

The logo for FORA, consisting of the letters 'FORA' in a serif font, centered within a dark blue square. The square is divided into four quadrants by a thin white cross.

FORA

**Innovation Capacity  
– The Drivers of  
Knowledge-Based  
Growth  
London, 6-7 July 2006**

**Sham Morten Gabr, Ph.D.**  
FORA,  
Danish Ministry of Economics and  
Business Affairs

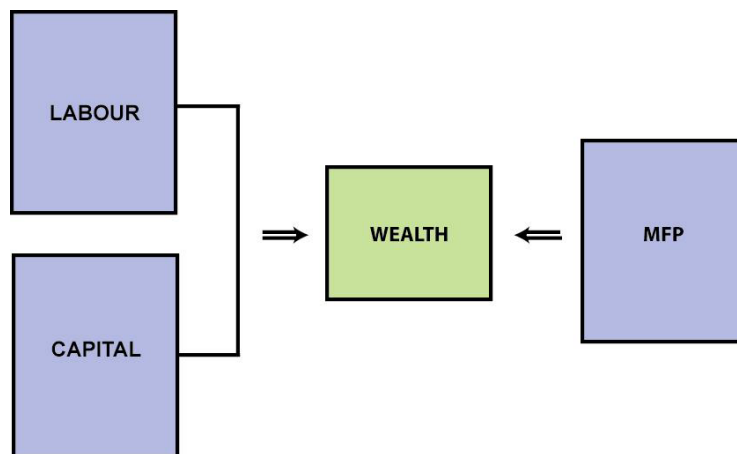
## Presentation Outline

- > The background
- > What is new about the knowledge-based economy
- > Three policy levels for creating wealth and prosperity: The relative importance?
- > FORA's comparative model for wealth creation in the knowledge based economy
- > Entrepreneurship as a driver of growth
- > The book: Forthcoming!

## Background

- > Policy makers focused on wealth creation
- > A new growth pattern=> New challenges => solutions?
- > Four drivers of innovation: human resources, knowledge building and knowledge sharing, use of ICT and entrepreneurship=> solutions?
- > Objective: Fact based policy formulation
- > Solution: Compare Performance and framework conditions..
- > Results: 2002 FORA, Spring 2004 The Innovation Council, September 2004 Innovation Monitor, February 2005 The Danish Government platform, Entrepreneurship index...

# What is new about the knowledge-based economy



- > A shift in the relative importance of the main determinants of growth..

# Three policy levels for creating wealth and prosperity:

- > Macro economic policy or stabilization policy
  - > monetary and fiscal policy
  
- > Structural policy
  - > flexible labour market
  - > tax-incentives
  - > competition policy
  - > ...
  - > ...
  
- > Micro drivers for wealth and prosperity

## Three policy areas are compared based on a series of economic indicators

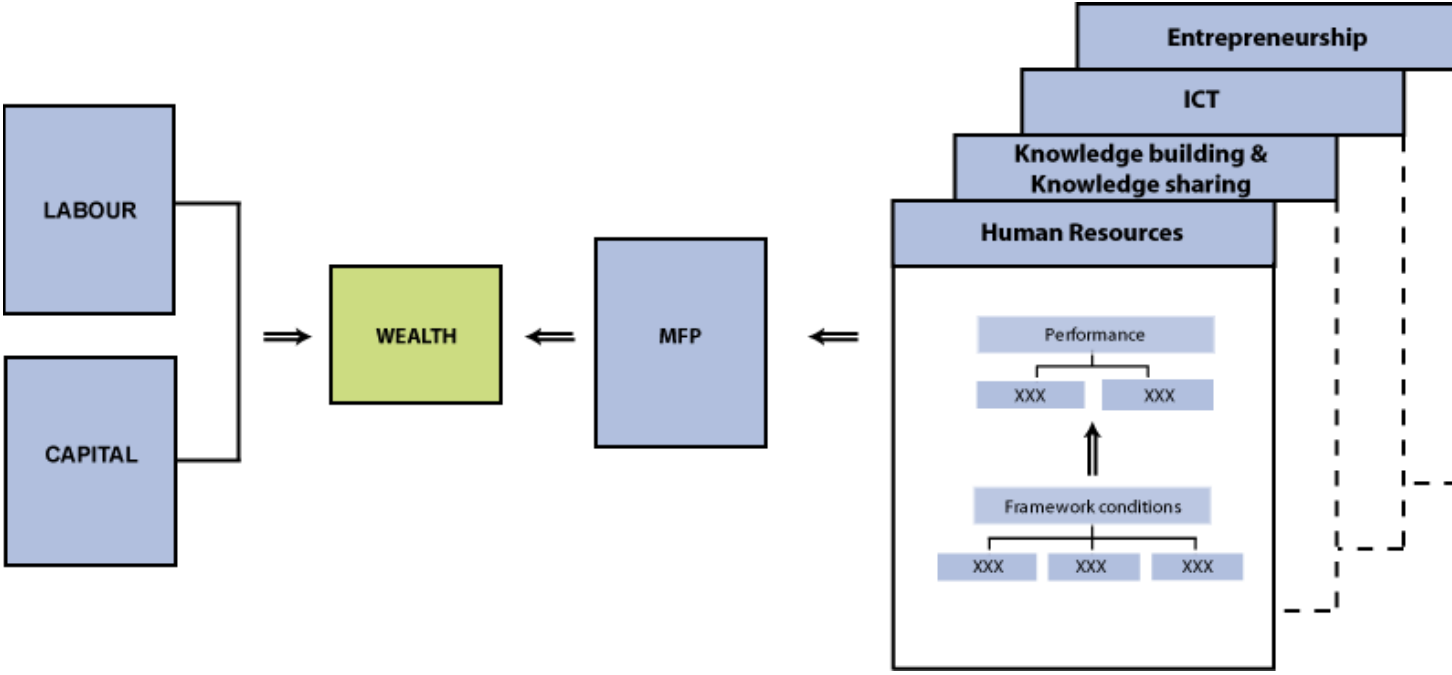
- > *Economic fundamentals* measured by government financial balance, government debt and inflation rate.
- > *Economic structures* measured by labour market flexibility, product market competition, tax structures and public infrastructure.
- > *Innovation capacity* measured by the framework conditions for enhancing human resources, building and sharing knowledge, use of ICT and shaping entrepreneurship.

## Main results/hypothesis

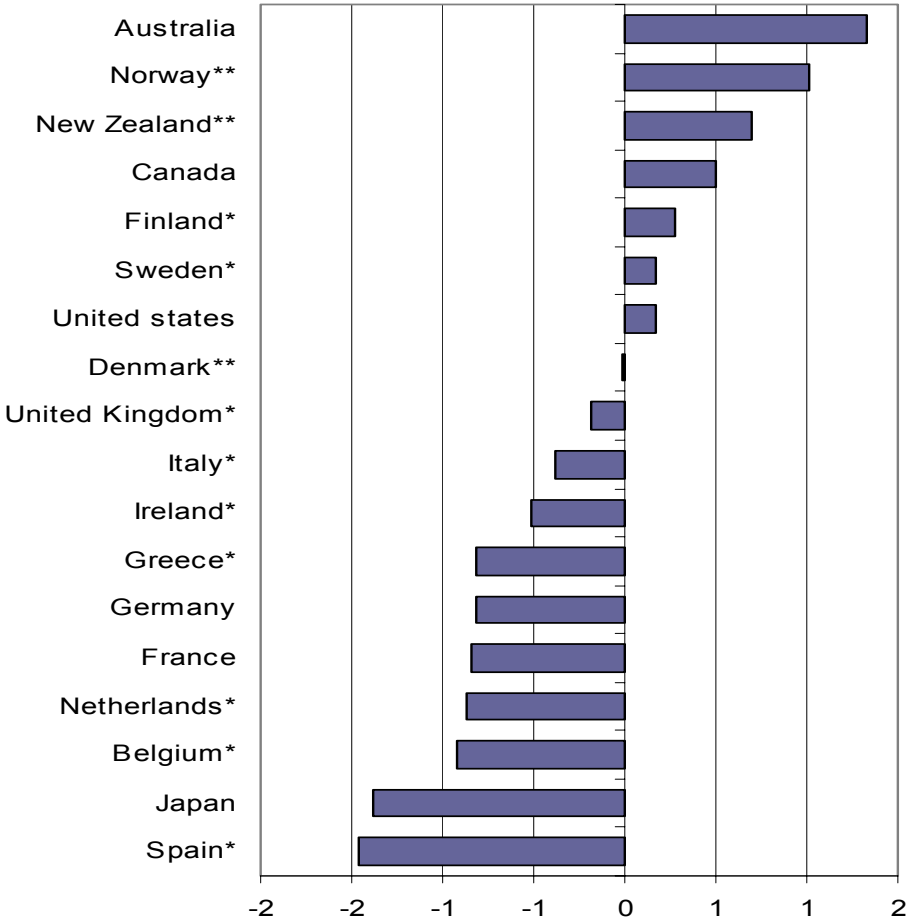
---

- > Policy matters..
- > Innovation capacity matters..
- > A strong innovation capacity can compensate for not being in top in terms of economic structures

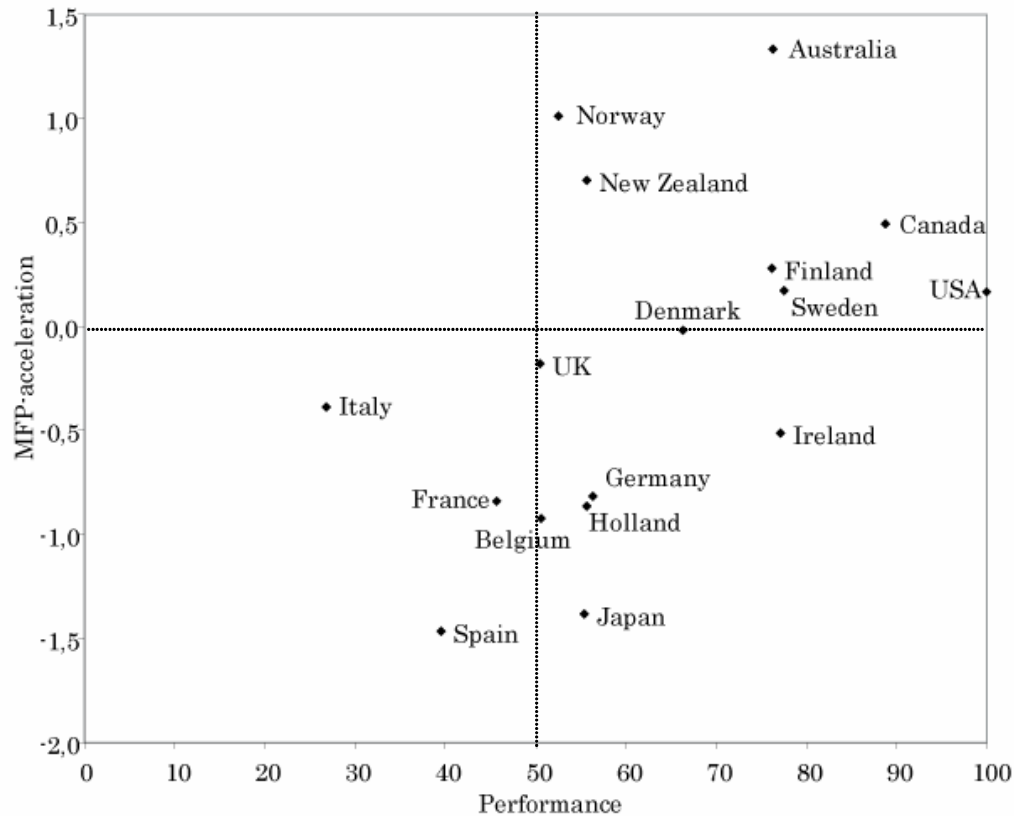
# FORA's comparative model for wealth creation in the knowledge-based economy



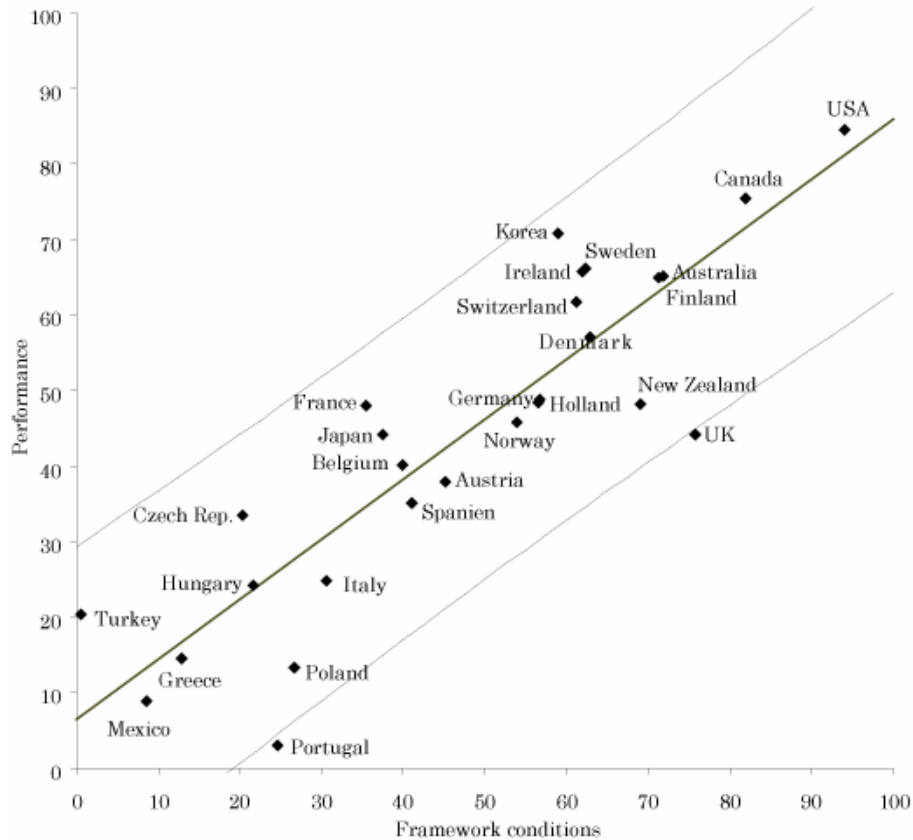
# MFP-acceleration



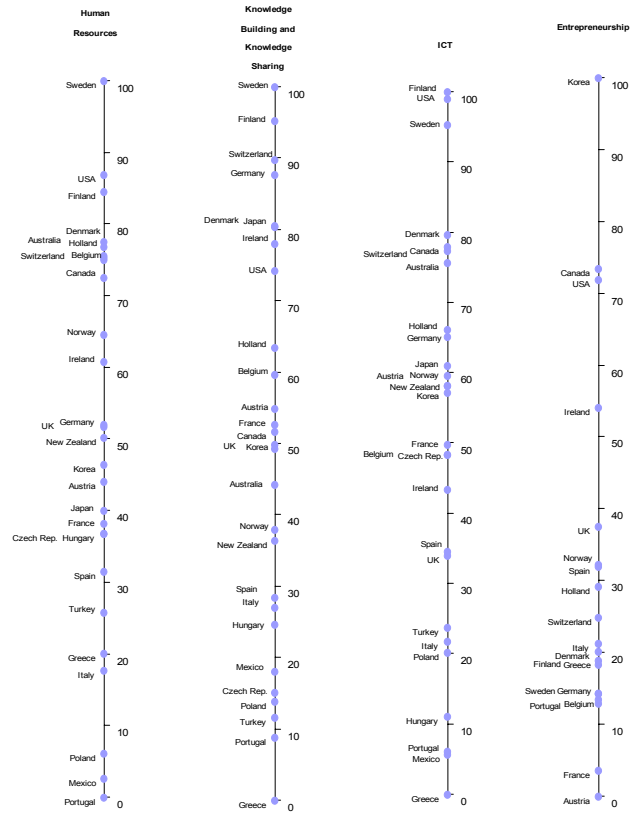
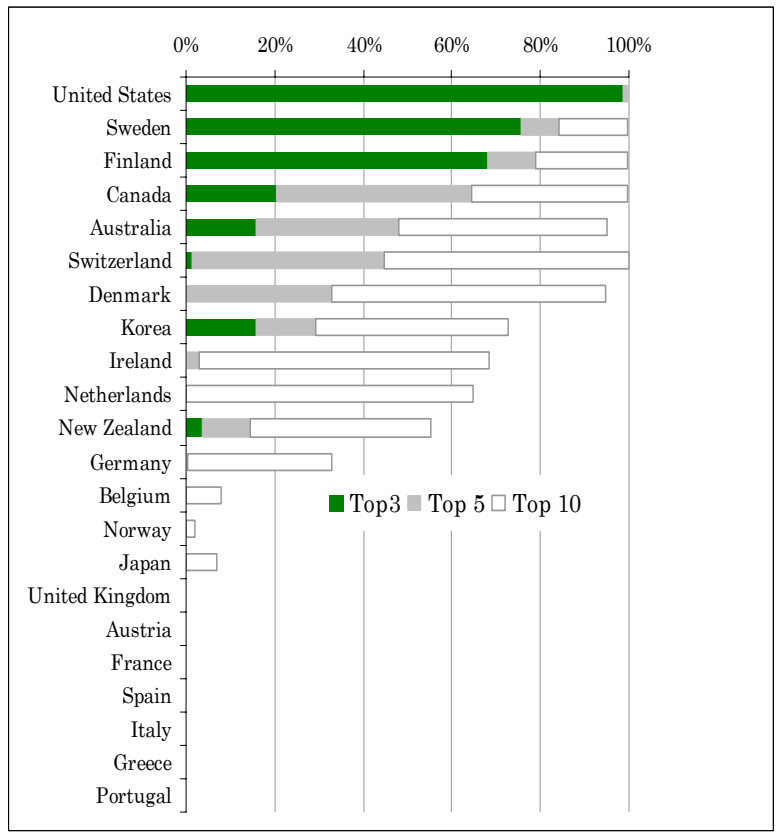
# Acceleration in MFP-growth and FORA's composite index for innovation capacity



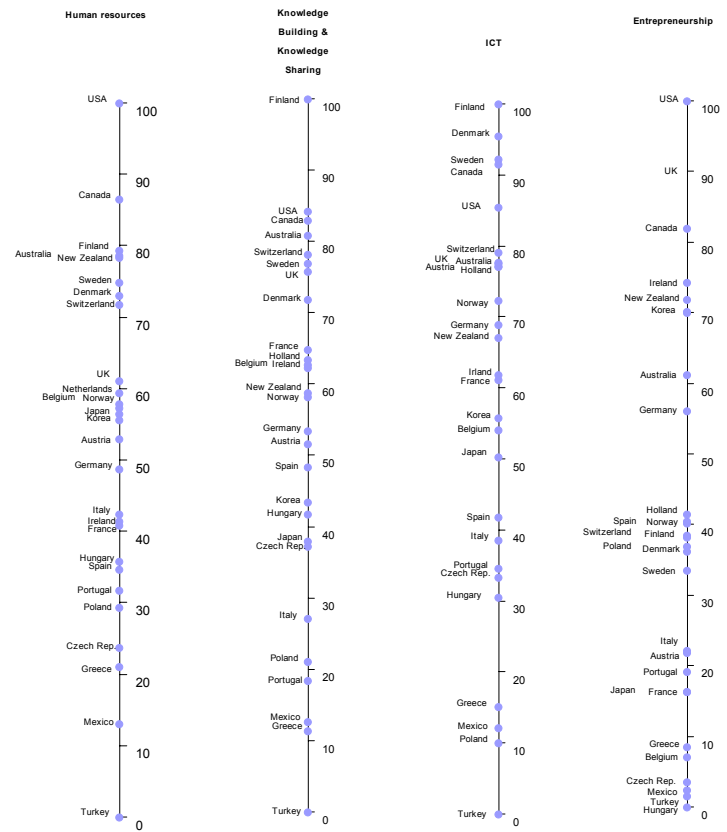
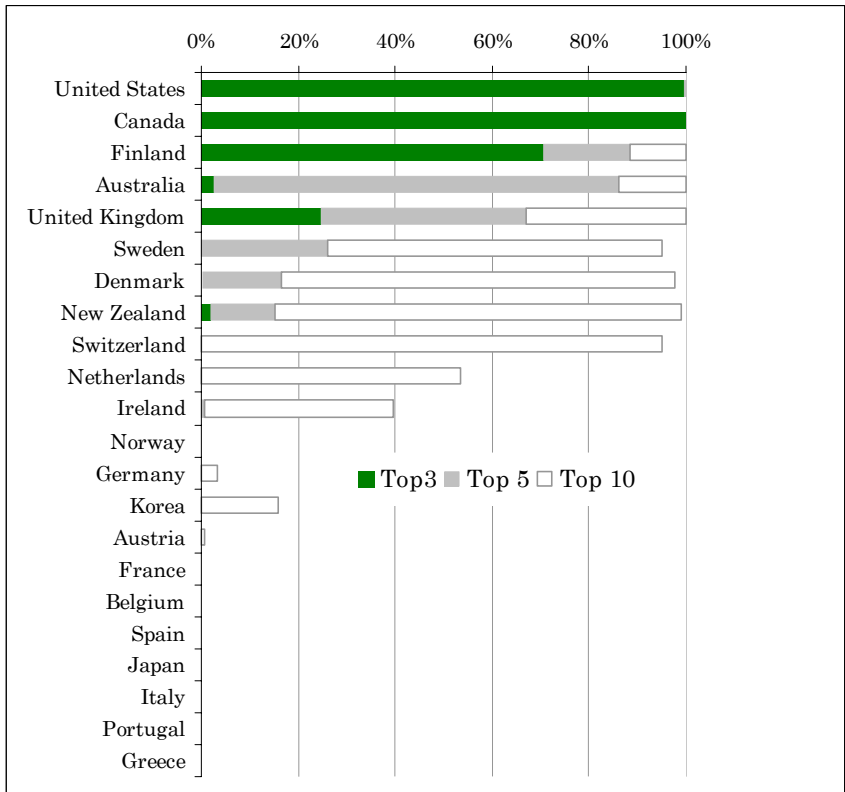
# The relation between framework conditions and performance



# DIFFERENCES AMONG COUNTRIES – Performance



# DIFFERENCES AMONG COUNTRIES – Framework conditions



# How the FORA model can be used to design policy

- > Critical policy areas for seizing the benefits of innovation capacity
  - > A combination of two approaches
    - > Regression analysis/correlation analysis
    - > Comparative approach: Policy areas that has a higher value than the average of all policy areas in the top-3 countries + a brief look at the framework conditions in top-3 countries.
- > How country's can prioritize between important policy areas
  - > Compare a country's framework conditions to those of the top performing countries in combination with the information concerning critical policy areas

## Designing policy

---

- > A set of further criteria's...
- > Detailed peer reviews
- > For each policy area it must be evaluated if the framework conditions in the best performing countries can function, or should be modified, in a given country's context.

# A roadmap for systematic comparisons of the importance of micro drivers

1. Define and quantify entrepreneurship performance
2. Check for robustness and rank countries according to performance
3. Define relevant policy areas and select indicators
4. Check for robustness and rank countries according to policies
5. Test for correlation between performance and policies
6. Identify critical policy areas for seizing the benefits of entrepreneurship
7. Prioritizing between the policy areas – Identify weak policy areas by comparing policies in individual countries with best performers
8. Improve the business environment in weak policy areas by using peer review to learn from best performers

# Using the roadmap on the growth driver entrepreneurship

- > How to compare country's capacity on entrepreneurship – an illustration of the roadmap

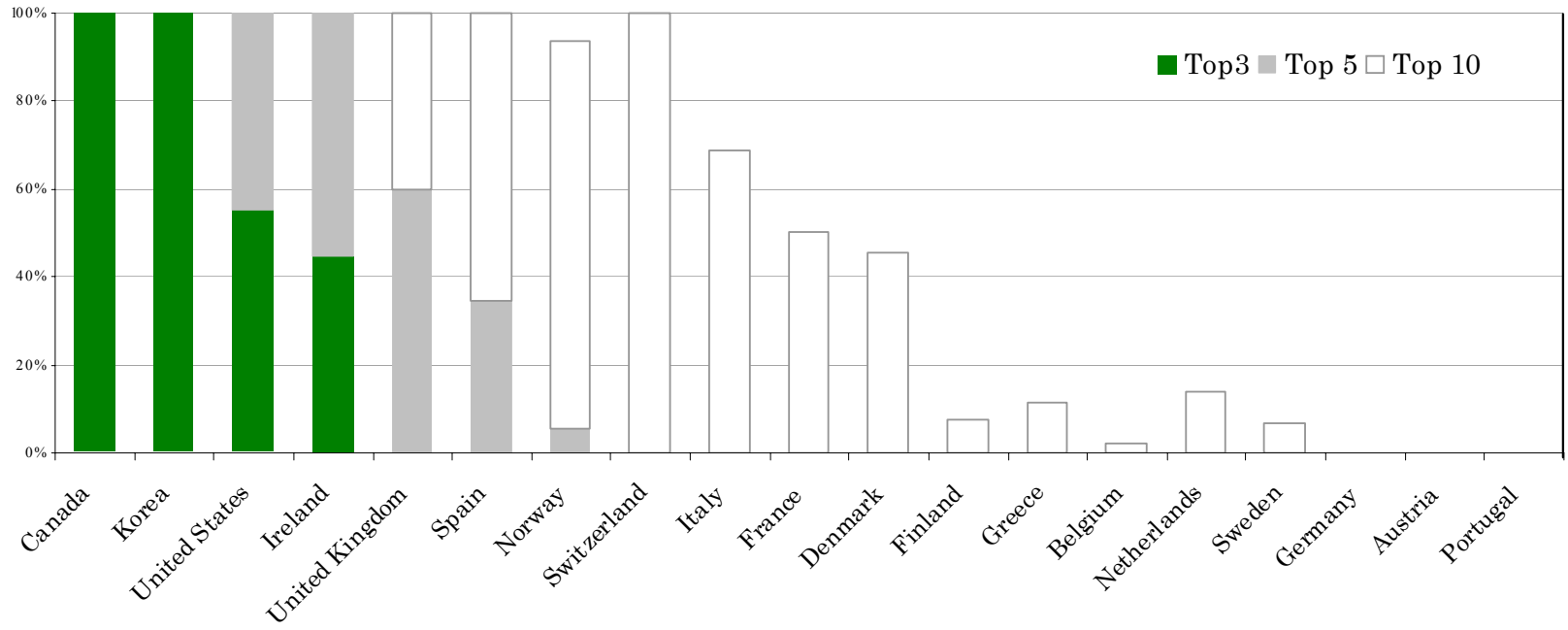
# 1. Define and quantify entrepreneurship performance

- > Entrepreneurship is in this study used as an expression as a driver of economic growth through higher productivity
- > Entrepreneurship is in this study defined as the *entry of firms and creation of high growth firms*
  - > analyses link these two parts of the entrepreneurial process to productivity growth (Audretsch and Thurik, 2000; Scarpetta et. al 2002; OECD 2003a; Brandt 2004a)
  - > Furthermore, this definition is directly measurable and comparable across countries.

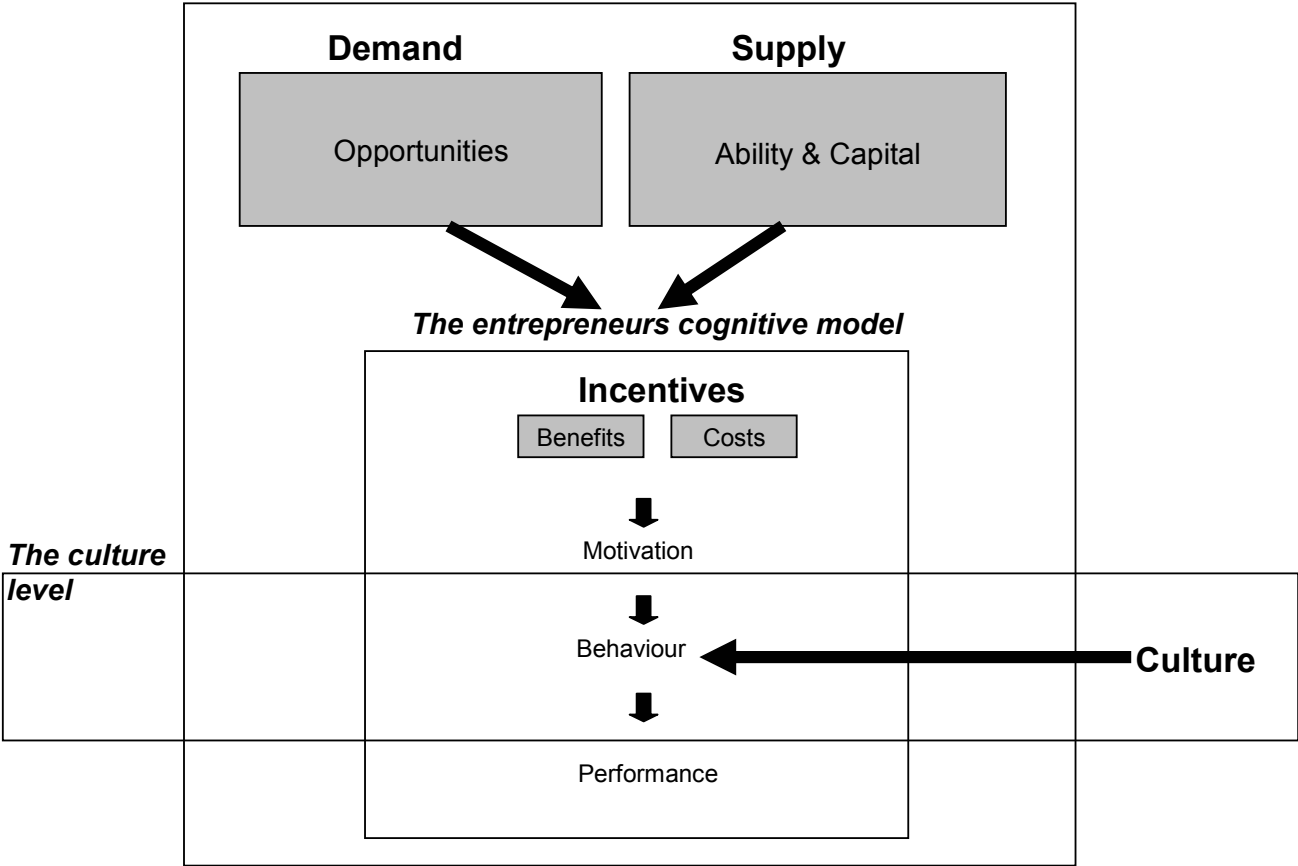
# 1. Define and quantify entrepreneurship performance

| <b>Entry of Firms</b>   | <b>Creation of High-Growth Firms</b>  |
|---|---|
| Firm entry rates, average 2000-2002 (New firms in % of existing firms)                        | Share of young firms with more than 60 % growth rates in turn-over in a three year period, 1999 – 2003  |
| Entrepreneurial activity (TEA) from <i>Global Entrepreneurship Monitor, average 2000-2002</i> | Share of young firms with more than 60 % growth rates in employment in a three year period, 1999 – 2003 |

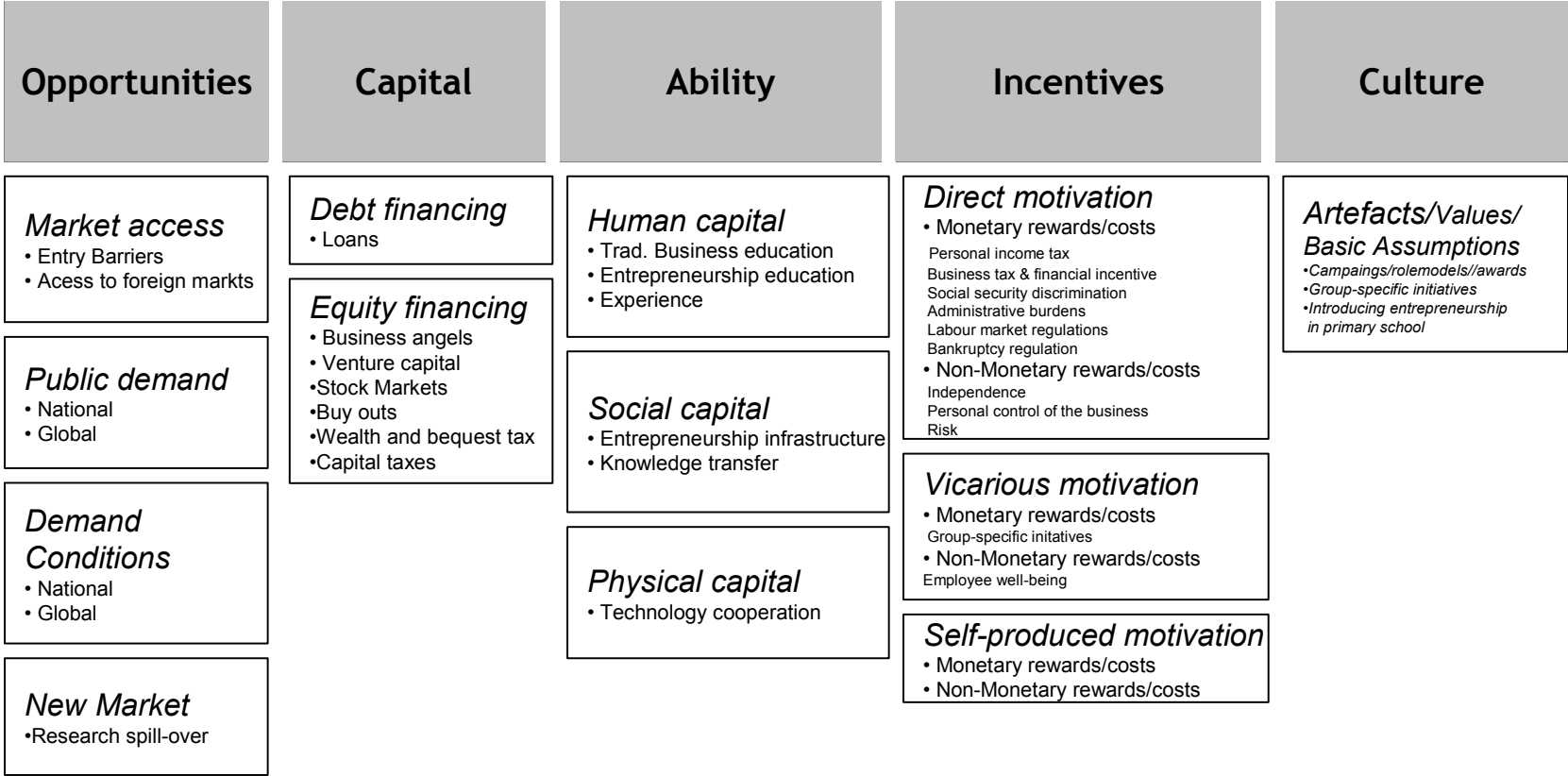
# 2. Check for robustness and rank countries according to performance



# 3. Define relevant policy areas and select indicators



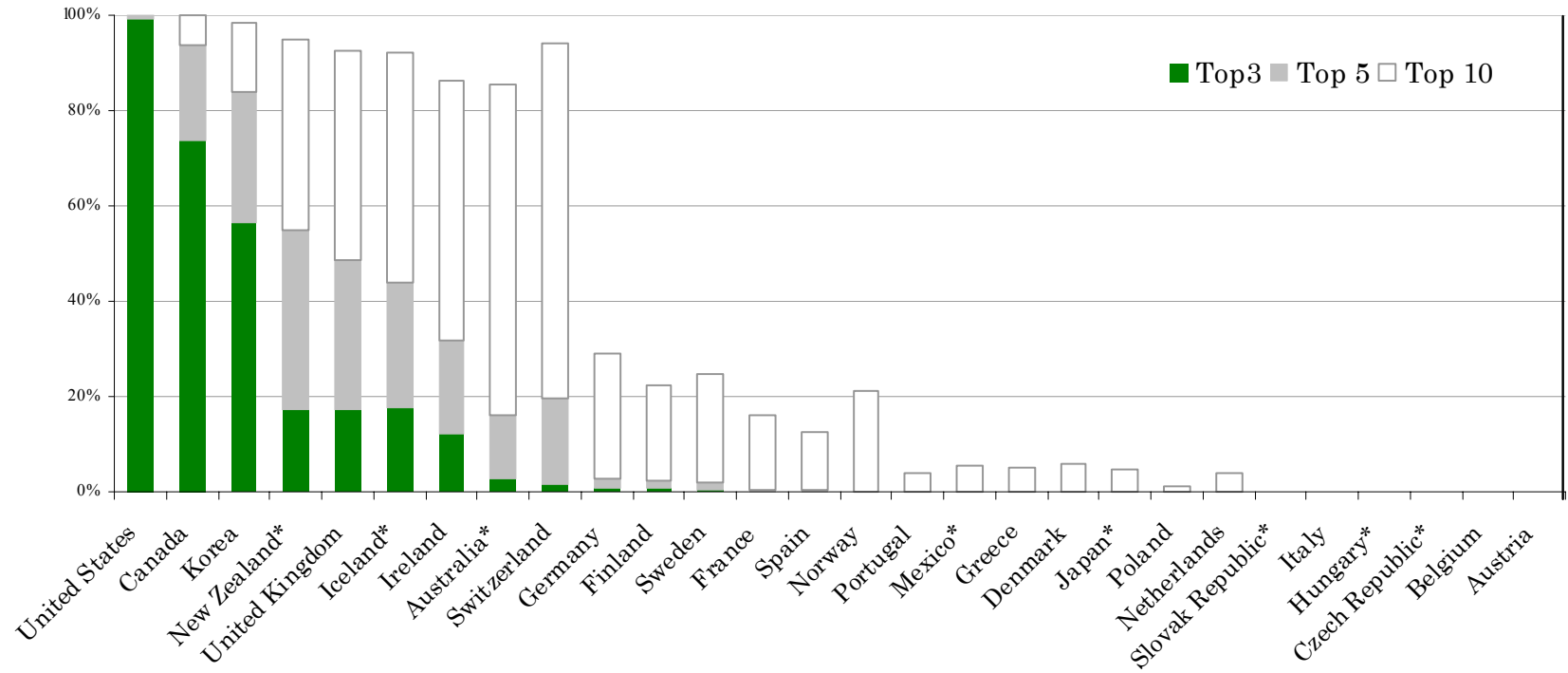
# 3. Define relevant policy areas and select indicators



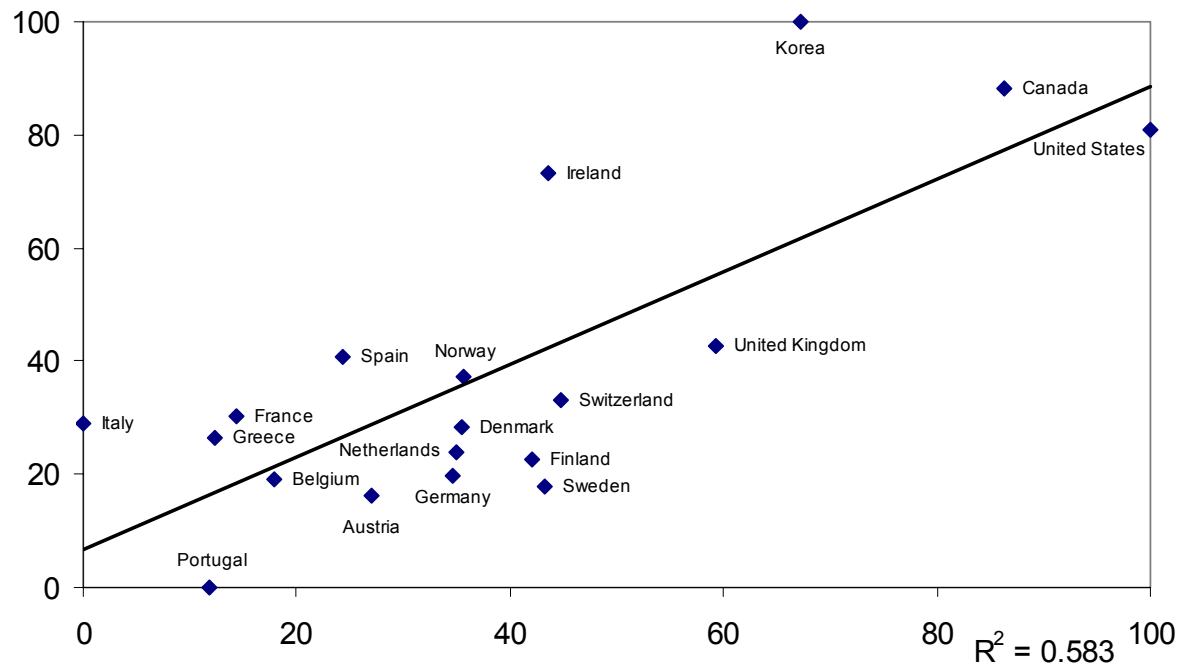
# 3. Define relevant policy areas and select indicators

| A total measure of the framework conditions relating to entrepreneurship |                                       |                                    |  |   |
|--|---------------------------------------|------------------------------------|--|---|
| Opportunities  | Capital                               | Ability                            | Incentives                             | Culture   |
| Deregulation/<br>Entry Barriers  | Loans                                 | Business<br>education              | Personal<br>Income tax                 | Entrepreneurial<br>motivation                         |
| Access to foreign<br>markets   | Business Angels                       | Entrepreneurship<br>education      | Corporate taxes &<br>Fiscal incentive  | Group-specific<br>initiatives                         |
| Procurement<br>regulation  | Private equity<br>firms               | Experience                         | Social security<br>discrimination      | Campaigns/<br>role models/<br>awards                  |
| National/Global<br>demand<br>conditions                                  | Venture capital                       | Entrepreneurship<br>infrastructure | Administrative<br>burdens              | Introducing<br>Entrepreneurship<br>In primary schools |
| Knowledge<br>transfer  | Stock markets or<br>alternative exits | Co-operation                       | Labor market<br>regulation             |   |
| Test<br>facilities   | Wealth &<br>bequest tax               |                                    | Bankruptcy<br>legislation              |   |
|  | Capital taxes                         |                                    | Campaigns                              |   |
|  |                                       |                                    | Initiatives towards<br>Specific groups |   |

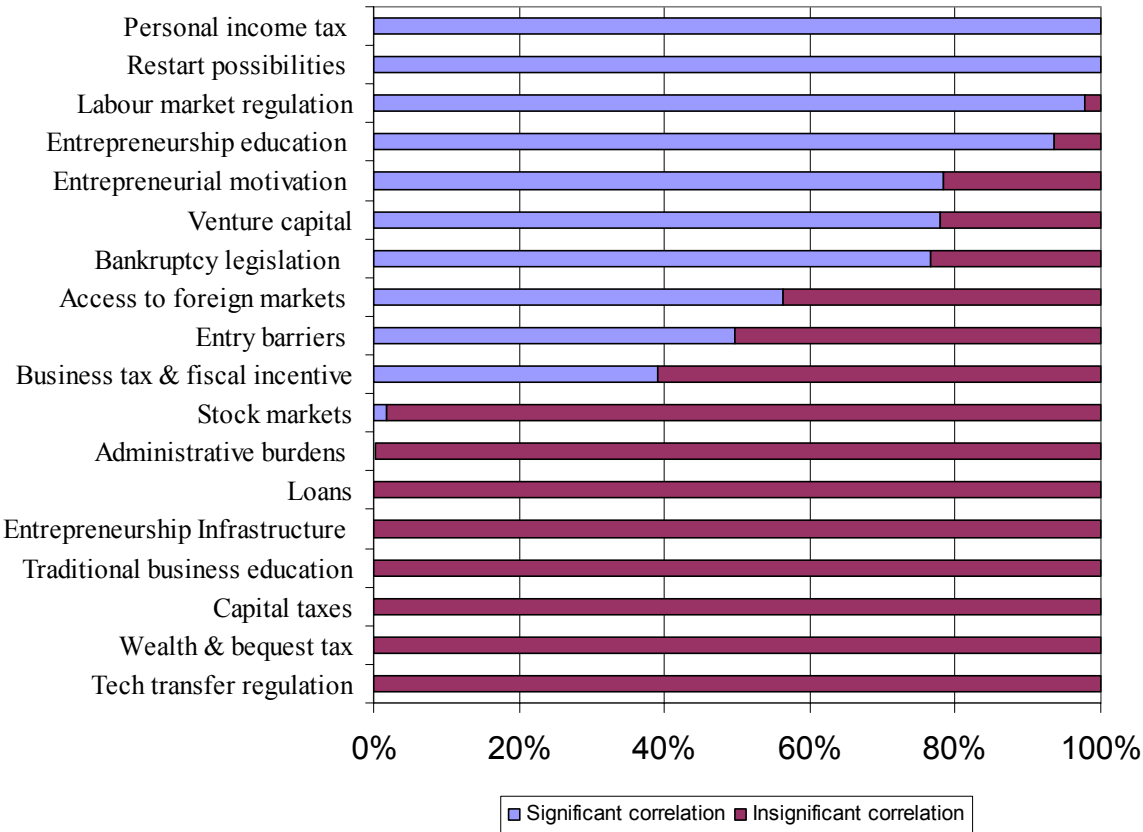
# 4. Check for robustness and rank countries according to policies



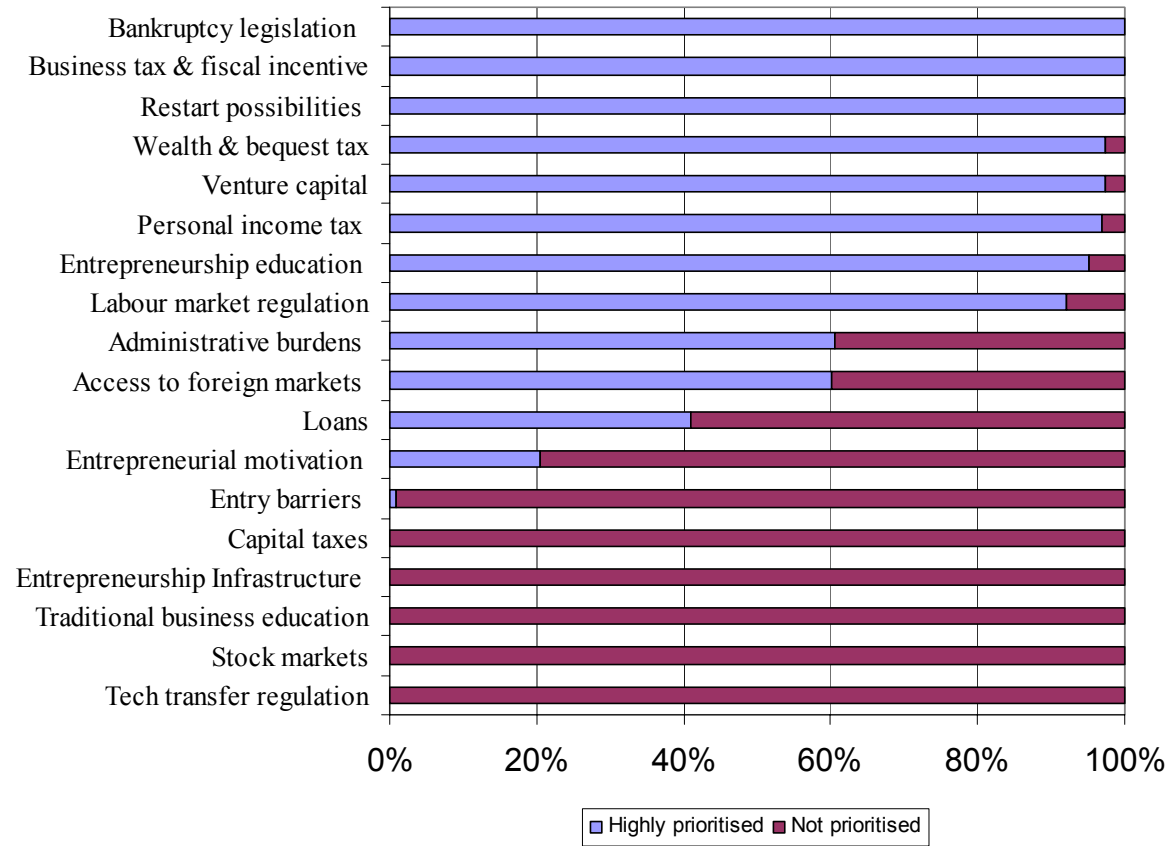
# 5. Test for correlation between performance and policies



# 6. Identify critical policy areas for seizing the benefits of entrepreneurship - Correlations

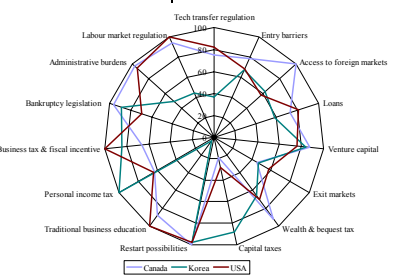


# 6. Identify critical policy areas for seizing the benefits of entrepreneurship – Comparative analysis



# 6. Identify critical policy areas for seizing the benefits of entrepreneurship – Combined approach

|                                  | Not significant correlated with performance indicators   | Significant correlated with performance indicators  |
|----------------------------------|--|---|
| High priority in top-3 countries | <ul style="list-style-type: none"> <li>Business tax and fiscal incentive</li> <li>Administrative burdens</li> <li>Wealth and bequest tax</li> <li>Access to foreign markets</li> </ul>                       | <ul style="list-style-type: none"> <li>Venture capital</li> <li>Restart possibilities</li> <li>Bankruptcy legislation</li> <li>Entrepreneurship education</li> <li>Personal income tax</li> <li>Labour market regulation</li> </ul> |
| Low priority in top-3 countries  | <ul style="list-style-type: none"> <li>Exit markets</li> <li>Capital taxes</li> <li>Traditional business education</li> <li>Entrepreneurship infrastructure</li> <li>Loans</li> <li>Tech transfer</li> </ul> | <ul style="list-style-type: none"> <li>Entrepreneurial motivation</li> <li>Entry barriers/deregulation</li> </ul>   |



# 7. Prioritising between the policy areas – Identify weak policy areas by comparing policies in individual countries with best performers



Table 3: Benchmarking Germany’s business environment against the top performing countries.

|                                  | Not significant correlated with performance indicators   | Significant correlated with performance indicators   |
|----------------------------------|--|--|
| High priority in top-3 countries | Business tax and fiscal incentive<br><b><i>Administrative burdens</i></b><br>Wealth and bequest tax<br><b><i>Access to foreign markets</i></b>           | <b><i>Venture capital</i></b><br><b><i>Restart possibilities</i></b><br><b><i>Bankruptcy legislation</i></b><br><b><i>Entrepreneurship education*</i></b><br><b><i>Personal income tax</i></b><br><b><i>Labour market regulation</i></b> |
| Low priority in top-3 countries  | <b><i>Exit markets</i></b><br>Capital taxes<br><b><i>Traditional business education</i></b><br>Entrepreneurship infrastructure<br>Loans<br>Tech transfer | <b><i>Entrepreneurial motivation</i></b><br>Entry barriers/deregulation  |

Note: Policy areas are in **bold and italic** if the value for Germany is more than 10 per cent lower than the value for that particular policy area in the top-3 countries. The value for Entrepreneurship education should be treated with some caution as the value for Germany changed substantially from 2003 to 2004. This could be due to an error in the 2004 data or in the collection procedure in Germany.

8. Improve the business environment in weak policy areas by using peer review to learn from best performers



> Bankruptcy and restart possibilities

## Our experience

---

- > ... has been a useful tool for preparing policy:
  - > Identifying weak policy areas
  - > Inspiration to new policy designs
  - > Help to persuade
  - > Works for us (Policy impact)