

## C.

## DETERMINANTS AND IMPACTS OF ENTREPRENEURSHIP

**Definition**

**Product market regulation (PMR)** measures the degree to which policies promote or inhibit competition in areas of the product market in which competition is viable. The administrative burden for start-ups measures the number of formalities and corresponding delays for starting up a company.

**Business enterprise expenditure on R&D (BERD)** covers R&D activities carried out in the business sector by performing firms and institutes, regardless of the origin of funding.

**Tertiary educational attainment** shows the percentage of the population aged 25-64 having obtained a tertiary degree.

**Venture capital** is equity capital provided through formal, professionally organised and managed funds to co-finance, with the founder or entrepreneur, an early stage or expansion stage venture.

**Comparability**

Indicators on product market regulation, R&D and tertiary educational attainment are comprehensive and internationally comparable sets of indicators published by the OECD.

Venture capital data presented here are provided by various sources, which use different classifications of the “stage of development”.

**Overview**

Correlating indicators of entrepreneurial determinants and performance across countries offers initial confirmation of the theoretical insights developed in the proposed framework. However, identifying the empirical relationships between determinants and performance calls for detailed analysis.

A scatter plot of enterprise births tends to suggest that high administrative burdens discourage enterprise birth, although the relationship is not explicit. This confirms previous findings that administrative burdens are only one determining factor. Business R&D investment in smaller firms appears, perhaps surprisingly, more closely related to birth rates. The positive relation indicates some interaction between the different indicators, but more analysis is needed to show a possible causal relation and its direction.

A look at entrepreneurial determinants specifically for high-growth enterprises shows that a positive relation seems to exist between investments in venture capital and high-growth enterprises. However, in countries such as the Czech Republic and Hungary, venture capital is not really related to high growth, again suggesting the existence of different entrepreneurial

regimes between countries. The link with entrepreneurial capabilities (measured in terms of attainment of tertiary education) is less clear, even though the supply of human skills is assumed to be an important determinant of high growth.

The relationships between entrepreneurial determinants and performance may be clouded for several reasons: empirical indicators only measure part of the theoretical determinants, it takes time for the effects to materialise; determinants may only have an indirect effect on entrepreneurial performance; the effects may depend on enterprises reaching a certain threshold and/or differ between industries; other mechanisms may play a more important role (e.g. the strong economic expansion in Eastern European countries), etc.

**Sources**

- OECD, Market Regulation database, October 2007.
- OECD, R&D database, May 2007.
- OECD, *Education at a Glance*, 2007
- OECD, Entrepreneurship Finance Database (EFD), based on data from Thomson Financial, PwC, EVCA, LVCA and national Venture Capital Associations.
- Structural and Demographic Business Statistics (SDBS), OECD database.

**For further reading****Analytical publication**

- OECD (2007), *OECD Science, Technology and Industry: Scoreboard 2007*, OECD, Paris.

**Statistical publications**

- Davis, T., E. Gonnard and P. Sicari (2008), “Report on the Data Track of the ICE Risk Capital Project”, OECD, Paris.
- OECD (2006), *Structural and Demographic Business Statistics 1996-2003*, 2006 Edition, OECD, Paris.

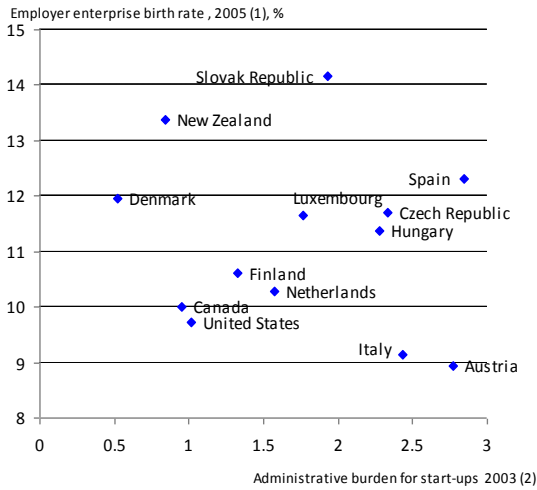
**Methodological publications**

- OECD (2002), *Frascati Manual: Proposed Standard Practice for Surveys on Research and Experimental Development*, OECD, Paris, available at: [www.oecd.org/document/6/0,3343,en\\_2649\\_34451\\_33828550\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/6/0,3343,en_2649_34451_33828550_1_1_1_1,00.html).
- Ahmad, N. and E. Gonnard, (2007), “High-growth Enterprises and Gazelles”, paper prepared for the International Consortium on Entrepreneurship (ICE), Copenhagen, Denmark.
- Eurostat/OECD (2007), *Eurostat-OECD Manual on Business Demography Statistics*, OECD, Paris.

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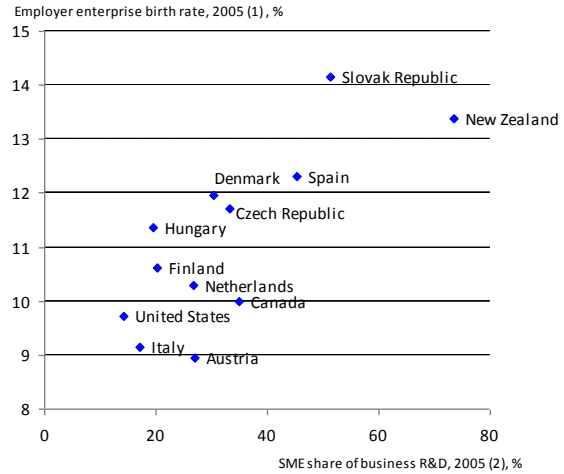
Determinants of enterprise birth and high growth

Regulatory framework



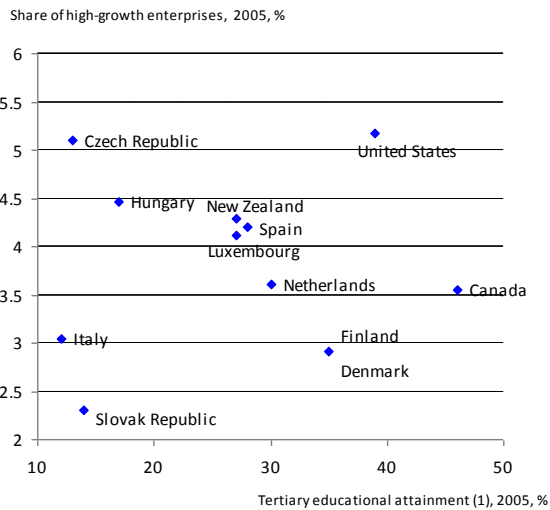
1. 2004 for the United States
2. Source: OECD Indicators of Product Market Regulation (PMR)

R&D and technology



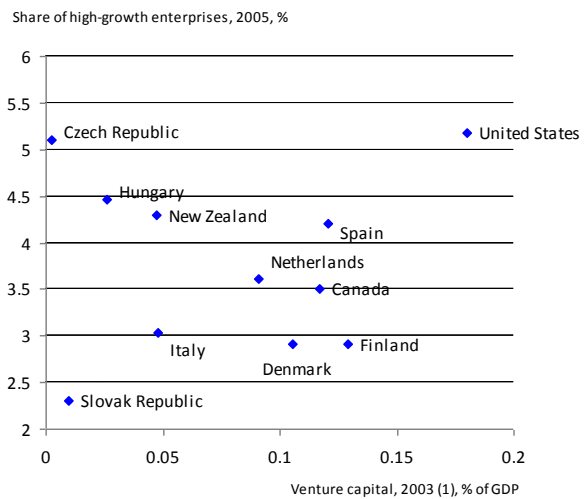
1. 2004 for the United States
2. 2004 for Austria and Canada; 2003 for Denmark, Italy and Netherlands.

Entrepreneurial capability



1. Source: OECD Education at a Glance 2007.

Access to finance



1. 2006 for New Zealand

## C.

## DETERMINANTS AND IMPACTS OF ENTREPRENEURSHIP

**Definitions***Employment creation and destruction*

Creation of employment is measured as the number of persons employed in the reference period (t) in enterprises newly born in (t) divided by the number of persons employed in (t) in the stock of active enterprises. Symmetrically, the destruction of employment is measured as the number of persons employed in the reference period (t) in exiting enterprises divided by the number of persons employed in (t) in the stock of active enterprises.

*Churn rate*

The churn rate expresses the sum of employer enterprise births and deaths as a percentage of the population of active enterprises. This is an indicator of the structural dynamics of an economy, which (potentially) gives rise to “creative destruction”.

*Labour productivity growth*

The output measures used for the calculations are the gross domestic estimates from the OECD Annual National Accounts database, based on the 1993 *System of National Accounts*. Labour input measures used are estimates of hours actually worked. They reflect regular hours worked by full-time and part-time workers, paid or unpaid overtime, hours worked because of public holidays, annual paid leaves, strikes and labour disputes, bad weather, economic conditions and other reasons.

**Comparability**

“Employer” indicators are more relevant for international comparisons than indicators covering all enterprises, as these are sensitive to the coverage of business registers.

The OECD and national statisticians work together to ensure that the data on hours worked are as comparable as possible although based on a range of sources of varying reliability. In most countries, data come from household labour force surveys; the others use establishment surveys, administrative sources or a combination of sources (for more specific information see the OECD Compendium of Productivity Indicators).

Although GDP estimates are based on common definitions, the methods used by most countries to estimate value added in government services assume zero labour productivity growth. This means that countries with large government sectors or with government sectors that were growing during the period considered will, by assumption, have lower growth in GDP per hour worked than other countries. In the charts, the OECD aggregate excludes Poland and Turkey.

**Overview**

The birth of new enterprises and the death of existing enterprises contribute directly to the aggregate growth of employment and productivity in national economies. Previous research has shown that productivity growth in the United States has been significantly influenced by firm entry and exit.

The contribution of the birth and death of enterprises to employment appears to be equally important on average, *i.e.* the employment created by new firms is more or less neutralised by the employment destroyed by exiting firms. Nevertheless, important differences exist among countries: in the Slovak Republic, Spain and Romania there is a clear net creation of employment as the result of the birth and death of enterprises, while in the Netherlands, Denmark and the United States there is a net destruction of employment.

The birth and death of enterprises may also affect aggregate productivity growth: correlating the churn rate (*i.e.* the sum of birth and death rates) with labour productivity growth across countries seems to point to a positive relationship. Theory explains this by the higher productivity of entering firms (relative to the productivity of exiting firms or even to aggregate productivity levels of all firms). Moreover, greater competition owing to more efficient and more productive new firms may stimulate existing firms to increase their productivity through R&D investments, innovation, etc. However, this simple correlation does not show any causality, and more detailed research is needed to disentangle the individual effects of enterprise births and deaths on productivity growth.

**Source**

- OECD, Structural and Demographic Business Statistics (SDBS), OECD Database.
- OECD *Productivity Database*.

**For further reading****Analytical publication**

- OECD (2008), *OECD Compendium of Productivity Indicators*, 2008 Edition, OECD, Paris

**Statistical publication**

- OECD (2006), *Structural and Demographic Business Statistics 1996-2003*, 2006 Edition, OECD, Paris.

**Methodological publications**

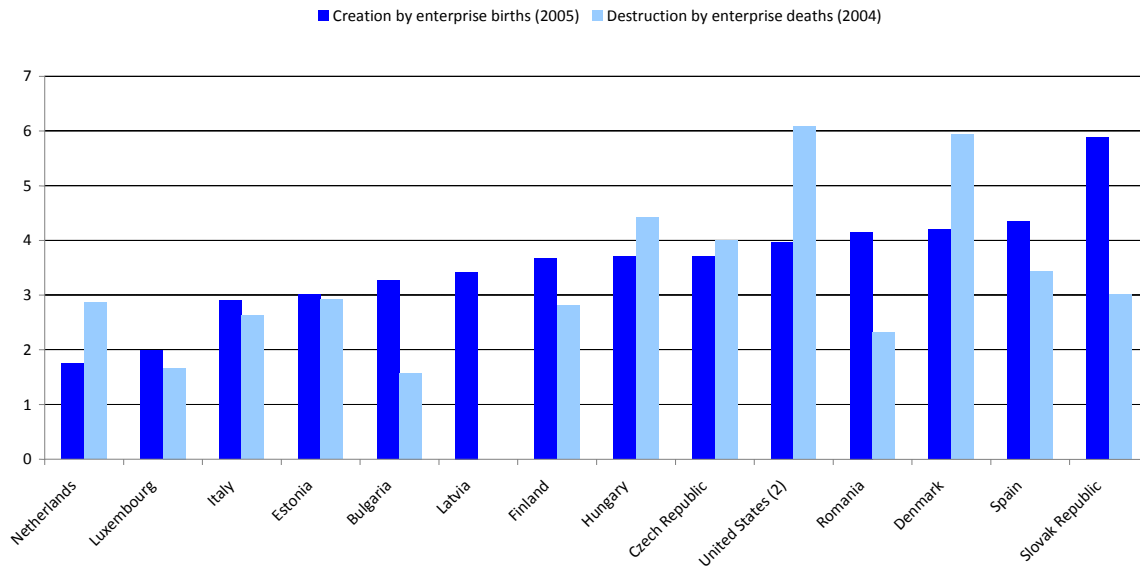
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- OECD (2001), *Measuring Productivity – OECD Manual*, OECD, Paris.
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**Impact of enterprise births and deaths on employment and productivity growth**

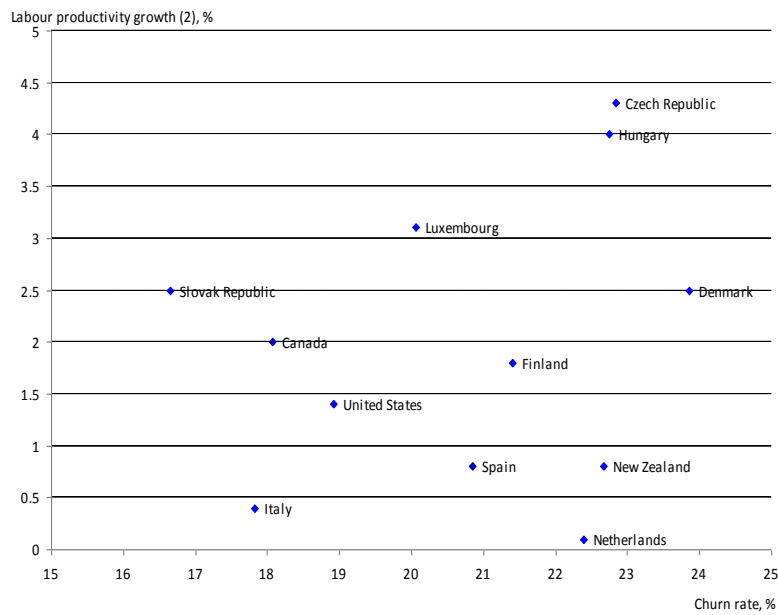
**Employment creation and destruction<sup>1</sup>**

As a percentage of the total number of persons employed in the enterprise population



- 1. Market economy (ISIC Rev.3 10-74).
- 2. 2004 birth rate for the United States

**Churn rate and labour productivity growth,<sup>1</sup> 2005**



- 1. Total economy.
- 2. Source: OECD Productivity database

