

ANNEX B

List of indicators of entrepreneurial determinants

This Annex presents a comprehensive list of indicators of entrepreneurial determinants. The list draws from past work conducted by FORA (Ministry of Economic and Business Affairs, Division for Research and Analysis, Denmark) for the annual report “Quality Assessment of Entrepreneurship Indicators, which was discontinued in 2012. Indicators are classified into the six categories of determinants set by the OECD-Eurostat Entrepreneurship Indicators Programme: 1. Regulatory Framework; 2. Market Conditions; 3. Access to Finance; 4. Creation and Diffusion of Knowledge; 5. Entrepreneurial Capabilities; 6. Entrepreneurial Culture. For each indicator, a short description and the source of data are provided.

While many critical factors affecting entrepreneurship are covered by the indicators presented in the table, the list should not be considered as exhaustive. On the one side, the selection of indicators reflects the current availability of data, meaning that important indicators may be missing, for instance in the determinant area access to finance, just because no source of international data was found. On the other side, empirical research on entrepreneurship is still young, especially on topics such as the relationship between culture and entrepreneurship, with the result that appropriate indicators are yet to be identified.

Table B.1. **Indicators of entrepreneurial determinants and data sources**

Category of determinants	Definition	Data sources
1. REGULATORY FRAMEWORK		
Administrative burdens (entry and growth)		
Burden of government regulation	Survey responses to the question: Complying with administrative requirements (permits, regulations, reporting) issued by the government in your country is (1 = burdensome, 7 = not burdensome).	World Economic Forum, <i>Global Competitiveness Report</i>
Costs required for starting a business	The official cost of each procedure in percentage of Gross National Income (GNI) per capita based on formal legislation and standard assumptions about business and procedure.	World Bank, <i>Doing Business</i>
Minimum capital required for starting a business	The paid-in minimum of capital requirement that the entrepreneur needs to deposit in a bank before registration of the business starts.	World Bank, <i>Doing Business</i>
Number of days for starting a business	The average time spent during each enterprise start-up procedure.	World Bank, <i>Doing Business</i>
Number of procedures for starting a business	All generic procedures that are officially required for an entrepreneur to start an industrial or commercial business.	World Bank, <i>Doing Business</i>
Procedures time and costs to build a warehouse	Corresponds to an average of three measurements: 1) Average time spent during each procedure, 2) Official cost of each procedure and 3) Number of procedures to build a warehouse.	World Bank, <i>Doing Business</i>
Registering property	Corresponds to an average of three measurements: 1) Number of procedures legally required to register property, 2) Time spent in completing the procedures and 3) Registering property costs.	World Bank, <i>Doing Business</i>

Table B.1. **Indicators of entrepreneurial determinants and data sources (cont.)**

Category of determinants	Definition	Data sources
Time it takes to prepare, file and pay the corporate income tax, vat and social contributions	Time is measured in hours per year.	World Bank, <i>Doing Business</i>
Bankruptcy Regulations		
Actual cost to close a business	The cost is measured in per cent of estate, based on a standard business closure.	World Bank, <i>Doing Business</i>
Actual time to close a business	Time is recorded in calendar years. The indicator is based on a standard business closure.	World Bank, <i>Doing Business</i>
Bankruptcy recovery rate	The recovery rate estimates how many cents on the dollar claimants – creditors, tax authorities and employees – recover from an insolvent firm.	World Bank, <i>Doing Business</i>
Court and Legal Framework		
Enforcing contracts – Cost in % of claim	Cost is recorded as a percentage of the claim, assumed to be equivalent to 200% of income per capita. No bribes are recorded. Three types of costs are recorded: court costs, enforcement costs and average attorney fees.	World Bank, <i>Doing Business</i>
Enforcing contracts – number of procedures	A procedure is defined as any interaction between the parties, or between them and the judge or court officer. This includes steps to file the case, steps for trial and judgment and steps necessary to enforce the judgment.	World Bank, <i>Doing Business</i>
Enforcing contracts – Time	Time is recorded in calendar days, counted from the moment the plaintiff files the lawsuit in court until payment. This includes both the days when actions take place and the waiting periods between.	World Bank, <i>Doing Business</i>
Difficulty of firing	The index measures whether laws or other regulations have implications for the difficulties of firing a standard worker in a standard company, based on fact-based (yes/no) questions, remodelled into a 0-100 index.	World Bank, <i>Doing Business</i>
Difficulty of hiring	The index measures whether laws or other regulations have implications for the difficulties of hiring a standard worker in a standard company, based on fact-based (yes/no) questions, remodelled into a 0-100 index.	World Bank, <i>Doing Business</i>
Ease of hiring foreign labour	Survey responses to the question: Labour regulation in your country (1 = prevents your company from employing foreign labor, 7 = does not prevent your company from employing foreign labor).	World Economic Forum, <i>Global Competitiveness Report</i>
Rigidity of hours index	The indicator is an index with five components: <i>i</i>) whether night work is restricted; <i>ii</i>) whether weekend work is allowed; <i>iii</i>) whether the work week consists of five and a half days or more; <i>iv</i>) whether the workday can extend to 12 hours or more (including overtime); and <i>v</i>) whether the annual paid vacation days are 21 days or less.	World Bank, <i>Doing Business</i>
Social and Health Security		
Public expenditure on unemployment support	Public expenditure on unemployment per unemployed in USD, current PPPs. Public expenditure includes both party, full public pay and any other programme expenditures the public has.	OECD, Public expenditure and participant stocks on Labour Market Policy (LMP)
Public health care coverage	The share of the population eligible for a defined set of health care goods and services under public programmes.	OECD Health data
Income taxes; Wealth/Bequest Taxes		
Average income tax plus social contributions	The average rate of taxation in percentage of the gross wage. The indicator is based on a standard case: single (without children) with high income.	OECD <i>Revenue Statistics</i>
Highest marginal income tax plus social contributions	The highest rate of taxation in percentage of the gross wage. The indicator is based on a standard case: single (without children) with high income.	OECD <i>Revenue Statistics</i>
Revenue from bequest tax	The revenue from bequest tax as a per cent of GDP on a 3 year moving average. on a standard case: single (without children) with high income.	OECD <i>Revenue Statistics</i>
Revenue from net wealth tax	The revenue from net wealth tax as a per cent of GDP on a 3 year moving average.	OECD <i>Revenue Statistics</i>
Business and Capital Taxes		
SME tax rates		OECD <i>Revenue Statistics</i>
Taxation of corporate income revenue	The revenue from corporate income tax as percentage of GDP on a three year moving average.	OECD <i>Revenue Statistics</i>
Taxation of dividends – top marginal tax rate		OECD <i>Tax Database</i>
Taxation of Stock Options	The average tax wedge for purchased and newly listed stocks. Average incomes are used.	OECD, The Taxation of Employee Stock Options – Tax Policy Study No. 11
Patent System; Standards		
Intellectual property rights	Survey responses to the question: intellectual property protection in the world (1 = is weak or nonexistent, 7 = is equal to the world's most stringent).	World Economic Forum, <i>Global Competitiveness Report</i>

Table B.1. **Indicators of entrepreneurial determinants and data sources (cont.)**

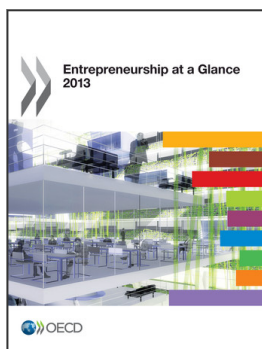
Category of determinants	Definition	Data sources
Property rights	Survey responses to the question: property rights, including over financial assets (1 = are poorly defined and not protected by law, 7 = are clearly defined and well protected by law).	World Economic Forum, <i>Global Competitiveness Report</i>
2. MARKET CONDITIONS		
Access to Foreign Markets		
Export burdens	An average of three measurements: 1) Number of all documents required to export goods, 2) Number of signatures required to export goods, 3) Time necessary to comply with all procedures required to export goods.	World Bank, <i>Doing Business</i>
Import burdens	An average of three measurements: 1) Number of all documents required to import goods, 2) Number of signatures required to import goods, 3) Time necessary to comply with all procedures required to import goods.	World Bank, <i>Doing Business</i>
Degree of Public Involvement		
Government enterprises and investment	Data is composed of the number, composition, and share of output supplied by State-Operated Enterprises (SOEs) and government investment as a share of total investment.	IMF, World Bank, UN National Accounts and World Economic Forum
Licensing restrictions	Zero-to-10 ratings are constructed for 1) the time cost (measured in number of calendar days required to obtain a license) and 2) the monetary cost of obtaining the license (measured as a share of per-capita income). These two ratings are then averaged to arrive at the final rating.	World Bank
Price controls	The indicator measures the extent to which prices are determined by the market or by government involvement.	IMD <i>World Competitiveness Yearbook</i>
Private Demand		
Buyer sophistication	Survey responses to: purchasing decisions are (1 = based solely on the lowest price, 7 = based on a sophisticated analysis of performance).	World Economic Forum, <i>Global Competitiveness Report</i>
3. ACCESS TO FINANCE		
Access to Debt Financing		
Country credit rating	The indicator is based on an assessment by the <i>Institutional Investor Magazine Ranking</i> .	IMD <i>World Competitiveness Yearbook</i>
Domestic credit to private sector	The indicator refers to financial resources provided to the private sector – such as through loans, purchases of non-equity securities, and trade credits and other accounts receivable – that establish a claim for repayment.	Published in <i>World Development Indicators</i> , World Bank. Data are from IMF's International Financial Statistics
Ease of access to loans	Survey responses to: how easy it is to obtain a bank loan in your country with only a good business plan and no collateral (1 = impossible, 7 = easy).	World Economic Forum, <i>Global Competitiveness Report</i>
Interest rate spread	The lending rate minus deposit rate based on an average of annual rates for each country.	IMF, <i>International Financial Statistics</i>
Legal rights index	The degree to which collateral and bankruptcy laws facilitate lending. Higher scores indicating that collateral and bankruptcy laws are better designed to expand access to credit.	World Bank, <i>Doing Business</i>
Share of SME loans in business loans		<i>Financing SMEs and Entrepreneurs</i> . An OECD Scoreboard
Access to Venture Capital		
Venture Capital Availability	Survey responses to: entrepreneurs with innovative but risky projects can generally find venture capital in your country (1 = not true, 7 = true).	World Economic Forum, <i>Global Competitiveness Report</i>
Venture Capital	Private equity investments in young businesses with innovation and growth potential	<i>OECD Entrepreneurship Finance Database</i> , based on: ABS: Australian Bureau of Statistics EVCA: European Private Equity and Venture Capital Association VEC: Venture Enterprise Center KVCA: Korean Venture Capital Association NVCA: National Venture Capital Association NZVCA: New Zealand Venture Capital Association RVCA: Russian Venture Capital Association Thomson Reuters SAVCA: South African Venture Capital and Private Equity Association
Stock Markets		
Capitalisation of primary stock market	The capitalisation of the primary stock market (the value of the issued shares on the market) relative to GDP.	World Federation of Exchange

Table B.1. **Indicators of entrepreneurial determinants and data sources (cont.)**

Category of determinants	Definition	Data sources
Investor protection	The main indicators include: transparency of transactions (Extent of Disclosure Index), liability for self-dealing (Extent of Director Liability Index), shareholders' ability to sue officers and directors for misconduct (Ease of Shareholder Suit Index), strength of Investor Protection Index (the average of the three index).	World Bank, <i>Doing Business</i>
Market capitalisation of newly listed companies	The market capitalisation (total number of new shares issued multiplied by their value on the first day of quotation) of newly listed domestic shares relative to GDP.	World Federation of Exchange <i>Emerging Market Database</i>
4. CREATION AND DIFFUSION OF KNOWLEDGE		
R&D Activity		
Business Expenditure on R&D – BERD		OECD <i>Science and Technology Statistics</i>
Government Expenditure on R&D – GERD		OECD <i>Science and Technology Statistics</i>
Higher Education Expenditure on R&D – HERD		OECD <i>Science and Technology Statistics</i>
International Co-operation Between Patent Applications at PCT	The indicator measures international co-operation between patent applications under the Patent Co-operation Treaty (PCT). The measure is calculated as a percentage of total patents (by application date).	OECD <i>Science and Technology Statistics</i>
Patents Awarded Based on Inventors Residence	Number of patents awarded to inventors based on their residence. The indicator is a sum of patents awarded by the European Patent Office (EPO) and US Patent and Trademark Office (USPTO).	OECD <i>Science and Technology Statistics</i>
Private Funding of R&D Activity	Total private founded R&D investments, independent of where the founding is spent. The indicator is measured as a percentage of GDP.	OECD <i>Science and Technology Statistics</i>
Public Funding of R&D Activity	Total public funding of R&D – as a percentage of GDP.	OECD <i>Science and Technology Statistics</i>
Transfer of Non-commercial Knowledge		
Research in Higher Education Sector Financed by Business	R&D expenditure performed at higher education and funded by business, measured as a percentage of total research expenditure.	OECD <i>Science and Technology Statistics</i>
Share of Patents Owned by Universities	The percentage of patents owned by universities. Only countries/economies with more than 300 patents are included.	OECD <i>Patent Database</i>
Universities or other Public Research Organizations as Source of Innovation	The share of innovative enterprises that states universities or other PROs as an important source of innovation.	Eurostat, European Community Innovation Survey (CIS)
University/Industry Research Collaboration	Survey responses to: the level of collaboration between business and universities in R&D. (1 for minimal or nonexistent to 7 for intensive and ongoing).	World Economic Forum, <i>Global Competitiveness Report</i>
Co-operation Among Firms		
SMEs Stating Co-operation as the Source of Innovation	The share of innovative small and medium sized enterprises (SMEs) stating any type of co-operation as the source of innovation.	Eurostat, European Community Innovation Survey (CIS)
Technology availability and take-up		
Turnover from e-Commerce	Total internet sales over the last calendar year, excluding VAT, as a percentage of total turnover.	Eurostat, <i>Information Society Statistics</i>
Enterprises Using e-Government	The share of enterprises using any eGovernment services. The measure is based on all firms with 10 employees or more, excluding the financial sector.	<i>Information Society Statistics</i>
ICT expenditure	Expenditure for ICT equipment, software and services as a percentage of GDP.	European Information Technology Observatory (EITO)
ICT expenditure in Communications	Expenditure for telecommunications equipment and carrier services as a percentage of GDP.	European Information Technology Observatory (EITO)
5. ENTREPRENEURIAL CAPABILITIES		
Business and Entrepreneurship education		
International Students in Tertiary Education	The share of international students in total tertiary enrolments.	OECD <i>Education at a Glance</i>
Population with Tertiary Education	The share of persons between 25-34 of age with tertiary-type B education or tertiary-type A education and advanced research programmes.	OECD <i>Education at a Glance</i>
Quality of Management Schools	Survey responses to: the quality of management schools across Countries is (limited or of poor quality for 1, to amongst the best in the World for 7).	World Economic Forum, <i>Global Competitiveness Report</i>
Received training in starting a business during school	The percentage of the population aged 18-64 that received training – voluntary or compulsory – in starting a business during school.	Global Entrepreneurship Monitor (GEM) <i>2008 Executive Report</i>
Received Training in Starting a Business After School	the percentage of the population aged 18-64 that received training – voluntary or compulsory – in starting a business after school.	Global Entrepreneurship Monitor (GEM) <i>2008 Executive Report</i>
Immigration		
Inflows of foreign labour	Inflows of foreign workers as a percentage of the total labor force.	OECD International Migration Outlook

Table B.1. **Indicators of entrepreneurial determinants and data sources** (cont.)

Category of determinants	Definition	Data sources
Migrants with Tertiary Education	The share of highly skilled migrants as a percentage of total migrants.	OECD, A profile of immigrant populations in the 21st century. Database on immigrants in OECD countries (DIOC)
Self-employment by Place of Birth	The share of self-employment by foreign-born persons. Self-employment is measured as a percentage of total employment.	OECD <i>International Migration Outlook</i>
Stocks of foreign labour	The stock of foreign workers as a percentage of the total labor force.	OECD <i>International Migration Outlook</i>
6. ENTREPRENEURSHIP CULTURE		
Desirability of Becoming Self-Employed	Survey responses to: desire to become self-employed within the next 5 years. This question is asked only to non-self-employed individuals.	European Commission, <i>Flash Eurobarometer</i>
Entrepreneurial Intention	The percentage of 18-64 population (individuals involved in any stage of entrepreneurial activity excluded) who intend to start a business within three years.	Global Entrepreneurship Monitor (GEM)
Entrepreneurial Motivation	The percentage of early stage entrepreneurs who were motivated by either <i>a</i>) a desire for independence or <i>b</i>) a desire to increase their income.	Global Entrepreneurship Monitor (GEM) 2007 Executive Report
Entrepreneurship among Managers	How senior executives rank the level of entrepreneurship of business managers in the given country from a scale of 0 to 10.	IMD <i>World Competitiveness Yearbook</i> .
The image of the entrepreneurs	Survey responses.	European Commission, <i>Flash Eurobarometer</i>
Fear of Failure	The percentage of non-entrepreneurially active adult population aged 18-64 that sees good opportunities to start a business, where fear of failure would prevent starting a business.	Global Entrepreneurship Monitor (GEM)
Good Conditions to Start a Business	The percentage of non-entrepreneurially active adult population aged 18-64 that sees good opportunities for starting a business in the next 6 months.	Global Entrepreneurship Monitor (GEM)
Image of entrepreneurs	Survey responses to: image of entrepreneurs according to their status in society. Entrepreneurs are ranked against civil servants and managers.	European Commission, <i>Flash Eurobarometer</i>
Risk for Business Failure	Survey responses to: being willing to start a business if a risk exists that it might fail.	European Commission, <i>Flash Eurobarometer</i>
The Wish to Own one's Own Business	Survey responses.	European Commission, <i>Flash Eurobarometer</i>
Self-Employment Preference	Survey responses to: preferences towards being self employed or being an employee.	European Commission, <i>Flash Eurobarometer</i>



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