labour Force Statistics 1981-2001, and
- b) the number of ‘non-primary private enterprises’ with less than 50 employees, from the data base that is constructed in the framework of *The European Observatory for SMEs: Sixth Report* (KPMG/ENSR 2000).¹¹ This data base is largely based on the Eurostat publication *Enterprises in Europe*, which contains harmonized information for the 18 European countries in our COMPENDIA data set on (among other variables) the number of enterprises, by industry and size-class.

We use the number of enterprises with less than 50 employees because in larger companies the manager often does not have the control. Formally, this control rests with the shareholders. A second reason for not including *all* firms in the estimated number of business owners is that not all firms are independent. Dependent firms (subsidiary companies) by definition are not linked to self-employed individuals. By using the number of enterprises smaller than 50 employees, we do not take account of the fact that partnerships have more than one self-employed individual, and on the other hand, that individuals can have more than one corporation or that individuals can run a business as a side activity. However, the number of enterprises smaller than 50 employees should approximately equal the number of business owners, *by and large*.

The comparison is made for the year 1994. In case the number of enterprises exceeds the reported number of ‘employers and persons working on own account’, as reported by OECD Labour Force Statistics, we can derive a raise-factor that corrects for the number of OMIBs. *In principle*, for such countries we apply this raise-factor constantly, for the whole period 1972-2008. For those 1)-, 2)-, 4)-, or 5)-categorized countries for which the reported number of business owners in LFS exceeds the number of enterprises, we choose the number of LFS-reported business owners. Because such a country does not belong to category 3), we know that such an estimate does not include *all* OMIBs. But we also know that the number of enterprises is lower, and therefore we argue that it is likely that the vast majority of the OMIBs *is* included in the reported LFS number.

Estimation procedure for non-European countries in COMPENDIA

For the non-European countries in COMPENDIA, we look again at the categorization in *OECD Employment Outlook June 2000*. The above-mentioned *European Observatory for SMEs* does not contain data on non-European countries. Therefore in case the categorization is not ‘3) including (all) OMIBs’, we must estimate the number of OMIBs in another way. If available, we use country-specific sources and we refer to Section II.2 of this paper (United States), Van Stel (2003) (Japan, Canada, Australia, New Zealand), and the notes of Table 1B (Korea, Mexico, Turkey) for a description. In

¹⁰ The description that follows applies to the original 23 countries included in COMPENDIA, as listed in Table 1A. The procedure applied for the seven new countries (see Table 1B) is very similar. The only differences are that a different source is used for the number of enterprises, and that the base year is 1996 instead of 1994. Both differences are related to data availability.

¹¹ The term ‘non-primary’ is defined to exclude agriculture, hunting, forestry and fishing.

all cases we apply a procedure that resembles the procedure for the European countries as closely as possible.

Expert knowledge

For all countries in our data set it holds that we deviate from the above procedures in case we dispose of ‘expert knowledge’, *i.e.*, additional information from other sources. This is the case for the Netherlands, Iceland, Switzerland, and New Zealand. For the estimation of the number of OMIBs of these countries we refer to Van Stel (2003).¹²

Applying the estimation procedure

In Table I we give an overview of the results of applying the (missing) OMIBs estimation procedure described in this section. In particular, the number of business owners including statistically non-identified OMIBs is estimated for 1994 (Table 1A) and 1996 (Table 1B). The number of enterprises is reported only when it is needed in the OMIB estimation procedure of that country. Hence, the number is not reported for countries with categorization ‘including all OMIBs’, or for countries where ‘expert knowledge’ is used. The number of enterprises is also not reported for the non-European countries. In principle, the mentioning of a raise-factor for a country in the last column of Table 1 implies that the factor is applied constantly for the entire period (1972-2008 for the 23 original countries included in Table 1A; for the seven new countries included in Table 1B the business ownership series have a later starting year). However, in three cases (The Netherlands, United States and Japan), the raise-factor is mentioned for illustrational purposes only.

¹² Compared to Van Stel (2003), the level of the business ownership series for the Netherlands is somewhat lower in the new COMPENDIA version because more accurate information, in particular data based on tax returns, has been made available by Statistics Netherlands.

Table 1A. Estimating the number of non-agricultural business owners including all OMIBs in 1994 for 23 OECD countries (all numbers expressed in thousands).¹

Country	OMIB-categorization in OECD Employment Outlook June 2000	1.	2.	3.		Raise-factor OMIBs 2002.1 (=3./1.; only if 3. > 1.)
		Number of business owners in OECD LFS 1981-2001	Number of enterprises smaller than 50 employees	Number of business owners (1994) used in COMPENDIA version: 2002.1 2008.1 ²		
Austria	unclear	230	281	281		1.22
Belgium	incl. all	498		498		
Denmark	incl. most	161	164	164		1.02
Finland	incl. most	193	167	193		
France	incl. most	1,817 ⁴	2,293	2,293		1.26
Germany	incl. most	2,938	3,070	3,070		1.04
Greece	incl. most	840	555	840		
Ireland	incl. most	145	72	162		
Italy	unclear	4,117 ⁴	3,681	4,117	4,673	
Luxembourg	unclear	11.8 ⁵	13	13	14.1	1.10
Netherlands ³	incl. most	596		699	673	1.17 ⁷
Portugal	unclear	736	600	736	792	
Spain	incl. all	2,052		2,052		
Sweden	incl. most	340	335	340		
United Kingdom	incl. most	3,002 ⁴	3,136	3,170	3,222	1.04
Iceland ³	unclear	18.1		18.1	15.6	
Norway	excl. most	116	168	168		1.45
Switzerland ³	N.A.	N.A.		292	283	
United States	excl. all	8,955		13,929	14,349	1.56 ⁷
Japan	excl. all	6,130		6,950		1.13 ⁷
Canada	incl. all	1,804 ⁶		1,804		
Australia	excl. all	984		1,493	1,431	1.52
New Zealand ³	unclear	226		226	230	

Source: Adapted from Van Stel (2005), p. 112, Table 1. Notes in Table 1B.

Table 1B. Estimating the number of non-agricultural business owners including all OMIBs in 1996 for seven OECD countries newly included in COMPENDIA (all numbers expressed in thousands).⁸

Country	OMIB-categorization in OECD Employment Outlook June 2000	1.	2.	3.	Raise-factor OMIBs (=3./1.; only if 3. > 1.)
		Number of business owners in OECD LFS 1988-2008	Number of enterprises smaller than 50 employees	Number of business owners (1996) used in COMPENDIA 2008.1	
Czech Republic ⁹	unclear	524	563	563	1.07
Hungary	incl. all	536		486 ¹⁰	
Korea ¹¹	incl. most	4,360		4,384 ¹⁰	
Mexico ¹¹	incl. most	6,633		6,633	
Poland	incl. most	1,327	1,209	1,327	
Slovak Republic ¹²	unclear	134	2	134	
Turkey ¹³	incl. most	3,269	1,858	3,269	

¹ Data on number of enterprises taken from *The European Observatory for SMEs: Sixth Report*; estimation of OMIBs for non-European countries based on country-specific sources. Ireland: 1994 number of business owners in COMPENDIA 2002.1 adjusted for post-1994 trend breaks in OECD LFS.

² Reported only if the 1994 number of business owners in COMPENDIA 2008.1 is adjusted for post-1994 trend breaks in OECD LFS or if figures reported in OECD LFS version 1988-2008 were updated compared to version 1981-2001. For other countries the 1994 number of business owners in COMPENDIA 2008.1 equals that of COMPENDIA 2002.1.

³ Expert knowledge: estimation of number of OMIBs deviates from usual procedure.

⁴ OECD Labour Force Statistics, version 1978 and 1998. UK: raise-factor for COMPENDIA 2000.1 (1.04) has been applied to revised 1994 figure (3035, from LFS 1981–2001).

⁵ Including unpaid family workers.

⁶ OECD Employment Outlook June 2000.

⁷ Raise-factor not used to construct the data, and only mentioned for purpose of illustration.

⁸ For Czech Republic, Poland and Slovak Republic, data on the number of enterprises are taken from *Eurostat Structural Business Statistics*. For Turkey data on the number of enterprises are taken from the Turkish Statistical Institute (Annual Enterprise Statistics).

⁹ Raise-factor determined for the year 1995.

¹⁰ Hungary and Korea: The number of business owners used in COMPENDIA 2008.1 differs from the number reported in OECD LFS 1988-2008 due to a correction for post-1996 trend breaks.

¹¹ Korea and Mexico: No data are available regarding the number of enterprises smaller than 50 employees. Since the business ownership rates in these countries implied by OECD LFS are already relatively high (among the top four out of 30 OECD countries), we assume that it is not necessary to apply a raise factor.

¹² Slovak Republic is not included in the OECD Employment Outlook June 2000 which makes its OMIB-categorization unclear.

¹³ The comparison between columns 1. and 2. refers to 2004 due to insufficient data availability regarding the number of enterprises smaller than 50 employees in 1996.

I.3 Measuring business ownership and total labour force in seven newly included OECD countries

In this section we provide detailed descriptions of how the (non-agricultural) business ownership and total labour force series were derived for seven countries which are newly included in the COMPENDIA data base: Czech Republic, Hungary, Korea, Mexico, Poland, Slovak Republic, and Turkey.¹³

The main sources of information for constructing time series for the number of business owners in the seven countries are the OECD Labour Force Statistics (LFS) versions 1988-2008, 1981-2001 and 1970-1990. Specifically, we use the item ‘employers and persons working on own account’ under ‘non-agricultural activities’. Unless specified otherwise, the data from LFS 1988-2008, LFS 1981-2001 and LFS 1970-1990 are consistent (i.e. the same numbers are reported for overlapping years), so that we can use the three sources next to each other. When trend breaks occur, we take the LFS 1988-2008 as the leading standard, so that the most recent figures in COMPENDIA 2008.1 are consistent with newly published figures in future versions of the Labour Force Statistics. So, in case of trend breaks, we adjust the older data to the more recent data instead of the other way around, unless doing so conflicts with our business ownership definition. Therefore, in the country descriptions below, we start our descriptions in 2008 and then work backwards towards the earliest year for which data are published (this differs between countries).

In COMPENDIA, the variable total labour force is used as scaling variable for the number of business owners. Hence, the business ownership *rate* of a country is defined as the number of business owners divided by total labour force. The construction of the total labour force series for the newly added countries is taken from or based upon the OECD Labour Force Statistics versions 1988-2008, 1981-2001 and 1970-1990. The total labour force consists of employees, self-employed persons (including OMIBs), unpaid family workers, people employed by the Army and unemployed persons. In the country descriptions below, we briefly report where trend breaks occur and how we adjusted the older data in order to obtain a consistent time series. Also for the total labour force, we start in 2008 and work backwards towards the earliest year for which data are published.

1.3.1 Czech Republic

Business ownership

For Czech Republic, the business ownership time series 1989-2008 has been constructed as follows.

1. We start with constructing a base series. For the years 1993-2008 we directly use the numbers published in LFS 1988-2008 (item ‘employers and persons working on own account’ under ‘non-agricultural activities’).
2. Prior to 1993, no data on self-employment are published in OECD Labour Force Statistics. We use the developments over time for the period 1989-1993 in the number of non-agricultural self-employed, as published by Forst (1996), to extend our series with the years 1989-1992.
3. Table 1 reveals that for the Czech Republic, the OMIB-categorization in *OECD Employment Outlook June 2000* is ‘unclear’. In order to establish the absolute level

¹³ For the detailed descriptions of the other 23 OECD countries we refer to Van Stel (2003), and part II of this paper.

of business ownership in Czech Republic, we apply the procedure described in Chapter I.2, resulting in a raise factor of 1.07. For the whole period 1989-2008, the number of business owners from the base series is multiplied by the factor 1.07 to obtain our final time series of business ownership in the Czech Republic.

Total labour force

For Czech Republic, the total labour force time series 1989-2008 has been constructed as follows.

1. Data for 1990-2008 are taken directly from LFS.
2. Prior to 1990 no data on total labour force are available in LFS. We use the development in total population 1989-1990 to estimate total labour force in 1989. We have now arrived at our final total labour force time series for the Czech Republic, covering the period 1989-2008.

1.3.2 Hungary

Business ownership

For Hungary, the business ownership time series 1989-2008 has been constructed as follows.

1. We start with constructing a base series. For the years 1998-2008 we directly use the numbers published in LFS 1988-2008.
2. A trend break occurs between 1997 and 1998: as explained in LFS 1988-2008 (p. 408):

“Data are compiled from the results of the quarterly Household Labour Survey, which was introduced in the first quarter of 1992. The sample used is compiled from dwellings registered by the 1990 Population Census. In 1998, a new sample design was introduced. The size of the survey was expanded from 24,000 to 32,000 households (50,000 to 65,000 persons).”

The new sample design leads to a trend break between 1997 and 1998. To correct for this break, we use the average of relative changes 1996-1997 and 1998-1999 to achieve relative change 1997-1998 and apply this to the number of business owners in 1998. For the period 1994-1997, we use relative annual changes in the number of business owners as published in LFS 1988-2008.

3. Prior to 1994, no data on (non-agricultural) self-employment are published in OECD Labour Force Statistics. We use the developments over time for the period 1989-1994 in the number of non-agricultural self-employed, as published by Forst (1996), to extend our series with the years 1989-1993.
4. Table 1 reveals that for Hungary, the OMIB-categorization is ‘including all OMIBs’. We therefore do not have to adjust the base series obtained in step 3.

Total labour force

For Hungary, the total labour force time series 1989-2008 has been constructed as follows.

1. We start with copying the reported numbers in LFS 1988-2008 for 1992-2008.
2. Prior to 1992 no data on total labour force are available in LFS. We use the developments in total population 1989-1992 to estimate total labour force in 1989-1991. We have now arrived at our final total labour force time series for Hungary, covering the period 1989-2008.

I.3.3 Korea

Business ownership

For Korea, the business ownership time series 1980-2008 has been constructed as follows.

1. We start with constructing a base series. For the years 2000-2008 we directly use the numbers published in LFS 1988-2008.
2. A trend break occurs between 1999 and 2000 (LFS 1988-2008): we use the average of relative changes 1998-1999 and 2000-2001 to achieve relative change 1999-2000 and apply this to the number of business owners in 2000. For the period 1986-1999, we use relative annual changes in the number of business owners as published in LFS 1988-2008 and for the period 1981-1985 we use relative annual changes in the number of business as published in LFS 1981-2001 (both series are consistent).
3. Data for 1980 are derived from the OECD Databases of Source OECD (www.sourceoecd.org), which provide annual LFS data under the subject 'employment and labour market statistics'. Data on the number of business owners reported in this database are consistent with the figures published in LFS 1981-2001. Therefore, we can directly take the additional year (1980) as reported in Source OECD, and apply the relative change 1980-1981 to the 1981 level achieved in step 2. We now have a base series for the years 1980-2008.
4. Table 1 reveals that for Korea, the OMIB-categorization is 'including most OMIBs'. In order to establish the absolute level of business ownership in Korea, we would like to apply the procedure described in Chapter I.2. However, data concerning the number of enterprises smaller than 50 employees is unavailable. Nevertheless, considering the relatively high level of the business ownership rate in Korea, we assume that no raise factor needs to be applied to the number of business owners published in the OECD LFS. We therefore use the base series obtained in step 3 for the number of business owners in Korea.

Total labour force

For Korea, the total labour force time series 1973-2008 has been constructed as follows.

1. We start with copying the reported numbers in LFS 1988-2008 for 2000-2008.
2. Between 1999 and 2000, a trend break occurs (LFS 1988-2008): we use the average of relative changes 1998-1999 and 2000-2001 to achieve relative change 1999-2000 and apply this to the total labour force in 2000. For the period 1991-1999, we use relative annual changes in the total labour force as published in LFS 1988-2008.
3. Between 1990 and 1991, another trend break occurs (LFS 1988-2008): we use the average of relative changes 1989-1990 and 1991-1992 to achieve relative change 1990-1991 and apply this to the total labour force in 1991. For the period 1973-1990, we use relative annual changes in the total labour force as published in LFS 1988-2008 and LFS 1976-1996. We have now arrived at our final total labour force time series for Korea, covering 1973-2008.

I.3.4 Mexico

Business ownership

For Mexico, the business ownership time series 1991-2008 has been constructed as follows.¹⁴

1. We start with constructing a base series. For the years 1995-2008 we directly use the numbers published in LFS 1988-2008.
2. A trend break occurs between 1994 and 1995 (LFS 1988-2008): we use the average of relative changes 1993-1994 and 1995-1996 to achieve relative change 1994-1995 and apply this to the number of business owners in 1995. For the period 1992-1994, we use relative annual changes in the number of business owners as published in LFS 1988-2008.
3. Another trend break occurs between 1991 and 1992: we take relative change 1992-1993 to achieve relative change 1991-1992 and apply this to the number of business owners in 1992.¹⁵ We now have a base series for the years 1991-2008.
4. Table 1 reveals that for Mexico, the OMIB-categorization is ‘including most OMIBs’. In order to establish the absolute level of business ownership in Mexico, we would like to apply the procedure described in Chapter I.2. However, data concerning the number of enterprises smaller than 50 employees is unavailable. Nevertheless, considering the relatively high level of the business ownership rate in Mexico, we assume that no raise factor needs to be applied to the number of business owners published in the OECD LFS. We therefore use the base series obtained in step 3 for the number of business owners in Mexico.

Total labour force

For Mexico, the total labour force time series 1991-2008 has been constructed as follows.

1. We start with copying the reported numbers in LFS 1988-2008 for 1995-2008.
2. Between 1994 and 1995, a trend break occurs (LFS 1988-2008): we use the average of relative changes 1993-1994 and 1995-1996 to achieve relative change 1994-1995 and apply this to the total labour force in 1995. For the period 1991-1994, we use relative annual changes in the total labour force as published in LFS 1988-2008. We have now arrived at our final total labour force time series for Mexico, covering 1991-2008.

1.3.5 Poland

Business ownership

For Poland, the business ownership time series 1981-2008 has been constructed as follows.

1. We start with constructing a base series. For the years 1992-2008 we directly use the numbers published in LFS 1988-2008.
2. A trend break occurs between 1991 and 1992. This involves the inclusion of unpaid family workers in the number of business owners prior to 1992. For 1981-1991, we correct the LFS numbers, as published in LFS versions 1988-2008 and 1981-2001, using the 1992 fraction of ‘*employers and persons working on own account*’ in the

¹⁴ Although the number of business owners in 1990 is also published in LFS 1988-2008, this number deviates to a large extent from the other years, i.e. there is a clear trend break between 1990 and 1991. We therefore deleted this outlier year from the time series.

¹⁵ We do not use the average of relative changes 1990-1991 and 1992-1993 to achieve relative change 1991-1992 due to a trend break between 1990 and 1991.

sum of 'employers and persons working on own account' and 'unpaid family workers'. This fraction equals $1,185/(1,185+97)$. We now have a base series for the years 1981-2008.

3. Table 1 reveals that for Poland, the OMIB-categorization is 'including most OMIBs'. In order to establish the absolute level of business ownership in Poland, we apply the procedure described in Chapter I.2. It follows that the LFS figure is higher than the number of enterprises with less than 50 employees. We therefore use the base series obtained in step 2 for the number of business owners in Poland. For more details concerning the Polish labour force survey and the counting of OMIBs in Polish statistics, we refer to Section II.1 of this paper.

Total labour force

For Poland, the total labour force time series 1981-2008 has been constructed as follows.

1. We directly use the reported numbers in LFS 1988-2008 (1988-2008) and LFS 1984-2004 (1981-1987). These series are consistent.

1.3.6 Slovak Republic

Business ownership

For Slovak Republic, the business ownership time series 1989-2008 has been constructed as follows.

1. We start with constructing a base series. For the years 1994-2008 we directly use the numbers published in LFS 1988-2008.
2. Prior to 1994, no data on (non-agricultural) self-employment are published in OECD Labour Force Statistics. We use the developments over time for the period 1989-1994 in the number of non-agricultural self-employed, as published by Forst (1996), to extend our series with the years 1989-1993.
3. Table 1 reveals that for Slovak Republic, the OMIB-categorization is 'unclear'. From the same table it follows that the LFS figure is higher than the number of enterprises with less than 50 employees. We therefore use the base series obtained in step 2 for the number of business owners in Slovak Republic.

Total labour force

1. We start with copying the reported numbers in LFS 1988-2008 for 1994-2008.
2. Prior to 1994 no data on total labour force are available in LFS. We use the developments in total population 1989-1994 to estimate total labour force in 1989-1993. We have now arrived at our final total labour force time series for Slovak Republic, covering the period 1989-2008.

1.3.7 Turkey

Business ownership

For Turkey, the business ownership time series 1988-2008 has been constructed as follows.

1. We start with constructing a base series. For the years 1988-2006 we directly use the numbers published in LFS 1988-2008.

2. Between 2006 and 2007 there is a trend break (LFS 1988-2008). We use the average of relative changes 2005-2006 and 2007-2008 to estimate relative change 2006-2007 and apply this to the number of business owners in 2006. For 2008 we use the relative change 2007-2008, based on the number of non-agricultural self-employed as reported in LFS. We now have a base series 1988-2008.¹⁶
3. Table 1 reveals that for Turkey, the OMIB-categorization is ‘including most OMIBs’. In order to establish the absolute level of business ownership in Turkey, we apply the procedure described in Chapter I.2. It follows that the LFS figure is higher than the number of enterprises with less than 50 employees. We therefore use the base series obtained in step 2 for the number of business owners in Turkey.

Total labour force

For Turkey, the total labour force time series 1972-2008 has been constructed as follows.

1. We start with constructing a base series. For the years 1988-2006 we directly use the numbers published in LFS 1988-2008.
2. Between 2006 and 2007 there is a trend break (LFS 1988-2008). We use the average of relative changes 2005-2006 and 2007-2008 to estimate relative change 2006-2007 and apply this to the total labour force in 2006. For 2008 we use the relative change 2007-2008, based on the total labour force numbers as reported in LFS. We now have a base series 1988-2008.¹⁷
3. For 1978-1987 we use the reported numbers from LFS 1981-2001, which are consistent with the 1988-2008 series from step 2. For 1974-1977 we use the numbers from LFS 1976-1996, which are also consistent with the previously constructed time series.
4. Labour force data in LFS 1970-1990 are not consistent with LFS 1976-1996. We use relative annual changes in the total labour force 1972-1974 (LFS 1970-1990) to estimate total labour force in 1972 and 1973. We have now arrived at our final total labour force time series for Turkey, covering the period 1972-2008.

¹⁶ Note that in this case, we still use the business ownership *level* which applied to earlier years (i.e. 2006 and earlier). Since the trend break is very recent, we did not decide yet to change the level of the series. When the new level will be used for several years (i.e. if no new trend break occurs) we may, in future versions of COMPENDIA, decide to change the level of the series to the most recent years.

¹⁷ Note that this method is consistent with the business ownership series method for Turkey (see previous footnote).

PART II: MEASURING BUSINESS OWNERSHIP IN POLAND AND THE UNITED STATES

As an illustration of the type of problems that may arise when constructing self-employment time series, this part of the paper presents the particularities regarding self-employment statistics in two countries: Poland and the United States.¹⁸

II.1 Measuring business ownership in Poland

II.1.1 Introduction

The issue of measuring business ownership in Poland has to be seen in the broader context of radical changes taking place since 1989, as a result of systemic transformation:

- The explosion of the number of business owners between 1989 and 1992;
- The institutional re-organization of the national economy to reflect the primary role of the private sector and declining role of the public sector;
- Changes in the national statistical system and the organization of the Central Statistical Office (GUS) to make them more compatible with the systemic transformation. These changes were implemented gradually, with initial adjustments reflected in the Statistical Yearbook, presenting data for 1990 (GUS, 1991);
- The gradual implementation of the OECD and Eurostat statistical standards, methodologies and classifications, as part of the obligations resulting from Poland's accession to the OECD in 1996 and the European Union in 2004. The crucial change, with respect to measuring business ownership was the abandonment of the Classification of the National Economy that was geared towards a command-type, hierarchical structure of the economy and the adoption of the NACE-based classification of economic activities in 1993.

While evaluating trends in business ownership rates, one shall take into account that a sizeable private sector did exist in Poland under communism. In 1988, the last year under the communist regime, there were some 572,000 private business establishments, not including the predominantly private agricultural sector. These business establishments primarily consisted of taxi drivers, retail stores, fast food outlets, and artisan shops. The private sector contributed to 7% of employment in the Polish economy in 1988 (GUS, 1989).

The explosion of entrepreneurial activity was initiated before the political change marked by the winning of the first free election by the Solidarity movement in June 1989. On 1 January 1989, just five months earlier, some major legislative acts came into force, specifically, the law granting freedom to perform business activity. This law was facilitated by a very simple and inexpensive registration procedure for sole proprietorships at the local (commune, municipality) level. As a result, the number of business establishments exploded. By the end of 1993, registered business entities reached almost 2 million (GUS 2009). This number

¹⁸ For a description of particularities regarding self-employment statistics in Sweden, we refer to Bjuggren, Johansson and Stenkula (2010).

included small firms existing prior to 1989; however, the majority of new business entities (approximately 1.4 million) were entrepreneurial start-ups with no prior business experience.

At the present time, the system of measuring business ownership by GUS is composed of three pillars:

- National Official Business Register (REGON)
- Identification of business owners (self-employed) within the framework of the Labour Force Survey (LFS)
- Annual survey of business enterprises.

One apparent weakness of such a system is that its main pillars function independently with no apparent procedures to reconcile the results and investigate the existing differences. To our knowledge, the present study is the first attempt of such a reconciliation. The study is based on statistical data derived from various official GUS publications encompassing the period of 1988-2009, as well as the LFS data for 1994-2008, that was processed specifically for our study by the GUS.

II.1.2 National Official Business Register (REGON)

The system of assigning a unique statistical number to economic and other entities was operational in Poland since 1975. It comprised initially of state-owned enterprises and co-operatives. Later, it was extended to some entities in the private sector, like partnerships, limited liability companies, joint stock companies, and foundations, but not sole proprietorships. By 1992, there were some 150,000 entries in the REGON system.

The outbreak of entrepreneurial activity invoked by the systemic transformation after 1988, called for expanding the coverage of the central REGON register. The registration of all business entities, irrespective of the legal form, became compulsory for all business entities in 1993. The apparent success in the implementation of the new rules was that the REGON number became indispensable in day-to-day operations, being required by the administrative bodies, and tax offices, as well as the social security administration and banks.

Data presented in Table 2 (upper sector) illustrates the steady growth of registered business entities in REGON since 1993. Sole proprietorships account for 75% of the entire population. Foundations, associations and non-profit organizations, represent 2.5% of the population; these entities often conduct business operations to finance their statutory activities. However, the REGON system does not cover private agricultural farms (over 2.5 million in 2008), which are not obliged to register and are subject to different methods of statistical data collection. This results in a relatively small representation of business entities active in the agriculture, forestry and fisheries sectors (less than 2.5% in 2008).

The key weakness of the REGON system is that approximately half of the registered firms are non-active, either because they did not initiate effective business activity after registration or closed operations and failed to de-register in the REGON system. Unlike other registrations (administrative, court, tax or social security) involving some penalties and other hardships encouraging owners to report business closures, such hardships do not apply to the REGON system. Moreover, since this is an official register, de-registration cannot be accomplished by the administrative act of the statistical authority.

Some improvements, with respect to clearing the backlog of inactive firms, are being observed as a result of the implementation in April 2009 of a “one window” procedure, where the business owner can obtain all necessary approvals and registrations for launching a business in one place (the local government office). The side effect of “one window” is that it grants access by the GUS to the information on de-registrations (administrative, tax, social security) by a given entity. With this information, GUS may contact and encourage REGON users to reflect these changes in the REGON system. Another stimulus for clearing the “dead” entities in the REGON system comes from the obligatory recoding of the classification of economic activities to the NACE Rev. 2 format, which has to be accomplished by all REGON users by the end of 2009.

Another weakness of the REGON data relates to its employment figures. While entering into REGON, business owners must provide data on the number of actual or planned employees at the moment of registration. Unlike other entries of the application for registration, like company name, address, ownership structure, and NACE codes, where updating of the relevant changes is compulsory, no such obligation applies to the employment data. GUS publishes semi-annual reports from the REGON system, including data on the number of employed persons, which is quite confusing, as this data does not reflect the current status, but, in most cases, the historic set-up at the moment of registration.

Although REGON data can be helpful for evaluating trends in business start-ups and closures, the overall conclusion is that it is not particularly useful for measuring the number of business owners in Poland. Unfortunately, the data from the REGON system are often presented in the government documents, the press and even in academic publications, as an indication of the level of entrepreneurial activity.

II.1.3 Business enterprise surveys

Some initial attempts to measure the level of business ownership, particularly within the rapidly growing small business sector of up to 5 employees, was undertaken by GUS in the fall of 1990. As the REGON system was not operational at that time, the key weakness of the initial surveys carried out during 1990 – 1992 resulted from the lack of the reliable base population, allowing for a methodologically sound random sampling. Therefore, the purposeful selection method was adopted with the key criteria being the proper representation of industries and employment levels.

A major breakthrough came in 1993 when the random selection method was implemented for the first time with the use of the REGON data. The sample for 1993 was set at the level of 10% of the entire population, decreasing to 5% in 1994-1995, and decreasing again to 4% after 2000. Due to some changes in the survey organization and the use of data from the tax offices as additional source of information, the response rates and overall quality of the data increased significantly, thus allowing for a more reliable generalization of the results for the entire population. Since 1993, the enterprises have been categorized by industries following the NACE-based classification of economic activities, which facilitated international comparisons.

Since 1992, the sample survey of the small business establishments (up to 5 employed persons) has been complemented by the full scope survey covering enterprises with 6 or more persons employed, for which submitting relevant information on an annual basis became compulsory. Due to the lack of specific penalties for non-compliance, one may expect that the

response rate in the initial years was not very high. According to the GUS experts, the response rate significantly improved after 2000.

The dual survey scheme (sample survey for micro-enterprises and full survey for larger firms) is still in place, however, important adjustments have been made. In view of the weaknesses of the REGON system, additional data from tax offices and the social security administration were included to establish a more reliable base population for random sampling. In 1999, the upper ceiling for micro-enterprises was moved from 5 to 9 persons employed, following corresponding changes in the OECD and EU statistical systems.

Since 2003, GUS started aggregating data from both surveys, arriving at the total number of business enterprises, irrespective of size, measured by the level of employment. As a result, they launched a new annual publication entitled the “Activity of Non-Financial Enterprises”.¹⁹ There were also some changes over time to the industry coverage. As of today, the enterprise survey only excludes the agricultural sector and enterprises conducting financial services (banking, insurance, investment funds, and pension funds); however, the intermediary financial services sector is included.

Table 2 (middle sector) provides data on the number of business enterprises during 1990–2007. To arrive at the aggregated number of enterprises, we added the results of both surveys for 1992–2002. For 2003–2007, we followed the GUS aggregation. The data illustrates that, after the initial transition boom during 1990–1992 (1989 should be included, but no data was available), the number of business enterprises declined. This number exceeded the peak of 1992 in 1997. After 2000, the number fluctuated around 1.7 million, exceeding 1.8 million only in 2008.

II.1.4 Measuring self-employment in the LFS

The LFS has been conducted by the GUS on a quarterly basis since mid-1992. This is a probability sample survey allowing the generalization of the results over the entire population. Over the years, the methodology and data collection procedures have gradually improved, following Eurostat recommendations.

Data in Table 2 (lower sector) reflects the results of the LFS conducted during 1994–2008 (last quarters in each year), which was processed by the Labour and Living Conditions Division of GUS, specifically for this study.²⁰ The year 1994 was chosen as the first period of observation, as a result of consultation with the professional staff of the said Division, due to some doubt as to the quality of data in its two preceding years (1992 and 1993). Unlike REGON, the LFS does cover agricultural households, and therefore, the exclusion of agriculture, fishery and forestry brings down the number of self-employed to some 50%. Another interesting observation is that the share of employers within the self-employment group was fairly stable over the 15-year period, being within the 37-38% range, in most years.

¹⁹ One unfortunate side effect was the discontinuity of two separate publications containing more detailed information on micro-enterprises and larger firms with 10 or more persons employed.

²⁰ The self-employment numbers in the last line of Table 2 are very close to those reported in OECD Labour Force Statistics, which are also used as the series for Poland in COMPENDIA. The difference is that while the self-employment numbers in Table 2 refer to the fourth quarter of each year, OECD data refer to annual averages.

II.1.5 The reconciliation of the LFS and enterprise survey data on business ownership

As discussed in Section II.1.2, the weaknesses of the REGON make the data from this official register unsuitable for measuring business ownership in Poland. With respect to two remaining components, data presented in Table 2 illustrates a quite significant discrepancy between the LFS and enterprise survey data, the latter being 14% – 23% lower than the former. True, both surveys are based on different methodological principles and data sources; however, with the improved methods and survey organization, one might expect a converging trend in the results of both surveys.

To explore the identified discrepancy in greater detail, we consulted professional staff at three divisions of GUS involved in various aspects of business ownership measurement.²¹ We also accessed a more detailed statistics, allowing for a closer examination of the specific issues relevant to this subject. Based on this, we identified three potential areas contributing to the observed discrepancy: the owner-managers of incorporated businesses (OMIBs) issue, commission and task contracts used in self-employment, and conducting business as a secondary activity.

a) The OMIBs issue

The lack of unified rules regarding the inclusion of OMIBs in business ownership figures has been recognized as a major obstacle in harmonizing self-employment data in the COMPENDIA data base. Based on REGON and the enterprise survey data, we can estimate the number of active incorporated businesses in 2008 (joint stock and limited liability companies) being in the range of 110,000 entities in the small business category and an additional 60,000 entities in the remaining group of medium-sized and large enterprise groups.

So far, the OMIBs issue has not been addressed in the Polish LFS, neither from the methodological perspective, nor from the organizational perspective. More specifically, there were no specific guidelines for interviewers as to how this issue shall be tackled in the course of collecting data during the quarterly survey.

As a result, we considered alternative ways that an actual Polish OMIB could follow in responding to two relevant questions, phrased as follows in the LFS:

- Have you worked in a self-employment capacity in the current week?, and
- Do you have contracted employees in the current week?

In our view, the potential reaction could be mixed. As to the first question, the OMIB having an employment contract with his/her firm would probably respond NO, irrespective of the company size. This is because the phrasing of this question directs the attention of a respondent to simple forms of conducting business, like sole proprietorships and partnerships, based on Civil Code. With regard to the second question, the OMIB of the small firm would probably respond in the affirmative, reflecting his/her ownership status, but negatively in the case of a medium-sized or large firm. However, once he/she responds negatively to the first question, the second question would be skipped by the interviewer, so that the OMIB would have no chance to respond to it. In summary, we have no definite clue as to what extent the

²¹ Methodology, Standards and Registers Division (REGON), Labour and Living Conditions Division (LFS), and the Business and Price Division (Enterprise Survey).

OMIBs issue affects the level of the business ownership count, but it seems that this category may be underrepresented in the Polish LFS.

b) Commission and task contracts

Commission and task contracts are popular alternatives to employment contracts. They may also exist in parallel to employment, particularly while performing specific services for another employer. Such contracts do not require business registration and are subject to a simplified taxation regime under the Polish personal income tax code. The use of such contracts does not apply to the enterprise survey, as it only focuses on registered businesses. It may, however, affect the level of business ownership derived in the LFS, because the respondent with such a contract would probably respond in the affirmative to the first question, declaring self-employment either as a primary or secondary activity. On the other hand, both contract categories exclude the possibility of engaging other persons in performing specific services or tasks so that the reply to the second question will be negative. However, the above line of argument implies that the business ownership level derived from the LFS should be higher than that from the enterprise surveys, which contradicts the actual trend identified previously.

c) Business engagement as a secondary activity

The definition adopted for measuring business ownership in the COMPENDIA data base excludes the self-employment count from business engagements performed as the activity, which is secondary to the primary position. The procedure of collecting data in the Polish LFS does allow, from 2001 onwards, for the separation of primary and secondary self-employment data and the proper reflection of both categories in the self-employment count. With respect to the enterprise survey, the matter becomes somewhat complicated, as the secondary engagement in the registered business ownership cannot be easily detected from the enterprise survey data.

To account for the registration of a business as the secondary activity, the category of the registered business with “zero persons employed” has been introduced in the survey format in 1994.²² It was expected, at that time, that such a category will vanish quickly as it particularly reflected the unstable environment of the systemic transition. Contrary to such expectations, businesses registered as the secondary activity have continued as a sizeable and pretty stable component of business ownership in Poland.

To investigate the impact of the secondary activity, we obtained additional data on the level of secondary self-employment; available from the LFS from 2001 onwards (this data was not collected prior to 2001). At the same time, we collected data from the enterprise survey on businesses with zero persons employed. This facilitated the comparisons of the business ownership count between the LFS and enterprise surveys, based on the primary business activity, as well as the combined primary and secondary activity.

The results of this comparison are presented in Table 3. To make it compatible with the COMPENDIA format, we excluded agriculture, forestry and fishery, and firms with 50 or more persons employed.²³ The comparative analysis was restricted to 1994–2007, as data was

²² Businesses with “zero persons employed” can be considered as a proxy for running businesses (self-employment) as the secondary activity. This is because the business owner not perceiving himself as being employed in his own firm would probably work for another company, paying social security there.

²³ Business enterprises were categorized in the Polish enterprises survey in the small, medium-sized and large categories by the number of persons employed, not the employees. At this stage, it was not possible to exclude the

only available for that period. The key findings from the analysis can be summarized as follows:

- For the years where direct comparisons were possible (2001-2004), the level of business ownership as the secondary activity was quite similar in both surveys. The difference was 9% in 2001, but less than 4% in the following years;
- In both business ownership measures, based on primary and secondary activity, the self-employment count was always higher than the enterprise survey count. This supports an earlier argument on the potential impact of the commission and task contracts for self-employment in the LFS survey;
- For the combined primary and secondary activity count, the percentage differences in both surveys were in the 10% range and were also pretty stable over the entire period (2001-2008). With respect to the primary activity count, there were significant differences observed during the initial period of 1994-1998 (23% – 43%), narrowed down to less than 10% during 1999-2004. This, in turn, reinforces the argument that with the improved methodological quality and organization, the results derived from both surveys should be pretty similar.

II.1.6 Conclusions

Based on the analysis of the business ownership data in Poland and particularly on the reconciliation of self-employment counts in both the LFS and enterprise surveys, we may conclude that the LFS data can be used as pretty reliable measure for estimating the business ownership level and business ownership rate in Poland. The business ownership count based on the LFS is consistently higher than the count derived from the enterprise survey; however, the difference falls within a reasonable and justified range.

The significant level of business ownership as a secondary activity calls for the closer examination of this category to identify the characteristics of such a phenomenon. These reasons may be typically Polish or transition-specific or more of a general nature, and thus, relevant for measuring the level of business ownership in other countries. Based on the initial insights, we may distinguish three sub-categories of business as secondary activity phenomenon:

- The first sub-category is the classic business, performed as the auxiliary activity in addition to the employment contract, as the main source of income. Registration of such a business, particularly in countries with simple start-up procedures, may prove efficient, e.g., for the proper accounting of the costs of running a business and paying lower taxes²⁴;
- The second sub-category is of a transitory nature and reflects the start-up strategy with an “employment cushion”. Under such a scenario, an employee may go on his/her own and launch a new business. In order to minimize their risk, they may keep their job with their current employer until the survival chances for his/her business undertaking are pretty firm, and only then, do they terminate their employment contract;

medium-sized and large entities from the self employment count, but one may expect that they are marginally represented in the LFS. Altogether, there were approximately 18,000 medium-sized and large firms active in Poland in 2007.

²⁴ In Poland, sole proprietorships are subject to a 19% flat tax rate, whereas the highest band under the personal income tax code is 32%.

- The third sub-category can be labeled as the “primary activity disguised under the secondary activity”. In the Polish environment, the efforts to minimize social security charges by the small business owners seem to be the key driving force here. In view of the notorious underreporting of income by the small business authorities, the respective regulations have introduced the minimum social security charge as the equivalent of charges applicable to a person receiving 60% of the average wage in the economy. Thus, the minimum social security charges are levied at this minimum level, irrespective of the income actually generated in the business.²⁵ However, having a part-time contract or being a retired person can effectively eliminate, or significantly reduce, the social security charges for the business owner. It might be expected that business owners optimizing social security charges in such a way would report the secondary characteristic of self-employment in the LFS and “zero persons employed” in the enterprise survey.

While eliminating the first sub-category from the self-employment count seems fully justified, with respect to the remaining sub-categories, both for and against arguments can be raised. However, to more thoroughly examine these issues, some additional data would be necessary, allowing for the assessing of the relevance of the sub-categories of business as a secondary activity discussed above and/or of the identification of additional modalities of such a phenomenon.

²⁵ At the present time, minimum social security charge for the unincorporated business owner in Poland amounts to approximately 200 euros monthly. A business owner may opt for a higher charge of up to 250% of the average wage in the economy. This is being done very seldomly, pointing to the evident short-sidedness of the small business community, as the level of present social security charges affect the level of future retirement benefits.

Table 2

Measuring Business Ownership in Poland
Comparison of National Register (REGON), Enterprise Survey, and Labour Force Survey statistics

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
I. ENTITIES ENTERED IN REGON																			
Total				1,953.3	2,120.4	2,110.7	2,412.0	2,596.9	2,842.3	3,039.5	3,185.0	3,325.5	3,468.2	3,581.6	3,576.8	3,615.6	3,636.0	3,685.6	3,757.1
Total less agriculture, fishery, and forestry				1,943.5	2,109.9	2,099.2	2,398.4	2,582.5	2,827.1	3,023.9	3,168.9	3,309.8	3,374.6	3,479.6	3,491.1	3,526.8	3,544.3	3,591.5	3,661.5
II. ENTERPRISE SURVEY DATA																			
Enterprises with up to 5 persons employed																			
Total	1,135.5	1,374.2	1,358.4	1,197.4	1,035.4	1,056.5	1,255.4	1,492.5	1,634.2										
Total less agriculture, fishery, forestry			1,353.2	1,193.3	1,031.3	1,051.6	1,245.8	1,480.4	1,621.1										
Enterprises 6 and more persons employed																			
Total			38.9	40.9	43.3	35.0	40.6	73.0	74.0										
Total less agriculture, fishery, forestry			33.3	36.7	36.7	34.9	40.5	72.9	73.9										
Enterprises with up to 9 persons employed																			
Total										1,772.8	1,718.9	1,604.6	1,692.1	1,661.4	1,651.2				
Total less agriculture, fishery, forestry										1,756.8	1,705.4	1,591.6	1,677.3	1,649.5	1,641.0				
Enterprises 10 and more persons employed																			
Total										55.9	53.2	52.3	50.0	52.1	55.2	58.1	58.4		
Total less agriculture, fishery, forestry										55.8	53.1	52.2	49.9	52.0	55.1	58.0	58.3		
Data on enterprises - all employment bands																			
Total														1,726.5	1,715.0	1,676.8	1,714.9	1,777.1	1,882.5
Total less agriculture, fishery, forestry														1,713.9	1,704.5	1,666.7	1,704.3	1,766.0	1,851.4
Enterprise Survey Data Aggregation*																			
Total			1,397.3	1,238.3	1,078.7	1,091.5	1,296.0	1,565.5	1,708.2	1,828.7	1,772.1	1,656.9	1,742.1	1,726.5	1,715.0	1,676.8	1,714.9	1,777.1	1,862.5
Total less agriculture, fishery, forestry			1,386.5	1,230.0	1,068.0	1,086.5	1,286.3	1,553.3	1,695.0	1,812.6	1,758.5	1,643.8	1,727.2	1,713.9	1,704.5	1,666.7	1,704.3	1,766.0	1,851.4
III. LABOUR FORCE SURVEY DATA																			
Self-employment as primary activity Total				3,682.0	3,426.0	3,469.0	3,493.0	3,375.0	3,264.0	3,254.0	3,231.0	3,083.0	2,990.0	2,956.0	2,972.0	2,911.0	2,942.0	2,914.0	2,914.0
Total less agriculture, fishery, forestry				1,323.0	1,278.0	1,348.0	1,421.0	1,478.0	1,455.0	1,378.0	1,372.0	1,334.0	1,331.0	1,331.0	1,349.0	1,382.0	1,503.0	1,550.0	1,550.0

All numbers expressed in thousands.

* Available data on small enterprises was aggregated with figures on enterprises employing 6 (later 10) persons or more. From 2003 onwards we relied on GUS aggregations.

Source: Various GUS publications 1989 - 2009. Labour Force Survey data was processed specifically for this study by GUS.

Table 3

Measuring Business Ownership in Poland
Reconciliation of the Enterprise Survey and Labour Force Survey data
(excluding agriculture, fishery, forestry)

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
ENTERPRISE SURVEY DATA (ES)															
Firms up to 49 persons	1041.8	1064.9	1259.9	1495.8	1637.3	1773.7	1722.1	1607.2	1692.3	1697.2	1687.8	1649.6	1686.9	1747.3	1,832.1
Of which 0 persons employed	296.5	259.3	334.9	467.4	495.9	456.5	440.9	468.4	475.7	462.1	475.8				
Of which 1 or more persons employed	745.3	805.6	925.0	1028.4	1141.4	1317.2	1281.2	1138.8	1216.6	1235.1	1212.0				
LABOUR FORCE SURVEY DATA (LFS)															
Self-employment as primary activity	1,323.0	1,278.0	1,348.0	1,421.0	1,478.0	1,455.0	1,378.0	1,372.0	1,334.0	1,331.0	1,331.0	1,349.0	1,382.0	1,503.0	1550.0
Self-employment as secondary activity								516.0	480.0	446.0	476.0	472.0	498.0	487.0	480.0
Primary and secondary activity								1,888.0	1,814.0	1,777.0	1,807.0	1,821.0	1,880.0	1,990.0	2,030.0
LABOUR FORCE TOTAL															
	17,122.0	17,004.0	17,064.0	17,052.0	17,162.0	17,214.0	17,300.0	17,229.0	17,097.0	16,991.0	17,139.0	17,283.0	16,987.0	16,986.0	17,159.0
RATIOS															
Secondary self-employment: ES as % of LFS									90.8%	99.1%	103.6%	100.0%			
Primary self-employment: ES as % of LFS	56.3%	63.0%	68.6%	72.4%	77.2%	90.5%	93.0%	83.0%	91.2%	92.8%	91.1%				
Primary and secondary self-employment: ES as % of LFS								85.1%	93.3%	95.5%	93.4%	90.6%	89.7%	87.8%	90.3%
Business ownership rate LFS - primary self employment	7.7%	7.5%	7.9%	8.3%	8.6%	8.5%	8.0%	8.0%	7.8%	7.8%	7.8%	7.8%	8.1%	8.8%	9.0%
Business ownership rate LFS - primary and secondary self employment								11.0%	10.6%	10.5%	10.5%	10.5%	11.1%	11.7%	11.8%

Source: See reference note in Table 2

All numbers expressed in thousands.

Data from Labour Force Survey (LFS) and Labour Force Total refer to IV quarter each year.

II.2 Measuring business ownership in the United States²⁶

In this section we discuss how the US business ownership time series that is used in COMPENDIA, was constructed.

As regards the number of self-employed individuals in the United States, different sources report different figures. The official self-employment definition as practiced by the Bureau of the Census in its *Current Population Survey* (CPS) excludes the incorporated self-employed. The definition thus only includes the unincorporated self-employed which consist of sole proprietors and partners, see the *United States Small Business Administration* (SBA, 1997), p. 87.²⁷ As we also include the incorporated self-employed (ISE) in our COMPENDIA definition, we have to resort to other sources as regards the number of ISE.

The organization of this section is as follows. First, we discuss reported figures on (unincorporated) self-employed in various sources. Our estimation of the number of ISE is described in subsection II.2.2. This subsection also includes a discussion on some specific measurement problems concerning ISE. Third, we present our business ownership series for the US, and we provide some explanation for the different developments over time of numbers of unincorporated and incorporated self-employed.

II.2.1 Unincorporated Self-Employed

The number of non-agricultural unincorporated self-employed in the United States can be obtained from OECD Labour Force Statistics (which are actually figures from the Current Population Survey). The number is 9.220 million in 2008 and 9.344 million in 2003 (OECD, 2009b). However, between 2002 and 2003 there is a break in the series in OECD Labour Force Statistics due to the introduction of the 2002 North American Industry Classification System (NAICS) in the monthly Household Labour Survey (i.e. the Current Population Survey), see OECD (2009b), pp. 475-476. Therefore, we use the annual change 2002-2003 based on OECD National Accounts. In this publication the self-employed category is derived as the difference between total employment and employment of employees. According to the OECD National Accounts data base, the growth rate in the number of non-agricultural self-employed between 2002 and 2003 is 4.2%. We apply this growth rate to the 2003 level of unincorporated self-employed to arrive at a 2002 level (8.971 million).²⁸ For the period 1972-2002 we apply annual growth rates based on the number of unincorporated self-employed as published in the various versions of OECD Labour Force Statistics.²⁹ The number of (non-agricultural) unincorporated self-employed varies between 5.593 million in 1972 and 9.220 million in 2008.

²⁶ This section is an update of the corresponding section in Van Stel (2005).

²⁷ People who are self-employed as a secondary activity (side owners) are also not included in the Census definition, see SBA (1997), p. 87.

²⁸ The annual growth rates in the number of non-agricultural self-employed in the surrounding years are very similar between OECD National Accounts and OECD Labour Force Statistics, giving us confidence in this growth rate.

²⁹ We use LFS versions 1988-2008, 1981-2001 and 1970-1990. For 1990 and 1992, we have used LFS 1974-1994, in order to take account of two (minor) trend breaks in 1990 and 1994 in LFS 1981-2001.

II.2.2 Incorporated Self-Employed

In the previous section we saw that obtaining the number of unincorporated self-employed persons is relatively straightforward. This is not true however for the number of incorporated self-employed, *i.e.*, the number of owner-managers of incorporated businesses. As mentioned earlier, this type of self-employment is excluded from the figures in official statistics. As a result, information on the numbers of owner-managers is hard to find. However, there are two sources which report more or less comparable figures on the subject. These are Bregger (1996) and Carolyn Looff, as reported in SBA (1997), p. 90. In SBA (1997), p. 91, it is reported that the number of incorporated self-employed (the owner-managers) increased with 40% between 1976 and 1979 and with 33.3% between 1979 and 1983. Bregger, p. 8, reports that the number of self-employed owners of incorporated businesses rose from 1.5 mln in 1976 to 2.1 mln in 1979 and to 2.8 mln in 1982. Note that these figures correspond to the 40% and 33.3% increases as reported in SBA (1997). However, it is clear from the latter source that the 33.3% increase relates to a four-year period and not to a three-year period.³⁰ So, we have a figure of 2.8 mln for all industries (including the agricultural sectors) in 1982 according to Bregger. In SBA (1987), p. 114, Table 4.3 –which is the same type of tabulation as the one of Carolyn Looff in SBA (1997), p. 90– a number of 2.59 million of incorporated self-employed (ISE) in May 1983 is reported for all *non-agricultural* industries. These figures seem to match quite well. Indeed the ratio 2.59/2.8 (non-agricultural ISE/total ISE) closely resembles the corresponding ratio for 1989 that can be derived from Bregger, p. 8, Table 5. Therefore, in order to construct a series of the number of incorporated self-employed between 1976 and 1994, we use the figures for 1983, 1988 and 1994 as provided by SBA (1987), p. 114, Table 4.3 and SBA (1997), p. 90, Table 3.3 (these two tabulations are consistent) and for 1976 and 1979 we apply the 40% and 33.3% increase figures to the 1983 figure of 2.59 million. We can even go back until 1967.³¹ For 1967, Fain (1980), p. 7, reports a number of 850,000 incorporated self-employed. This figure is consistent with the figures for 1976 and 1979 reported by Bregger (1996). In order to correct for the agricultural owner-managers we again apply the relative growth rate (1.5/0.85 between 1967 and 1976, an increase of 76.4%) in order to arrive at an estimate of the number of non-agricultural incorporated self-employed in 1967. See Table 4.

Table 4. Incorporated self-employed (non-agricultural), 1967-94, preliminary time series.

Year	Number (x 1000)	Source / method
1967	786	increase 76.4% 1967-76, reported by Fain (1980)
1976	1,388	increase 40.0% 1976-79, reported by SBA (1987), p. 112
1979	1,943	increase 33.3% 1979-83, reported by SBA (1987), p. 112
1983	2,590	SBA (1987), p. 114
1988	2,984	SBA (1997), p. 90
1994	3,955	SBA (1997), p. 90

Source: Own calculations, based on SBA.

³⁰ The 33.3% increase actually relates to the period 1978-82 instead of 1979-83, and to *all* industries, see SBA (1987), p. 112, Table 4.2. Because the period analysed in that table is 1979-83, the relative changes were assumed equal for the two periods.

³¹ From 1967 on, because of a change in the Current Population Survey, it is possible to identify those workers who report themselves as self-employed but have incorporated their business. Before 1967, these workers could not be identified separately from other self-employed individuals. See Bregger (1996), p. 4, and Fain (1980), p. 7.

Underestimation of numbers of OMIBs

Although with help of data reported in SBA (1987 and 1997) we have been able to produce some preliminary figures for the number of owner-managers of incorporated businesses (OMIBs), it is important to note that these figures actually understate the real number of OMIBs. This is because legally, these workers are employees of their own businesses. Now, in the labour force survey people are asked whether they are employed by a government, a private company or a nonprofit organization (in which cases they are classified as wage and salary workers) or whether they are self-employed. In the latter case, the following question is asked: “Is this business incorporated”? The people who answer ‘yes’ are still classified as wage and salary workers in the official statistics. It is these figures (the numbers of people who answer ‘yes’ on the incorporated business question) that are tabulated in SBA (1987 and 1997) and which figures we have taken over in Table 4. However, not *all* incorporated self-employed are detected by the extra question. Owner-managers who answer that they are wage and salary workers (because legally this is the case) are not identified as self-employed workers because no extra question is asked to people who respond that they are employed by a private company. So the reported numbers of incorporated self-employed only relate to people who responded (erroneously, for the purposes of the labour force survey) that they are self-employed. The figures do not include the owner-managers who (correctly, for those purposes) identify themselves as wage and salary workers. These owners cannot be identified. For more details about these questionnaires, see Bregger, p. 8, SBA (1997), p. 113, and OECD (2000), Annex 5A.

So, the reported figures are actually an understatement of the real number of incorporated self-employed. However, the magnitude of the understatement is unknown, see Fain (1980), p. 7: “Another group which cannot be separated and studied are those incorporated self-employed who report themselves initially as wage and salary employees. There is no way to determine how large this group might be or to know whether it has grown larger or smaller over time”. The problem of the unidentified owner-managers who report themselves as wage and salary worker seems to prevail not only in the United States but also in other OECD countries. This is because in general, statistical definitions are based on legal employment statuses, see Hakim (1988), p. 422: “Working proprietors or managers of incorporated businesses are classified as employees in statistical surveys, because that is their status in law and for tax and social insurance purposes. However, these distinctions are not necessarily observed by respondents to the labour force surveys that provide the main source of data on self-employment, and errors cannot always be detected and corrected by statistical offices.” So, because the official status of owner-managers is that of employee, labour force surveys do not bother to ask respondents who report themselves as employees whether or not they own an incorporated business. Therefore, their numbers are unknown, as Hakim (1988), p. 423, reports: “And we do not have any idea how many more working proprietors and managers of their own incorporated businesses are invisible in the statistics because they classified themselves –according to the rules– as employees of their own small firm”.

While Fain (1980) and Hakim (1988) in principle report on the particular measurement problems in the United States and the United Kingdom, respectively, the problems prevail in many other OECD countries as well. See for example OECD (1992), p. 185: “Data on the numbers of owner-managers of incorporated businesses are not widely

available. In addition, their propensity to report themselves as self-employed is unknown”. This implies that those owner-managers of incorporated businesses who report themselves as employee are not identified, consistent with Fain (1980) and Hakim (1988). See also OECD (2000), Annex 5A.

Correction based on number of employer firms

Because we want to obtain a plausible estimate of the number of incorporated self-employed, and we know that the series from Table 4 is too low, we make a correction on these series. For this purpose we use the number of employer firms, as yearly published in the *The State of Small Business, A Report of the President*, see for example SBA (1998), p. 118, Table A9, and SBA (1999), p. 205, Table A5. The number of employer firms is a conventional estimate for the number of OMIBs. See SBA (2000), p. 5: “Incorporated self-employment is generally defined as an employer firm [...]”. In *The State of Small Business, A Report of the President*, the number of ‘nonfarm’ employer firms is published each year, both by size-class and by industry. The term ‘farm’ relates to agriculture in narrow sense here, i.e., excluding the industries hunting, forestry and fishing. Because we work with the broad definition of agriculture, we subtract the number of employer firms in the industry ‘Agricultural services, Forestry, and Fishing’ from the total number of ‘nonfarm’ employer firms. Next, because we try to use a method for the United States that is as uniform as possible with the method for the European countries, we take only the employer firms that are smaller than 50 employees.³² This leads to the series in Table 5 below.³³

Table 5. Estimated number of incorporated self-employed (non-agricultural) in US, 1988-2008, based on number of employer firms (x 1000).

Year	Estimated number of incorporated self-employed (x 1000)
1988	4,690
1992	4,808
1996	5,157
2000	5,321
2004	5,541
2008	5,978

Source: Own calculations, based on SBA (1998), p. 118, Table A9; SBA (2000), p. A-2, Table 1.2; SBA (2009), p. 92, Table A1; and SBA (2010).

The number of employer firms is measured from 1988 onwards on an annual basis. Information on the number of employer firms prior to 1988 is not available. Therefore, for the year 1988, we compute the ratio employer firms / incorporated self-employed according to the labour force survey (see Table 4) and apply this factor to the series in Table 4 (for the years prior to 1988). The ratio equals $4,690/2,984 = 1.57$. The implicit assumption is that about two third of the OMIB-respondents in the labour force survey

³² For this purpose the number of firms with employment size between 19 and 50 is approximated at 75% of the firms with size between 19 and 100.

³³ Since in SBA (2009) the number of employer firms for 2007 and 2008 are still only preliminary estimates, we used the (annual change in the) number of incorporated self-employed as reported in SBA (2010). This leads to a slightly higher number.

classify themselves as self-employed while one third classify themselves as wage and salary employees. This may be plausible.³⁴

II.2.3 Total Number of Self-Employed

Having constructed a series for the incorporated self-employed, we are now able to construct a series for the total self-employed, according to our definition (all incorporated and unincorporated self-employed but excluding the agricultural sectors, the secondary jobs and the unpaid family workers). For the unincorporated self-employed (USE) we use the series constructed in Section II.2.1. For the incorporated self-employed (ISE) we use the series from Table 5 for 1988 and later years, and the series from Table 4, with the correction factor applied to it, for the years prior to 1988. For the years between 1972 and 1988 that are not reported in Table 4, we interpolate. This results in the series presented in Table 6.

Table 6. Total number of US non-agricultural self-employed, 1972-2008 (x 1000).

	1972	1980	1988	1996	2004	2008
USE	5,593	7,283	8,872	9,348	9,467	9,220
ISE, uncorrected (based on Table 4)	1,120	2,104				
ISE, corrected (see Table 5 for 1988-2008, and apply factor 1.57 for period 1972-86)	1,761	3,308	4,690	5,157	5,541	5,978
Total self-employed	7,354	10,590	13,562	14,505	15,008	15,198
Labour force (OECD LFS)	89,923	109,858	124,872	136,868	148,644	155,572
Business ownership rate	0.082	0.096	0.109	0.106	0.101	0.098

Source: Own calculations.

Different trends for incorporated and unincorporated business owners

From Table 6, we see that the number of incorporated self-employed (ISE) has increased faster than the number of unincorporated self-employed (USE). For example, in the period 1980-2008, the number of ISE increased with an average of 2.1% per year. In the same period the average annual growth of the number of USE was 0.8%. Apparently, more self-employed individuals choose for incorporation of their business. Why does this occur? There can be many reasons, as Fain (1980), p. 7, reports: “The move towards incorporation is a function of many complex factors. A worker will usually incorporate his business for traditional benefits of the corporate structure, including limited liability, tax considerations, and the increased opportunity to raise capital through the sale of stocks and bonds”. See also Salas-Fumás and Sanchez-Asin (2009). Simply put, when an unincorporated business expands, it becomes more attractive to incorporate the business. So, when small businesses perform well and expand, they will often choose for incorporation. In that case however, the status of the entrepreneur in the official statistics changes from self-employed to employee. See Bregger (1996), p. 8: “What undoubtedly occurs is that, as the small businesses expand and bring on employees, the owners incorporate their businesses, thereby shifting the class-of-worker classification

³⁴ In a description of labour force surveys in different countries, OECD (2000), p. 192, states that “It is assumed that when the procedure is self-assessment alone, OMIBs will mainly classify themselves as self-employed”.

to wage and salary employment. This type of transitional shuffling, while not readily measurable, is very likely an ongoing event [...]”.

From the previous paragraph, it is clear that data on USE alone can be misleading. For example, if the number of USE stays constant or decreases, one cannot tell whether this is because business ownership really decreases, or whether many small businesses have incorporated their business and as a result are not considered self-employed any more in official statistics. The above example underlines the importance of including the owner-managers of incorporated businesses in the self-employment count.

PART III: BUSINESS OWNERSHIP RATES IN 30 OECD COUNTRIES, 1972-2008

This part presents business ownership rates for 30 OECD countries. For the 23 countries originally included in COMPENDIA, the data base contains data from 1972 onwards. For the seven countries which are newly included in the data base, the starting year varies according to data availability in the OECD Labour Force Statistics. We also provide some brief explanations behind some general developments in business ownership which emerge from the data. The main focus is on business ownership in the non-agricultural industries. However, we also present data on the number of business owners in agriculture. The full COMPENDIA data base can be downloaded from the website www.entrepreneurship-sme.eu.

III.1 Non-agricultural business ownership rates for 30 OECD countries

Table 7 presents non-agricultural business ownership rates for 30 OECD countries. In 2008, business ownership rates are relatively high in Mexico and Korea, and in the Mediterranean countries. Furthermore, the Czech Republic and Australia also show relatively high non-agricultural business ownership rates in 2008. Business ownership rates are relatively low in Luxembourg, Switzerland, Japan, France, Austria, Poland and the Scandinavian countries.

Table 7 also presents the absolute number of business owners for the 30 OECD countries and it can be seen that there are almost 70 million business owners in the OECD-30 area in 2008.³⁵ USA accounts for 21.8% of the business owners, Mexico for 13.7% and the share of the European countries (including Turkey) is 43.5%. In COMPENDIA, the first year for which data on all 30 countries are available is 1991. In this year the number of non-agricultural business owners was 57,524,000, corresponding to a business ownership rate of 0.117. Between 1991-2008 the absolute number of business owners in the OECD-30 area thus increased with 21%, corresponding to an annual growth rate of 1.1%.

Figure 1 shows the business ownership rate for each country over time. The business ownership rates are observed in the period 1972-2008 for the original COMPENDIA countries. The length of the business ownership time series differs for the seven additional OECD countries; these do not start in 1972 as can be seen from the last seven graphs shown in Figure 1. Although these graphs give a good impression of the development of business ownership over time, please note that the scale of the y-axis differs across countries.

An interesting feature of the business ownership developments depicted in Figure 1 is that many developed countries display a U-shaped pattern where the business ownership rate declined for several centuries, and where the decline extinguished or even reversed into an increase in the 1970s or 1980s. In their survey of the relation between

³⁵ We define the COMPENDIA-23 area as the group of 23 countries originally included in COMPENDIA, and the OECD-30 area as the group of 30 countries included in the current version of the data base. See Tables 7-9. As of August 2010, these 30 countries comprise the whole OECD, except for Chile and Slovenia, who became OECD member countries in 2010.

entrepreneurship and economic development, Wennekers et al. (2010) explain the centuries-long decline in business ownership (self-employment) until the last quarter of the 20th century by three factors related to economic development. First, industrialisation implied a shift in sector structure from agriculture to manufacturing. Second, exploitation of economies of scale and scope in R&D, management, marketing and distribution became more and more important, in part because technological trajectories were relatively predictable (the so-called Schumpeter Mark II regime; see Schumpeter, 1950). Third, rising per capita income tends to go together with rising real wages, implying increasing opportunity costs of self-employment (Lucas, 1978). As a result, more labour market participants chose for wage-employment instead of self-employment.

As mentioned, in the last quarter of the 20th century, a trend break occurred in many countries where the decline in the business ownership rate came to a halt or even reversed into an increase. Explanations include the rise of the services sector, an increasing differentiation of consumer preferences, declining transaction costs, and a trend towards an increased preference for autonomy and self-realisation by means of self-employment. Finally, globalisation and the ICT revolution increased the importance of knowledge in the production process which provided ample opportunities for entrepreneurs (Wennekers et al., 2010).

The increase in entrepreneurship (in this paper: business ownership) associated with the increased role of knowledge in the production process is sometimes described as a shift from the ‘managed economy’ towards the ‘entrepreneurial economy’ (Audretsch and Thurik, 2000, 2004). The shift from the managed economy towards the entrepreneurial economy has not taken place in all countries simultaneously (Audretsch et al., 2002). In this respect, the developed countries are ahead of the developing countries. Nevertheless, the extent and timing of this shift differs across the developed countries as well. This also follows from Figure 1. For some countries (e.g. Austria, Germany, the Netherlands), a large part of the U-shaped pattern is visible within the time period 1972-2008, while for other countries (e.g. USA, Canada, Australia) the increase in the business ownership already started in the early 1970s so that mainly the upward part of the U-shape is visible. The USA experienced a steep increase of the business ownership rate between 1972 and 1983. Indeed, this country has been identified as the first country that experienced the shift from the managed to the entrepreneurial economy (Verheul et al., 2002).

The different extent and timing of the shift from the managed to the entrepreneurial economy is further illustrated by Figure 2. We see that for the USA the increase in business ownership is already visible in the 1970s. The UK follows in the 1980s, while for Germany the increase in the business ownership rate takes off in the 1990s. For France, after a very long declining trend, business ownership seems to increase as well starting in the 21st century. Interestingly, both at the beginning and the end of the observation period, the business ownership rates of Germany and the USA are close to each other, while these rates strongly diverge during the period in between. The different extent and timing of the shift is often related to different institutions and policies being in place in different countries (Van Stel, 2005).

Table 7. *Non-agricultural* business ownership rates in 30 OECD countries, 1972-2008.³⁶

	1972	1978	1984	1990	1996	2002	2008
Austria	0.093	0.077	0.065	0.072	0.074	0.087	0.089
Belgium	0.105	0.099	0.102	0.112	0.119	0.115	0.111
Denmark	0.082	0.079	0.066	0.063	0.064	0.067	0.070
Finland	0.066	0.059	0.066	0.082	0.080	0.079	0.088
France	0.113	0.103	0.098	0.098	0.088	0.081	0.088
Germany	0.076	0.067	0.068	0.072	0.082	0.086	0.097
Greece	0.161	0.185	0.177	0.194	0.197	0.190	0.198
Ireland	0.077	0.082	0.089	0.109	0.112	0.114	0.116
Italy	0.162	0.165	0.187	0.199	0.208	0.207	0.204
Luxembourg	0.105	0.091	0.081	0.065	0.067	0.058	0.048
The Netherlands	0.097	0.084	0.078	0.082	0.098	0.103	0.121
Portugal	0.121	0.126	0.114	0.139	0.167	0.147	0.131
Spain	0.116	0.107	0.112	0.123	0.130	0.127	0.131
Sweden	0.074	0.068	0.072	0.069	0.081	0.081	0.087
United Kingdom	0.079	0.072	0.087	0.114	0.112	0.104	0.114
Iceland	0.096	0.086	0.079	0.094	0.112	0.106	0.103
Norway	0.097	0.087	0.087	0.077	0.071	0.065	0.084
Switzerland	0.063	0.064	0.065	0.069	0.077	0.074	0.068
USA	0.082	0.090	0.106	0.108	0.106	0.098	0.098
Japan	0.125	0.130	0.126	0.116	0.101	0.091	0.084
Canada	0.079	0.085	0.100	0.108	0.128	0.124	0.120
Australia	0.126	0.160	0.160	0.155	0.159	0.158	0.143
New Zealand	0.106	0.095	0.114	0.118	0.139	0.136	0.129
COMPENDIA-23	0.100	0.101	0.109	0.113	0.111	0.106	0.107
Czech Republic	.	.	.	0.010	0.112	0.146	0.152
Hungary	.	.	.	0.070	0.120	0.103	0.097
Korea	.	.	0.173	0.173	0.204	0.215	0.203
Mexico	.	.	.	.	0.188	0.204	0.211
Poland	.	.	0.030	0.058	0.077	0.077	0.091
Slovak Republic	.	.	.	0.006	0.053	0.065	0.117
Turkey	.	.	.	0.127	0.125	0.128	0.135
OECD-30	.	.	.	.	0.120	0.118	0.121
Total number of business owners (× 1,000)							
COMPENDIA-23	30,061	33,203	38,364	42,906	45,282	45,434	48,513
OECD-30	.	.	.	.	61,735	64,268	69,591

Source: *COMPENDIA 2008.1*

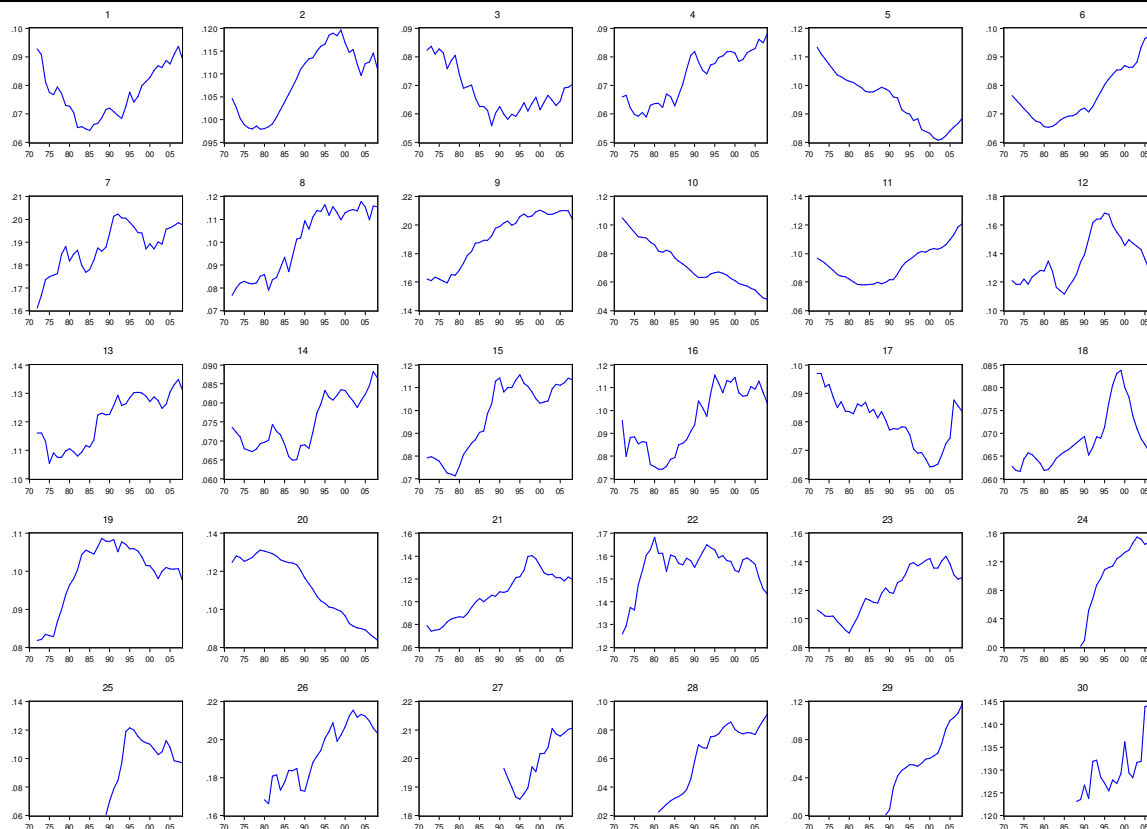
Business ownership rates refer to the number of self-employed (unincorporated and incorporated) as a fraction of the labour force.

Germany refers to West-Germany until 1991.

³⁶ There may be some discrepancies between the numbers presented in this table and those presented in Table 5 of Van Stel (2005) (p. 119). This is caused by updated business ownership data due to revised figures published in recent versions of OECD Labour Force Statistics.

Developments in business ownership in the four Central and East European (CEE) transition economies (the Czech and Slovak Republics, Hungary and Poland) since 1990 are very remarkable, and these are described separately in part IV of this study.

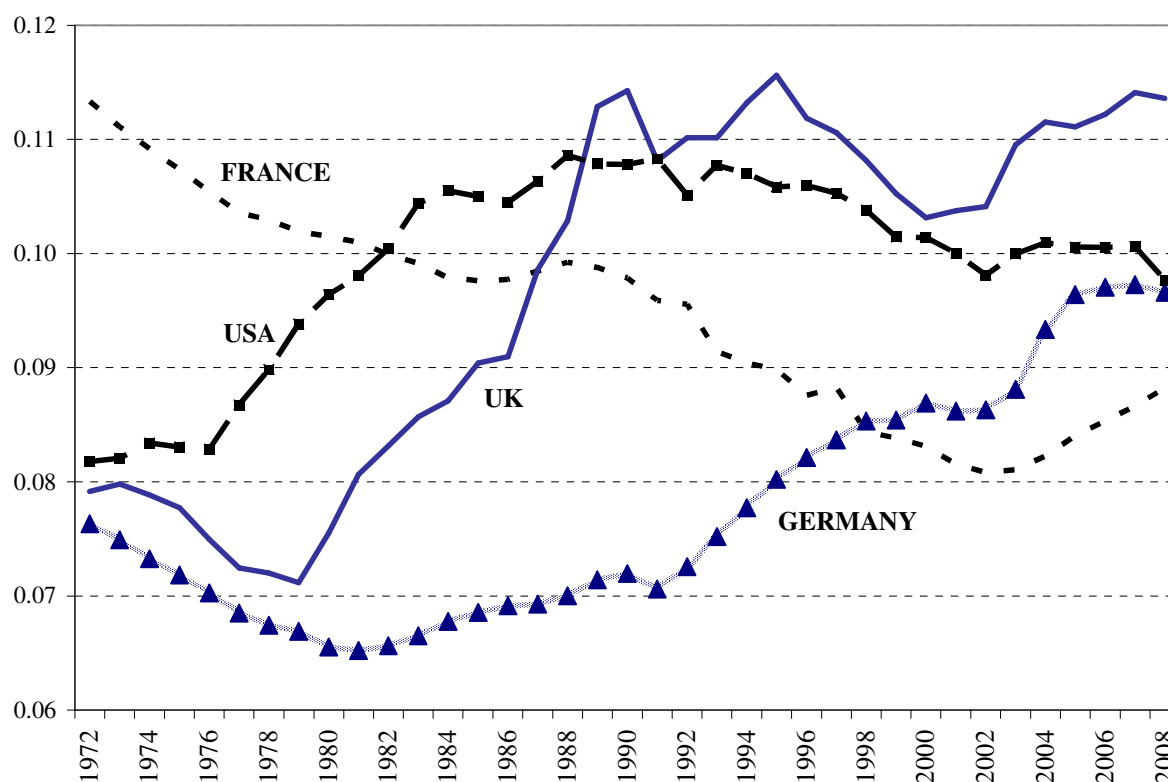
Figure 1. Development in *non-agricultural* business ownership rates in 30 OECD countries, 1972-2008.



- | | | |
|---------------|--------------------|--------------------|
| 1 Austria | 11 The Netherlands | 21 Canada |
| 2 Belgium | 12 Portugal | 22 Australia |
| 3 Denmark | 13 Spain | 23 New Zealand |
| 4 Finland | 14 Sweden | 24 Czech Republic |
| 5 France | 15 United Kingdom | 25 Hungary |
| 6 Germany | 16 Iceland | 26 Korea |
| 7 Greece | 17 Norway | 27 Mexico |
| 8 Ireland | 18 Switzerland | 28 Poland |
| 9 Italy | 19 USA | 29 Slovak Republic |
| 10 Luxembourg | 20 Japan | 30 Turkey |

Source: COMPENDIA 2008.1

Figure 2. Development of *non-agricultural* business ownership rates in four OECD countries, 1972-2008.



Source: *COMPENDIA 2008.1*

III.2 Agricultural business ownership rates for 30 OECD countries

Next to the non-agricultural business ownership rate, we also pay attention to the rate of self-employment in the sector agriculture, hunting, forestry and fishing, or simply the agricultural sector. Table 8 gives an overview of the business ownership rates in this sector across 30 OECD countries in the period 1972-2008. The agricultural business ownership rate primarily reflects the importance of the agricultural sector in the economy under consideration. The table shows that, in 2008, the agricultural business ownership rates are highest in some of the Mediterranean countries namely Turkey (0.106), Portugal (0.088) and Greece (0.073), and in Poland (0.083). The lowest business ownership rates in 2008 are found in the USA, the Czech Republic, Germany, the Slovak Republic, the UK, Canada, Luxembourg and Belgium (all below 1% of the labour force).

Table 8 also shows that there are about 13.5 million self-employed (excluding unpaid family workers) in the agricultural sector in the OECD-30 area in 2008. Of these 13.5 million, the highest shares can be found in Turkey (20.8%), Mexico (18.7%) and Poland (10.5%). The general pattern since 1972 is a constant decline in the number of business owners in the agricultural sector.³⁷

³⁷ According to Table 8, Switzerland seems to be an exception. However, for this country the development of agricultural business ownership over time is less reliable as OECD Labour Force Statistics provides no separate numbers of self-employed in agriculture and non-agriculture. See Van Stel (2003), p. 37.

Table 8. *Agricultural* business ownership rates in 30 OECD countries, 1972-2008.

	1972	1978	1984	1990	1996	2002	2008
Austria	0.097	0.062	0.051	0.043	0.041	0.032	0.029
Belgium	0.028	0.021	0.018	0.015	0.012	0.009	0.009
Denmark	0.049	0.040	0.029	0.025	0.015	0.013	0.011
Finland	0.108	0.080	0.076	0.055	0.039	0.032	0.026
France	0.066	0.050	0.040	0.030	0.020	0.016	0.013
Germany	0.028	0.019	0.015	0.012	0.008	0.008	0.007
Greece	0.220	0.186	0.152	0.130	0.106	0.092	0.073
Ireland	0.163	0.137	0.102	0.099	0.073	0.050	0.041
Italy	0.078	0.064	0.049	0.036	0.027	0.021	0.016
Luxembourg	0.063	0.045	0.031	0.020	0.012	0.009	0.008
The Netherlands	0.033	0.028	0.026	0.023	0.021	0.016	0.014
Portugal	0.158	0.119	0.102	0.080	0.087	0.092	0.088
Spain	0.094	0.081	0.066	0.045	0.033	0.024	0.015
Sweden	0.026	0.026	0.023	0.019	0.016	0.012	0.012
United Kingdom	0.010	0.010	0.009	0.010	0.009	0.006	0.007
Iceland	0.081	0.065	0.052	0.043	0.041	0.034	0.017
Norway	0.058	0.042	0.035	0.033	0.025	0.020	0.015
Switzerland	0.020	0.020	0.021	0.022	0.024	0.023	0.021
USA	0.025	0.020	0.017	0.014	0.011	0.009	0.005
Japan	0.066	0.054	0.040	0.033	0.025	0.021	0.019
Canada	0.030	0.024	0.022	0.019	0.016	0.010	0.008
Australia	0.043	0.037	0.037	0.031	0.025	0.021	0.016
New Zealand	0.082	0.078	0.058	0.050	0.045	0.038	0.026
COMPENDIA-23	0.048	0.038	0.031	0.025	0.019	0.015	0.012
Czech Republic	.	.	.	.	0.008	0.007	0.006
Hungary	.	.	.	.	0.024	0.021	0.012
Korea	.	.	0.108	0.082	0.063	0.055	0.043
Mexico	.	.	.	.	0.091	0.076	0.056
Poland	.	.	0.169	0.139	0.126	0.104	0.083
Slovak Republic	.	.	.	.	0.002	0.003	0.007
Turkey	.	.	.	0.151	0.138	0.130	0.106
OECD-30	.	.	.	.	0.035	0.029	0.023
Total number of business owners (× 1,000)							
COMPENDIA-23	14,272	12,401	10,812	9,352	7,808	6,628	5,612
OECD-30	.	.	.	.	17,869	15,997	13,513

Source: COMPENDIA 2008.1

Business ownership rates refer to the number of self-employed (unincorporated and incorporated) as a fraction of the labour force.

Germany refers to West-Germany until 1991.

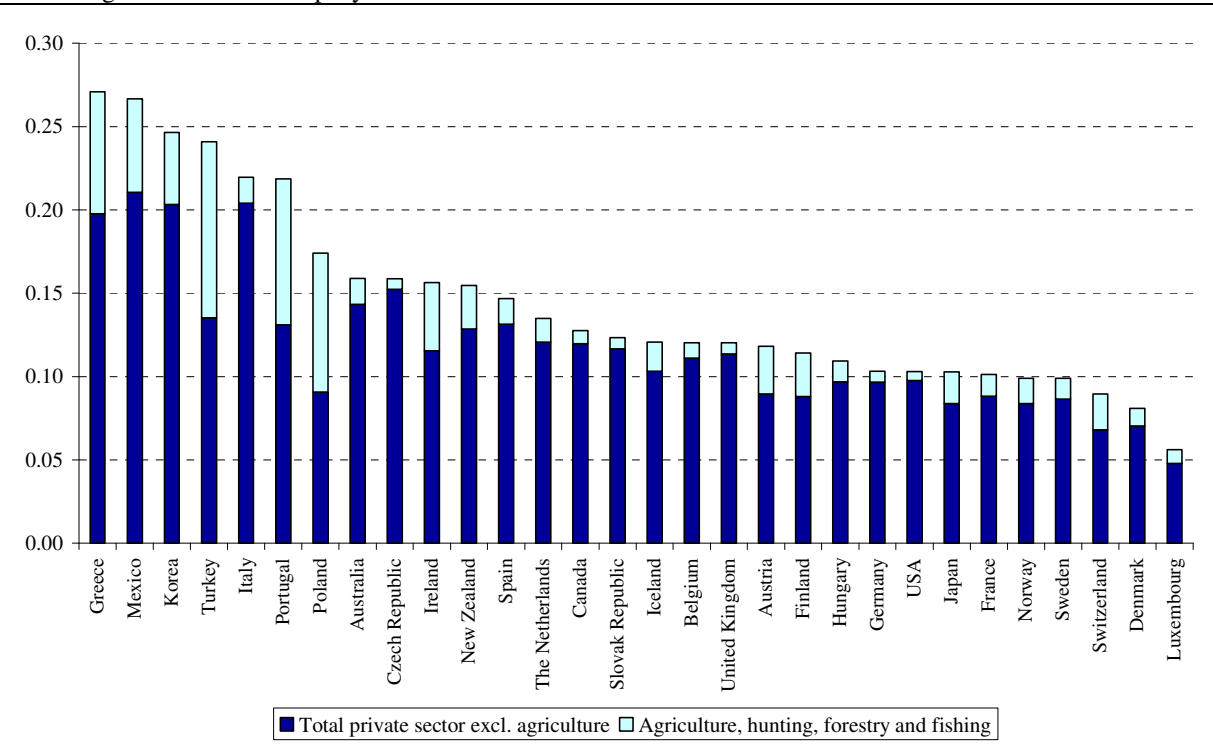
III.3 Business ownership rates in total private sector for 30 OECD countries

When we take a look at the business ownership rates in the total private sector (i.e. the aggregate of the non-agricultural *and* agricultural sectors), it follows that in 2008 the OECD countries with the highest levels of business ownership are Mediterranean countries: Greece (with an overall business ownership rate of 0.271), Turkey (0.241), Italy (0.220) and Portugal (0.219). With business ownership rates of 0.267 and 0.247 respectively, Mexico and Korea are also characterized by high overall business ownership rates. Focusing on the other OECD countries which are newly added to COMPENDIA, Poland and Czech Republic also score relatively high (with rates of 0.174 and 0.159 respectively). The lowest rates are found in Luxembourg (0.056), followed by Denmark (0.081), Switzerland (0.089), Norway and Sweden (0.099), and France (0.101). See Figure 3 for an overview of these total self-employment rates in 2008 and Table 9 for developments over time.

Figure 3 also provides insight in the shares of the agricultural and non-agricultural private sectors in the total self-employment rates. In most countries, the share of non-agricultural business owners is by far the highest. However, in Poland, Portugal and Turkey, agricultural and non-agricultural business ownership is quite evenly distributed.

Finally, from Table 9 we observe that there are currently 83 million business owners in the OECD-30 area, corresponding to 14.4% of the labour force.

Figure 3. Total business ownership rates for 30 OECD countries in 2008, subdivided into non-agricultural and agricultural self-employment rates.



Source: COMPENDIA 2008.1

Table 9. Business ownership rates in 30 OECD countries, total private sector, 1972-2008.

	1972	1978	1984	1990	1996	2002	2008
Austria	0.189	0.139	0.116	0.115	0.115	0.119	0.118
Belgium	0.133	0.120	0.121	0.128	0.131	0.124	0.120
Denmark	0.131	0.119	0.095	0.088	0.079	0.079	0.081
Finland	0.174	0.139	0.142	0.137	0.119	0.111	0.114
France	0.179	0.153	0.138	0.127	0.108	0.097	0.101
Germany	0.104	0.087	0.083	0.084	0.091	0.094	0.103
Greece	0.381	0.371	0.329	0.323	0.303	0.282	0.271
Ireland	0.240	0.219	0.191	0.208	0.185	0.164	0.156
Italy	0.240	0.229	0.236	0.235	0.235	0.228	0.220
Luxembourg	0.168	0.136	0.112	0.085	0.079	0.067	0.056
The Netherlands	0.130	0.112	0.104	0.105	0.119	0.119	0.135
Portugal	0.279	0.245	0.216	0.220	0.255	0.239	0.219
Spain	0.210	0.189	0.178	0.168	0.163	0.152	0.147
Sweden	0.099	0.094	0.094	0.087	0.097	0.092	0.099
United Kingdom	0.089	0.082	0.096	0.124	0.121	0.110	0.120
Iceland	0.176	0.151	0.130	0.137	0.153	0.140	0.121
Norway	0.155	0.129	0.122	0.110	0.096	0.085	0.099
Switzerland	0.083	0.085	0.086	0.091	0.101	0.097	0.089
USA	0.107	0.110	0.123	0.122	0.117	0.107	0.103
Japan	0.190	0.184	0.166	0.149	0.127	0.112	0.103
Canada	0.109	0.109	0.121	0.127	0.144	0.133	0.128
Australia	0.169	0.197	0.197	0.186	0.184	0.179	0.159
New Zealand	0.188	0.174	0.172	0.169	0.185	0.174	0.155
COMPENDIA-23	0.148	0.139	0.139	0.137	0.130	0.122	0.120
Czech Republic	.	.	.	.	0.120	0.153	0.159
Hungary	.	.	.	.	0.144	0.124	0.109
Korea	.	.	0.282	0.255	0.267	0.270	0.247
Mexico	.	.	.	.	0.278	0.280	0.267
Poland	.	.	0.200	0.197	0.203	0.181	0.174
Slovak Republic	.	.	.	.	0.056	0.069	0.123
Turkey	.	.	.	0.278	0.263	0.258	0.241
OECD-30	.	.	.	.	0.154	0.148	0.144
Total number of business owners (× 1,000)							
COMPENDIA-23	44,333	45,604	49,175	52,258	53,089	52,062	54,126
OECD-30	.	.	.	.	79,604	80,265	83,104

Source: COMPENDIA 2008.1

Business ownership rates refer to the number of self-employed (unincorporated and incorporated) as a fraction of the labour force.

Germany refers to West-Germany until 1991.

PART IV: BUSINESS OWNERSHIP IN FOUR CEE TRANSITION ECONOMIES, 1989-2008

IV.1 Introduction

The country study of Poland (see Section II.1) generally confirmed the usefulness of labour force survey (LFS) data as an indicator of the level of entrepreneurial activity in a transition environment. However, we identified several issues that may result in discrepancies between the LFS and Enterprise Survey (ES) data. First, self-employment as secondary activity is not included in the LFS count but it increases the number of registered businesses. Second, the use of commission and task contracts for self-employment as primary activity is reflected in the LFS but not in the ES as it does not involve registration of the new business. A third source of discrepancy is the (unknown) extent to which owner-managers of incorporated businesses (OMIBs) are included in LFS. The analysis of the Polish case also points to the limits of data that is derived from the official business registers.

In this section we make an attempt to explain the differences in the levels of business ownership rates over time in four Central and East European (CEE) transition economies: the Czech Republic, Hungary, Poland and the Slovak Republic. These four nations, although differing in size and level of socio-economic development, have evolved historically through often overlapping and interlinked routes; in the last 100 years, all of them gained independence after World War I and, after a short period of building the fundamentals of modern states during 1918-1939, fell under Nazi occupation and later Soviet dominance, which ended only in 1989. The Czech and Slovak Republics have a long tradition of functioning as a two-nation state and were separated only as of the beginning of 1993.

Despite those similarities, the business ownership rates differed substantially in these four nations at the beginning of the transformation process in 1989, and there were also significant differences as to the trends in business ownership during the period from 1989 to 2008. In the course of explaining those differences, we refer to several important factors identified in the extant literature: the role of the institutional environment, experiences with entrepreneurship under communism, the dynamics of systemic transformation after 1989, implementation of policies related to the SME sector and the business climate in general, and the level of development and growth of GDP. Based on that, we develop recommendations about the areas and issues that require additional research.

IV.2 Trends in business ownership rates 1989 – 2008

Because of major differences in the availability and quality of relevant data, our empirical analysis is divided into two sub-periods: 1989-1993 and 1994-2008. From 1994 onwards, a continuous series of comparable LFS data for all four countries is available as a result of the strengthening of the national statistical offices, the restructuring of their functions and operating patterns, and the adoption of uniform Eurostat/OECD standards. On the other hand, for the 1989-1993 period, only sketchy

information from secondary sources is available, and there is limited information about how the information was compiled. Therefore, it is difficult to compare the two periods.

1989 – 1993

Except for Poland, for which self-employment numbers are reported in OECD LFS, for the 1989–1993 period we rely on the OECD data published by Forst (1996), which covers the period 1989–1994. Although we do not have sufficient background information, we believe that for the Czech and Slovak Republics and Hungary, the Forst data were compiled following the LFS principles.³⁸ For these three countries the COMPENDIA data base uses the developments over the period 1989–1994, as implied by the number of non-agricultural self-employed as published in Forst (1996), to construct business ownership numbers for this period. See also Section I.3.

Because of the different policies related to the private sector under communism, which are discussed in greater detail in the next sub-section, the levels of entrepreneurial activity at the beginning of transition in 1989 were significantly different among the four countries: Hungary and Poland had a sizeable private sector before transition, and the private sectors in the Czech and Slovak Republics were almost non-existent. Hungary, the unquestioned champion of entrepreneurship under communism in the CEE region, enjoyed a business ownership rate in 1990 comparable to that of established market-economy countries like Austria and Germany (7%).

During the 1989–1993 period, the business ownership level in both Hungary and Poland increased, but the Czech and Slovak Republics were catching up at a much faster rate. The growth of entrepreneurial initiative was particularly visible in the Czech Republic, which surpassed Poland in business ownership in 1993. However, some sources indicate even higher entrepreneurial activity in the Czech Republic during the early phase of transition. For example, both Johnson and Loveman (1995) and Mladek and Hoshi (2003) estimated the number of unincorporated businesses in the Czech and Slovak Federated Republic (CSFR) in 1991 as above 1.1 million, 3.5 times higher than the 320,000 level given by Forst (1996). Because there is little doubt that the private sector was practically nonexistent in the CSFR before 1989, the higher figure should be treated with caution. Johnson and Loveman (1995), as well as Winiecki, Benacek and Laki (2004), explained the wide differences in the estimated levels of business ownership as the result of the character of business registrations, which were often aimed at avoiding or decreasing wage taxes. Another explanation of the sizeable discrepancy is that the higher business ownership data originated from the official Business Register where, based on Polish experience, one may expect a significant proportion of inactive firms. However, neither of these explanations should undermine the high level of genuine entrepreneurial spirit in the Czech Republic, which was clearly visible even during the early days of transition (Winiecki, Benacek and Laki, 2004, p. 90).

1994 – 2008

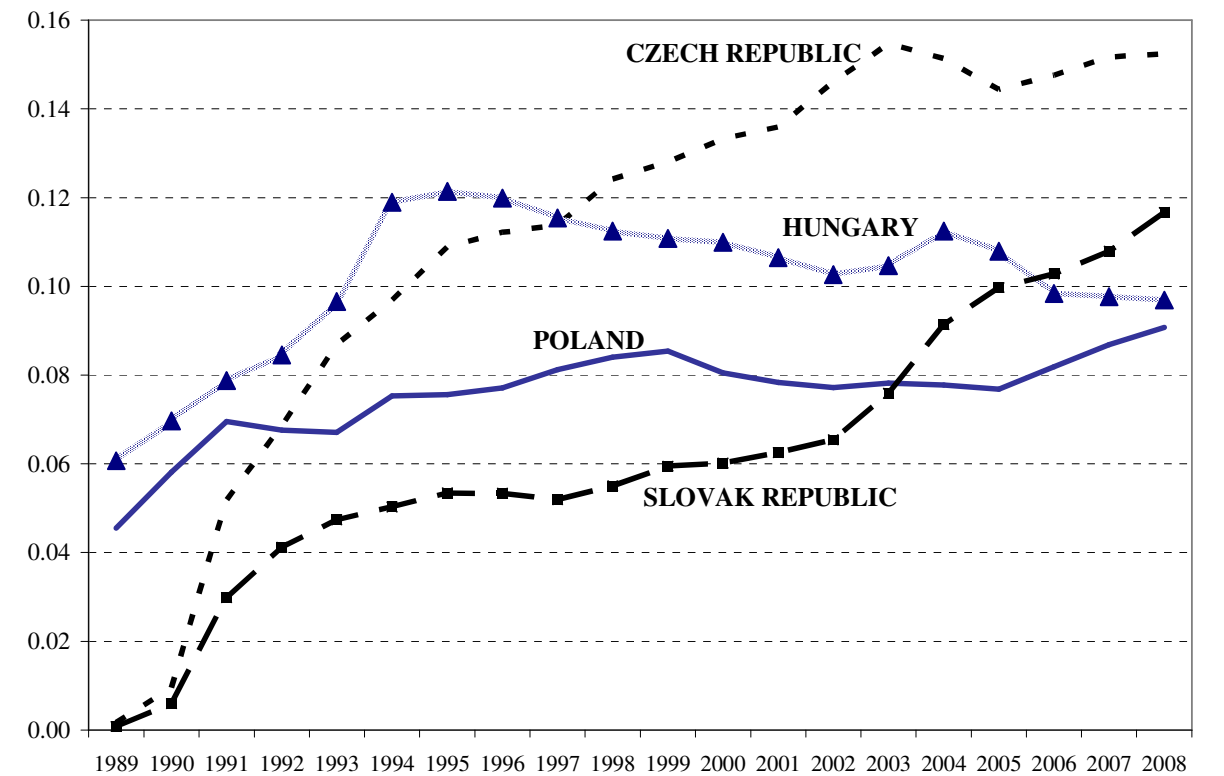
For the “border” year of 1994, where data from two OECD-based sources are available, the figures quoted by Forst (1996) indicate somewhat lower rates of business ownership in the Czech Republic and higher rates for Hungary and Poland compared to the

³⁸ The numbers reported for 1994 (which year overlaps with OECD LFS) in Forst (1996) are quite close to the numbers reported in OECD Labour Force Statistics 1988-2008.

COMPENDIA data; however, the maximum differences are only in the range of 12%. In the following years, contrasting patterns have been observed with respect to the fluctuations of business ownership rates (Figure 4). In Hungary, with the business ownership rate at the OECD average level in 1994 (11.9%), a steady declining trend can be observed after 1996. In Poland, the business ownership rate leveled off during 1994-2006, fluctuating within the range of 7.5%-8.5%. However, recently the business ownership rate increased from 7.7% in 2005 to 9.1% in 2008. On the other hand, both the Czech and Slovak Republics experienced a rapid increase in the business ownership rates during the period 1994-2008. Starting from a solid base of almost 10% in 1994, the business ownership rate in the Czech Republic had increased to 15.2% by 2008; similarly, starting from a much lower base of 5.0%, the Slovak Republic had more than doubled its business ownership rate by 2008 to 11.7%.

The most surprising outcome of the developments and trends in the business ownership rates in the CEE region is that the two countries with practically nonexistent private sectors under communism had, by 2008, surpassed both Hungary and Poland, where the private sector, at least in terms of the number of private businesses, was substantial before 1989.

Figure 4. Development in non-agricultural business ownership rates in four CEE countries, 1989-2008.



Source: COMPENDIA 2008.1

IV.3 Explaining the differences in business ownership under transition

In this section we will attempt to explain the different developments in business ownership for the four countries, as depicted in Figure 4.

a) Institutional factors

Within the new institutional economic analytical framework, there are several levels of institutions, the highest of which is that of informal, institutionalized rules shaped over the centuries, including norms, customs, traditions and religions (Williamson, 2000). Winiecki (2004) adapted this framework to the analysis of conditions that affected transition success from the communist to the free market system. According to Winiecki, what played a decisive role in the rapid development of the new private sector under transition was not so much the communist legacy as the pre-communist legacy, which he called “civilization fundamentals.” Therefore, it is useful to determine how close the informal rules that existed before communism were to the kind of institutional environment necessary to the efficient functioning of the free market system that emerged after the communist break-up. The informal rules that shape civilization fundamentals include freedom of entrepreneurship, perception of the general need for law and order, and generalized trust. To develop his argument, Winiecki pointed out that practically all successful transition economies in Europe were those that belonged historically to Western Christendom, whereas the “laggards” fell outside the eastern borders of Christianity.

The arguments raised by Winiecki are powerful as they pertain to the differences between Poland and Russia, the example the author used. However, they are of limited use in explaining the differences among the Czech and Slovak Republics, Hungary and Poland because these countries all fall within the historic borders of Western Christendom. Still, by taking into account the variations in their civilization fundamentals, one may point to particular historic institutional traditions that could explain the phenomenon of Czech entrepreneurship revival. Benacek (1995) stressed the role of the Czech Protestant traditions, which date back to the 1780s, and to the proliferation of liberal and cosmopolitan ideas in the 19th century. These factors, combined with the very high level of industrial development in the area, provide a fruitful historic base on which Czech entrepreneurship could regain its strength after the 45 “lost” years under Soviet dominance.

A similar argument based on the pre-communist legacy concept can be developed with respect to the formal rules, particularly the legal framework for starting and running a business. Here we may refer to the concept of legal origin developed by La Porta et al. (1999), who distinguished between the traditions of common law and civil law, where common law is typically associated with less government inclination to intervene in the economy and, therefore, greater favorability for entrepreneurship.

The original concept (La Porta et al., 1999) identified within the civil law tradition a socialist legal system that prevailed in the communist economies. However, following widespread criticism, this sub-category was eliminated in the most recent formulation (La Porta, Lopez-de-Silanes and Shleifer, 2008). What seems especially important, however, is the level of pre-communist maturity of the legal system, particularly whether regulations that affect business operations were established before World War II. All four countries under study managed to shape the basics of business law during their short period of independence from 1918 to 1939. Although it does not seem to be useful in explaining differences in the levels of business ownership rates among the four countries, this legal maturity had a practical impact during the early days of transition because the necessary laws could be quickly restored and/or updated. For example, the

sophisticated Polish Commercial Code of 1934 was not cancelled under communism, even though most of its regulations were not compatible with the centrally planned system. Under the new circumstances after the fall of communism, the Code was found to be extremely useful, especially for setting up limited liability companies, which became the most popular business vehicles for setting up larger domestic operations and subsidiaries of foreign companies.

b) Experiences with entrepreneurship under communism

The experiences with entrepreneurship under communism varied significantly among the four countries under study. The private sector was practically liquidated in Czechoslovakia by the mid-1960s, whereas it was allowed to exist as a “marginal addition” to the dominating state-owned sector in Hungary and in Poland. The relevant policies in both countries were implemented in waves, with periods of greater flexibility interspersed with tightened measures aimed at curbing the size and the “excessive richness” of the private business owners. In the case of Poland, an important additional factor was that foreign travel was much less restricted than it was in the other three countries. Therefore, many Poles —particularly the young— had exposure to the free market system from working abroad (often illegally) and (particularly in the 1980s) from the chance to engage in “individual international trade” (Johnson and Loveman, 1995, p. 232).

In view of these developments, one may argue that Hungary and Poland were much better prepared for the “entrepreneurial take-off” in 1989 than the Czech and Slovak Republics were. First, at the verge of the systemic transition, Hungary and Poland had many individuals with at least some experience in starting and running small private business, albeit in the very peculiar and restrictive environment of a centrally planned economy. Second, these businesses were firmly legal with clearly defined rules on registration requirements, tax obligations, restrictions as to the scope of activities, maximum number of employees, and so on. This observation contradicts the prevailing approach (e.g., Peng 2001), which has pointed to the “gray” underground character of the private sector under communism. While this character may have applied in the former Soviet Union, it definitely did not in Hungary and Poland. Third, some formal regulations designed specifically for the private sector could be easily adapted to the new market-economy environment. For example, the simplified tax scheme for small-scale craft activities currently in use in Poland relies heavily on regulations introduced in the 1980s.

However, there were important negative implications of the “communist embeddedness” of the incumbent private sector in Hungary and Poland, particularly the business skills, attitudes, ethical and moral standards and operating routines developed while conducting business under communism that became obsolete impediments when the rules changed. The lack of customer focus serves as a good example here; under communism, clients were generally not looked after because of the acute shortage of consumer goods and services, so customers waited in lines and got what they got. The major concern of the private business owners operating within the “shortage economy” was getting access, often through informal and/or illegal arrangements, to various production inputs, materials, and components—not customer service. As a result, they were ill-equipped to

operate within a market environment where the crucial success factor related to building a strong client base.

Since the communist authorities in Hungary and Poland often switched between flexible policies toward the private sector to tightened measures, the private sector in both countries followed a “low profile” strategy to survive the instability. This strategy was reflected in deliberate avoidance of demonstrations of excessive richness but also in limited market visibility. This strategy obviously contrasts with the proactive, dynamic orientation required when operating within free-market environment.

While the extant transition literature has focused on the impact of rapidly changing conditions on the survival of the state-owned enterprises, in fact the “transition shock” also brought similar challenges to the incumbent private sector (Winiecki, 2004), as exemplified by the words of an incumbent entrepreneur: “*In 1989 Poland changed to such an extent that, in order to continue my prosperous business, I had to start de novo. The same business, in a different environment, became a new kind of activity*” (Osborn and Slomczynski, 2005, p. 88).

Some empirical data has suggested that the overall balance of already being in business at the time of transition, on the one hand, and “communist embeddedness,” on the other, was not positive for the incumbent private sector and that it was the newly established entrepreneurial firms that were the key driving force of the transition process. For example, Cieslik and Kaciak (2009a) found that the incumbent private sector was only marginally engaged in the advanced forms of entrepreneurship, namely exporting; in 2003, among approximately 50,000 exporters, only 1,200 private firms were established before 1989 and they provided only 4% of the Polish commodity exports. At the same time, 40,500 domestic exporting firms established after 1988 contributed 32% of the export volume. (54% of export volume was generated by 7,100 foreign subsidiaries and 10% by 1,200 state-owned enterprises.) This paucity of pre-1989 exporters is surprising, given that many Poles were engaged in individual (informal) international trade, particularly in the 1980s, and the income derived from such operations helped to build a capital base for setting up many genuine private businesses after the collapse of the communist system.

While assessing the overall impact of the sizeable private sector under communism in Hungary and Poland, however, one should avoid unnecessary oversimplification of its negative impact on the entrepreneurial dynamics during transition because of the multi-dimensional role played by the sector under communist rule. Still, a limited statement about the lack of evidence for a positive role of the incumbent private sector seems justified.

c) The speed of market-oriented reforms and policy measures that enhance entrepreneurship

The impact of the speed and magnitude of macro-economic reforms can be studied from the perspective of the individual decision to start a business and/or from the perspective of how the reforms affected the growth of the private sector in general. The research conducted by Smallbone and Welter (2001) on a number of transition economies in the 1990s demonstrated that the need for independence and autonomy was by far the most

common reason for starting a business in these countries. Clearly, the radically changing external environment, particularly the quick dismantling of the state-owned sector, could prompt such individual decisions. To account for the transition-specific factors in a person's considering entrepreneurship as a life-path option, Cieslik and Kaciak (2009a) adopted Shapero's model of an entrepreneurial event (Shapero and Sokol, 1982). The "systemic displacement" in the model reflects the negative emotions invoked by working in highly bureaucratic state-owned enterprises, government or municipality organizations with very limited opportunities to demonstrate initiative. The model's "between systems" effect encompasses the overall feeling that the communist system has collapsed irreversibly and the new era has begun. At the same time, the numerous businesses being started by former colleagues from work, friends and relatives creates a "positive pull" through demonstration effects, prompting similar decisions to start businesses by people with no previous experience or relevant family backgrounds.

With respect to the magnitude and speed of major macro-economic reforms that paved the way for the market-based economy, Poland emerged as the clear leader among transition economies in the CEE region. As early as 1990, Poland put in force a set of radical regulatory changes that introduced free-market mechanisms and eliminated protective measures for the state-owned sector. In other countries—Hungary and then the Czechoslovak Federated Republic (CSFR)—the respective reforms were introduced more gradually.

The empirical data that demonstrates the significant increase of the new entrepreneurial start-ups in Poland during 1989-1992 seems to support the argument that the "shock therapy" during the initial phase of systemic transition was an important factor in the formation of the new private sector. However, there were similar trends during this period in other CEE countries, particularly the Czech Republic and Slovakia, where the overall pace of systemic transformation was much slower at that time, suggesting that there were other important factors contributing to the increase in the private sector.

The effectiveness of the "shock therapy" versus that of gradual transition has been the subject of a vivid economic and political debate, particularly in Poland, with strong voices of criticism pointing out the unnecessary hardships of the shock therapy, particularly for the employees of the state-controlled sector (e.g., Kolodko, 2000). Johnson and Loveman (1995) argued that, from the perspective of the new private sector, the overall impact of the shock therapy was positive because it shaped the macro-economic conditions that were necessary for accelerated growth. However, based on the comparative analysis of specific policy measures related to the development of the small business sector in Hungary and Poland, Fogel and Zapalska (2001) found "no evidence on the appropriateness of macro-economic policies to suggest that slower or more gradual policies have overall a greater positive effect on SME development and entrepreneurial growth" (p. 50).

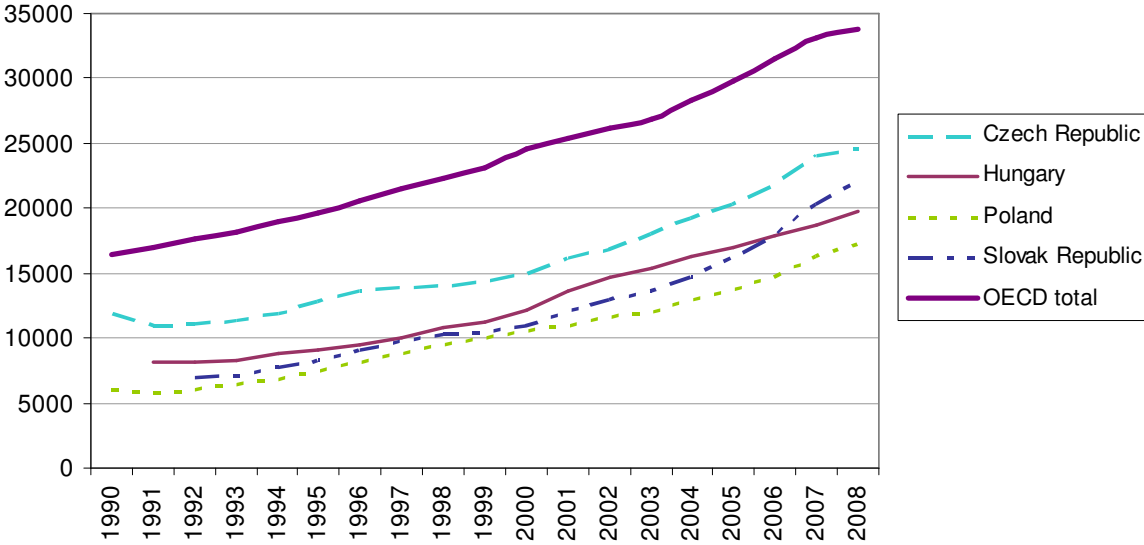
Similarly inconclusive findings result from analyzing the impact of the overall business climate, particularly the impact of ease of doing business on business ownership. Using the aggregated World Bank index as a measure of the ease of doing business in 2009 (World Bank, 2009), at the bottom of the list were both the Czech Republic and Poland, as the most heavily regulated of EU countries, with the exception of Italy and Greece. Slovakia and Hungary, ranked in the middle of the list. Thus, the rankings of the four countries in terms of ease of doing business do not correspond with the rankings based

on the level of business ownership. This conclusion does not necessarily reflect transition-specific conditions but reinforces a more general argument raised by Van Stel, Storey and Thurik (2007) regarding the rather insignificant impact of administrative considerations on the level of entrepreneurial activity.

d) Level of development and the growth of GDP during transition

Data from the four CEE countries show considerable differences in their GDP per capita in the early 1990s, when the transition process had just started, particularly between the most industrialized of the four, the Czech Republic and the least developed Poland (Czech income per capita was almost double that of Poland in 1992). During 1992-2008 all four countries experienced growth in GDP per capita, but the pace of growth was much faster in the countries with a lower base: Poland and Slovakia. In fact, the growth of GDP achieved in Slovakia was remarkable and, as a result, Slovakia surpassed Hungary in GDP per capita in 2007 (Figure 5). Consequently, the distance between the highest (Czech Republic) and the lowest (Poland) GDP per capita shrank from 46% in 1992 to 30% in 2008.

Figure 5. GDP per capita in four CEE countries, 1990-2008 (US dollars, current prices and PPPs).



Source: OECD (2010)

The complex relationship between entrepreneurship and the level of economic development has been subject to considerable debate in the extant literature (for an overview, see Wennekers *et al.*, 2010). Following the classification of stages of development put forward by the World Economic Forum (Schwab, 2009), both the Czech and Slovak Republics have been categorized as innovation-driven economies, whereas Hungary and Poland have been classified as being in transition from efficiency-driven to innovation-driven. While an innovation-driven economy is associated with many entrepreneurs trying to commercialise new innovative ideas in the market, in efficiency-driven economies the exploitation of economies of scale by large firms plays a more dominant role and there is typically less room for small-scaled entrepreneurship. Although several other factors may explain the different business ownership

developments in the four countries, the pattern in Figure 4, where the business ownership rate in the innovation-driven countries Czech Republic and Slovak Republic grows faster than in Hungary and Poland, seems to be consistent with this explanation.

IV.4 Conclusion

A comparative analysis of business ownership in four CEE transition economies showed substantial differences in the levels of business ownership at the outbreak of systemic transformation and diverse growth patterns after 1990. The most surprising outcome of the developments taking place in the course of transition from the centrally-planned to a market economy system was that countries that lagged behind in business ownership at the early stage of the transition process, the Czech and Slovak Republics, eventually emerged as the leaders in entrepreneurial activity, surpassing Hungary and Poland, which had a more sizeable private sector under communism. These developments can only partially be explained by the key variables identified in the extant literature, both transition-specific and those of a more general nature.

To offer a more meaningful contribution in this area, additional research in some specific directions will be necessary. First, a comparative study of the methodologies used in compiling relevant data on business ownership in each country will help determine to what extent the differences identified stem from methodological inconsistencies. Next, we need to explore in greater detail the distribution of entrepreneurial activity by major categories: the size of informal versus formal entrepreneurship and the share of marginal-scale entrepreneurial engagements, that is, those for which the business is a secondary activity, dependent self-employment and those using commission and task contracts without registering the business. The distribution between the solo entrepreneurs and employers in each country is worth considering, as well.

Future comparative research should also focus on the ambitious segment of entrepreneurship and its contribution to the growth of employment. Here we shall refer to the findings of Cieslik and Kaciak (2009b), which demonstrated a remarkably high proportion of high-growth firms and gazelles among Polish manufacturing SMEs, compared to other OECD member countries (OECD, 2008).

Finally, a very promising and largely unexplored research avenue relates to the historic coincidence of two fundamental developments that took place towards the end of the twentieth century: the collapse of communism and the widespread dissemination of information and communication technologies (ICT). As a general-purpose technology (GPT) that spreads across and has profound effects on all key sectors of economic and social life (Bresnahan and Trajtenberg, 1995), the ICT represents surely one of the “great leaps” in the history of mankind. What is of particular importance in the context of business ownership is that the ICT revolution—particularly Internet technologies—has been extremely favorable to entrepreneurship initiatives because it has reduced the negative effects of the “liability of newness” (Morse, Fowler and Lawrence, 2007). Particular beneficiaries of the ICT revolution are those new business owners in transition economies who have the necessary skills to assimilate these technologies in starting and growing successful businesses within a specific environment of market conditions and physical infrastructure.

CONCLUDING REMARKS

In this paper we presented the latest version of EIM's COMPENDIA data base which contains harmonised data on the number of business owners and the size of the labour force for 30 OECD countries over the period 1972-2008. EIM harmonizes raw numbers of business owners (self-employed), as published in the *OECD Labour Force Statistics*, towards a uniform definition. We define the business ownership rate as the number of owner-managers of unincorporated and incorporated businesses, as a fraction of the total labour force. Until recently, data in COMPENDIA were published for a group of 23 OECD countries, starting from 1972 onwards. However, in the most recent version of the data base (COMPENDIA 2008.1) time series for seven additional countries have been introduced for the first time, so that the COMPENDIA data base now covers 30 OECD countries. The current paper makes four contributions. First, we provide an update of the methodology used to harmonize business ownership rates across countries. In doing so, as a second contribution, we provide two extended country cases (Poland and the United States) which illustrate the many methodological pitfalls that have to be dealt with when measuring the number of business owners. Third, we present business ownership time series for 30 OECD countries including the new countries in our data base: Czech Republic, Hungary, Korea, Mexico, Poland, Slovak Republic, and Turkey. Fourth and finally, we pay considerable attention to the sizable differences in the level and development of business ownership since 1989 in four Central and East European transition economies in our data base: Czech Republic, Hungary, Poland, and Slovak Republic.

The paper shows there are currently (in 2008) some 83 million business owners in the OECD-30 area, of which 13.5 million work in the agricultural sector and 69.5 million in the non-agricultural sector. These 83 million business owners correspond to 14.4 percent of the total labour force in the OECD-30 area. We also show that there are big country differences in the level of the business ownership rate, as well as in the developments over time. Furthermore, as is well-known, the distinction agriculture versus non-agriculture proves to be very important.

The COMPENDIA data base is complementary to other cross-country data sources on entrepreneurship such as the GEM and WBGES data bases. All three data bases capture different aspects of entrepreneurship. As explained in the introductory chapter, COMPENDIA is also complementary to the several indicators currently used in the *OECD-Eurostat Entrepreneurship Indicators Programme*. A major advantage of COMPENDIA over other data bases is the long time range covered by the data (1972-2008). With the extension of the data base with seven new countries, we hope and expect that researchers and policy makers will continue to make use of the COMPENDIA data base in the future.

REFERENCES

- Acs, Z.J., S. Desai and L.F. Klapper (2008), What Does “Entrepreneurship” Data Really Show?, *Small Business Economics* 31, 265-281.
- Ahmad, N. and A.N. Hoffmann (2008), A Framework for Addressing and Measuring Entrepreneurship, OECD Statistics Working Paper, STD/DOC(2008)2, Paris: OECD.
- Armour, J. and D. Cumming (2008), Bankruptcy Law and Entrepreneurship, *American Law and Economics Review* 10(2), 303-350.
- Audretsch D.B. and A.R. Thurik (2000). Capitalism and Democracy in the 21st Century: from the Managed to the Entrepreneurial Economy, *Journal of Evolutionary Economics* 10, 17-34.
- Audretsch D.B. and A.R. Thurik (2004). A Model of the Entrepreneurial Economy, *International Journal of Entrepreneurship Education* 2, 143-166.
- Audretsch, D.B., M.A. Carree, A.J. van Stel and A.R. Thurik (2002). Impeded Industrial Restructuring: The Growth Penalty, *Kyklos* 55 (1), 81-98.
- Benacek, V. (1995). Small Business and Private Entrepreneurship During Transition, The Case of the Czech Republic, *Eastern European Economics*, March-April, 38-75.
- Bjuggren, C.M., D. Johansson and M. Stenkula (2010), Using Self-employment as Proxy for Entrepreneurship: Some Empirical Caveats, The Ratio Institute Working Paper, Stockholm (publication date June 14).
- Blau, D. (1987), A Time Series Analysis of Self-Employment, *Journal of Political Economy* 95, 445-467.
- Bregger, J.E. (1996). Measuring Self-Employment in the United States, *Monthly Labor Review* 119, January/February, 3-9.
- Bresnahan, T. and M. Trajtenberg (1995). General Purpose Technologies ‘Engines of Growth’? *Journal of Econometrics*, 65, 83–108.
- Carree, M.A., A.J. van Stel, A.R. Thurik and A.R.M. Wennekers (2002). Economic Development and Business Ownership: An Analysis Using Data of 23 OECD Countries in the Period 1976–1996, *Small Business Economics* 19, 271–290.
- Carree, M.A., A.J. van Stel, A.R. Thurik and A.R.M. Wennekers (2007). The Relationship between Economic Development and Business Ownership Revisited, *Entrepreneurship and Regional Development* 19, 281-291.
- Cieslik, J. and E. Kaciak (2009a). The Speed of Internationalization of Entrepreneurial Start-Ups in a Transition Environment, *Journal of Developmental Entrepreneurship*, 14(4), 375-392.

- Cieslik, J. and E. Kaciak (2009b), Measuring Growth and Internationalization of SMEs: Toward an Integrated Analytical Framework, Kozminski Working Paper Series No. 6-2009, Warsaw.
- Davis, T. (2008), Understanding Entrepreneurship: Developing Indicators for International Comparisons and Assessments, In: Congregado, E. (ed.), *Measuring Entrepreneurship; Building a Statistical System*, New York: Springer, 39-63.
- Fain, T.S. (1980). Self-employed Americans: Their Number Has Increased, *Monthly Labor Review* 103, November, 3-8.
- Fogel, G. and A. Zapalska (2001). A Comparison of Small and Medium-Size Enterprise Development in Central and Eastern Europe, *Comparative Economic Studies* 43(3), 35-68.
- Forst, M. (1996), Helping Small Business in Eastern Europe, *The OECD Observer*, No. 198, Feb/Mar 1996, 51-54.
- Główny Urząd Statystyczny (GUS) (1989). Rocznik Statystyczny 1989 (Statistical Yearbook 1989), Warsaw.
- Główny Urząd Statystyczny (GUS) (1991). Rocznik Statystyczny 1991 (Statistical Yearbook 1991), Warsaw.
- Główny Urząd Statystyczny (GUS) (2009). Zmiany Strukturalne Grup Podmiotów Gospodarki Narodowej (Structural Changes of Groups of the National Economy Entities), Warsaw.
- Hakim, C. (1988). Self-employment in Britain: Recent Trends and Current Issues, *Work, Employment and Society* 2: 421-450.
- Johnson, S. and G. Loveman (1995). *Starting Over in Eastern Europe: Entrepreneurship and Economic Renewal*, Boston: Harvard Business School Press.
- Klapper, L., R. Amit, M.F. Guillén and J.M. Quesada (2007), Entrepreneurship and Firm Formation Across Countries, Development Research Group Working Paper No. 4313, Washington DC: World Bank.
- Koellinger, P. and R. Thurik (2009), Entrepreneurship and the Business Cycle, Tinbergen Institute Discussion Paper TI 2009-032/3, Erasmus University Rotterdam.
- Kolodko, G. (2000). *From Shock to Therapy: The Political Economy of Postsocialist Transformation*, UNU/WIDER Studies in Development Economics, Oxford: Oxford University Press.
- KPMG/ENSR (2000). *The European Observatory for SMEs: Sixth report*, Zoetermeer: EIM.
- La Porta R., F. Lopez-de-Silanes, A. Shleifer, and R. Vishny (1999). The Quality of Government, *Journal of Law, Economics and Organisation* 15(1), 222-279.

- La Porta, R., F. Lopez-de-Silanes, and A. Shleifer (2008). The Economic Consequences of Legal Origins. *Journal of Economic Literature*, 46(2), 285–332.
- Lucas, R.E., Jr. (1978), On the Size Distribution of Business Firms, *The Bell Journal of Economics* 9(2), 508-523.
- Mladek, J. and I. Hoshi (2003). Barriers to Entry of New Firms in the Czech Republic. In Hoshi, I., Balcerowicz, E. and L. Balcerowicz (eds), *Barriers to Entry and Growth of New Firms in Early Transition*, Dordrecht: Kluwer, 291-321.
- Morse, E.A., Fowler, S.W. and T.B. Lawrence (2007). The Impact of Virtual Embeddedness on New Venture Survival: Overcoming the Liabilities of Newness. *Entrepreneurship Theory and Practice*, 31(2), 139–159.
- Nyström, K. (2008). The Institutions of Economic Freedom and Entrepreneurship: Evidence from Panel Data, *Public Choice*, 136(3-4), 269-282.
- OECD (1992). *Employment Outlook July 1992*, Paris: OECD.
- OECD (2000). *Employment Outlook June 2000*, Paris: OECD.
- OECD (2002). *Labour Force Statistics 1981–2001*, Paris: OECD.
- OECD (2008), Measuring Entrepreneurship; A Digest of Indicators, Report in the Framework of the OECD-Eurostat Entrepreneurship Indicators Programme, Paris: OECD.
- OECD (2009a), Measuring Entrepreneurship; A Collection of Indicators (2009 edition), Report in the Framework of the OECD-Eurostat Entrepreneurship Indicators Programme, Paris: OECD.
- OECD (2009b), *Labour Force Statistics 1988-2008*, Paris: OECD.
- OECD (2010), *Factbook 2010*. Paris: OECD.
- Osborn, E. and K.M. Slomczynski (2005). *Open for Business. The Persistent Entrepreneurial Class in Poland*. Warsaw: IFIS Publishers.
- Parker, S.C. (2008), Statistical Issues in Applied Entrepreneurship Research: Data, Methods and Challenges, In: Congregado, E. (ed.), *Measuring Entrepreneurship; Building a Statistical System*, New York: Springer, 9-20.
- Peng, M.W. (2001). How Entrepreneurs Create Wealth in Transition Economies. *Academy of Management Executive*, 15(1), 95–96.
- Reynolds, P., Bosma, N., Autio, E., Hunt, S., De Bono, N., Servais, I., Lopez-Garcia, P., and Chin, N. (2005). Global Entrepreneurship Monitor: Data Collection Design and Implementation 1998-2003. *Small Business Economics* 24(3), 205-231.

- Salas-Fumás, V. and J. Sanchez-Asin (2009), Number of Self-Employed or Number of Firms as Measures of Entrepreneurship: Does it Matter?, SSRN working paper, November 23, 2009.
- SBA: United States Small Business Administration, Office of Advocacy (1987). *The State of Small Business, A Report of the President 1986*, Washington, DC: US Government Printing Office.
- SBA (1997). *The State of Small Business, A Report of the President 1996*, Washington, DC: US Government Printing Office.
- SBA (1998). *The State of Small Business, A Report of the President 1997*, Washington, DC: US Government Printing Office.
- SBA (1999). *The State of Small Business, A Report of the President 1998*, Washington, DC: US Government Printing Office.
- SBA (2000). Small Business Economic Indicators 1998, Washington, DC: SBA.
- SBA (2009), *The Small Business Economy 2009; A Report to the President*, Washington DC: US Government Printing Office.
- SBA (2010), SBA Quarterly Indicators, Fourth Quarter 2009: The Economy and Small Business (released February 17, 2010), Washington DC: SBA.
- Schumpeter, J.A. (1950). *Capitalism, Socialism and Democracy*. New York: Harper and Row.
- Schwab, K. (ed.) (2009). *The Global Competitiveness Report 2009-2010*, Geneva: World Economic Forum.
- Shapiro, A. and L. Sokol (1982). The Social Dimensions of Entrepreneurship. In: Kent, C.A., Sexton, D.L. and K.H. Vesper (eds), *Encyclopaedia of Entrepreneurship*, Englewood Cliffs, NJ: Prentice-Hall, 72-90.
- Smallbone, D. and F. Welter (2001). The Distinctiveness of Entrepreneurship in Transition Economies, *Small Business Economics*, 16(4), 249-262.
- Van Praag, C.M. and A.J. van Stel (2010), The More Business Owners The Merrier? The Role of Tertiary Education, EIM Research Report H201010, Zoetermeer, the Netherlands: EIM.
- Van Stel, A.J. (2003). COMPENDIA 2000.2: A Harmonized Data Set of Business Ownership Rates in 23 OECD Countries. EIM Research Report H200302, Zoetermeer, the Netherlands: EIM; Internet: www.entrepreneurship-sme.eu
- Van Stel, A.J. (2005). COMPENDIA: Harmonizing Business Ownership Data Across Countries and Over Time, *International Entrepreneurship and Management Journal* 1(1), 105-123.

- Van Stel, A., D.J. Storey, and A.R. Thurik (2007). The Effect of Business Regulations on Nascent and Young Business Entrepreneurship, *Small Business Economics*, 28 (2-3), 171-186.
- Verheul, I., N. Bosma, F. van der Nol and T. Wong (2002). Determinants of Entrepreneurship in the United States of America, in: D.B. Audretsch, R. Thurik, I. Verheul and S. Wennekers (eds.), *Entrepreneurship: Determinants and Policy in a European-US Comparison*, Boston/Dordrecht: Kluwer Academic Publishers, 209-245.
- Wennekers, S., A.J. van Stel, M.A. Carree and A.R. Thurik (2010), The Relationship between Entrepreneurship and Economic Development: Is it U-shaped? *Foundations and Trends in Entrepreneurship*, 6(3), 167-237.
- Williamson, O.E. (2000). The New Institutional Economics: Taking Stock, Looking Ahead. *Journal of Economic Literature*, 38, 595-613.
- Winiecki, J. (2004). Determinants of Catching Up or Falling Behind: Interaction of Formal and Informal Institutions, *Post-Communist Economies*, 16(2), 137-152.
- Winiecki, J., Benacek, V. and M. Laki (2004), *The Private Sector After Communism: New Entrepreneurial Firms in Transition Economies*, Oxfordshire: Routledge.
- World Bank (2009), *Doing Business 2010; Reforming Through Difficult Times*, Washington, DC: World Bank.

The results of EIM's Research Programme on SMEs and Entrepreneurship are published in the following series: Research Reports and Publicatiesrapportages. The most recent publications of both series may be downloaded at: www.entrepreneurship-sme.eu.

Recent Research Reports and Scales Papers

H201018	6-7-2010	Modelling the Determinants of Job Creation: Microeconomic Models Accounting for Latent Entrepreneurial Ability
H201017	25-5-2010	Entrepreneurship and role models
H201016	29-4-2010	The Nature and Prevalence of Inter-Organizational Project Ventures: Evidence from a large scale Field Study in the Netherlands 2006-2009
H201015	27-4-2010	New Firm Performance: Does the Age of Founders Affect Employment Creation?
H201014	1-4-2010	Van defensief MKB-beleid naar offensief ondernemersbeleid
H201013	16-3-2010	Human capital and start-up succes of nascent entrepreneurs
H201012	16-3-2010	New business creation in the Netherlands
H201011	16-3-2010	Factors influencing the entrepreneurial engagement of opportunity and necessity entrepreneurs
H201010	16-3-2010	The more business owners the merrier? The role of tertiary education
H201009	2-3-2010	Open, distributed and user-centered: Towards a paradigm shift in innovation policy
H201008	1-2-2010	Geographical distance of innovation collaborations
H201006	21-1-2010	Family ownership, innovation and other context variables as determinants of sustainable entrepreneurship in SMEs: An empirical research study
H201005	12-1-2010	Intrapreneurship – An international study
H201004	12-1-2010	Schumpeter versus Kirzner: An empirical investigation of opportunity types
H201003	7-1-2010	Institutions and entrepreneurship: The role of the rule of law
H201002	5-1-2010	Patterns of innovation networking in Dutch small firms
H201001	4-1-2010	Administratieve lasten en ondernemerschap
H200911	29-1-2010	Ambitious entrepreneurship, high-growth firms and macroeconomic growth
H200910	4-2-2010	Entrepreneurial exit and entrepreneurial engagement
H200909	10-3-2009	Entrepreneurship Education Monitor (EEM)
H200908	3-3-2009	Internationale samenwerking door het Nederlandse MKB
H200907	2-3-2009	The Dynamics of Entry and Exit

H200906	2-3-2009	Bedrijfsgrootteverdelingen in Nederland
H200905	2-3-2009	Start-ups as drivers of incumbent firm mobility: An analysis at the region-sector level for the Netherlands
H200904	16-2-2009	Een reconstructie van het beleidsprogramma Ondernemerschap en Starters 1982-2003: een eclecticische analyse
H200903	16-2-2009	Determinants and dimensions of firm growth
H200902	2-2-2009	The decision to innovate: Antecedents of opportunity exploitation in high tech small firms
H200901	7-1-2009	The Relationship between Successor, Planning Characteristics, and the Transfer Process on Post-Transfer Profitability in SMEs
H200825	19-12-2008	Isomorfie en het beloningspakket van werknemers in het MKB
H200824	16-12-2008	The relation between entrepreneurship and economic development: is it U-shaped?
H200823	11-12-2008	International Entrepreneurship: An Introduction, Framework and Research Agenda
H200822	11-12-2008	The two-way relationship between entrepreneurship and economic performance
H200821	5-12-2008	Spin-outs
H200820	27-11-2008	Innovative Work Behavior: Measurement and Validation
H200819	17-11-2008	Open innovation in SMEs: Trends, motives and management challenges
H200818	10-11-2008	High-Growth SMEs Evidence from the Netherlands
H200817	3-11-2008	Internationalization of European SMEs towards Emerging Markets
H200816	27-10-2008	Measuring business dynamics among incumbent firms in The Netherlands
H200815	20-10-2008	Vergrijzing van het arbeidsaanbod
H200814	16-10-2008	User Innovation in SMEs: Incidence and Transfer to Producers
H200813	30-9-2008	How Does Entrepreneurial Activity Affect the Supply of Business Angels?
H200812	16-9-2008	Science and technology-based regional entrepreneurship in the Netherlands: building support structures for business creation and growth entrepreneurship
H200811	8-9-2008	What Determines the Growth Ambition of Dutch Early-Stage Entrepreneurs?
H200810	6-8-2008	The Entrepreneurial Advantage of World Cities; Evidence from Global Entrepreneurship Monitor Data
H200809	25-7-2008	The Entrepreneurial Adjustment Process in Disequilibrium: Entry and Exit when Markets Under and Over Shoot
H200808	2-7-2008	Entrepreneurial Career Capital, Innovation and New Venture Export Orientation