

# Systems failures and innovation policy: do national policies reflect differentiated challenges in the EU27:

*Evidence from the European TrendChart on Innovation*

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## The basic argument:

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- depending on their closeness to the technological frontier, their level of development and the type and extent of failures in their innovation systems, different EU Member States need to adopt a differentiated “innovation policy mix” in order to boost their innovation performance.

## If we believe in innovation systems we need to design policy to tackle their failures

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Normally, we rationalise the need for policy intervention based on:

- Market failure: market mechanisms unable to secure long-term investments in innovation:

Increasingly we need to identify and take account of:

- Capability failure: inadequacies in companies ability to exploit full potential
- Network failure: problems in the interaction among actors in innovation systems
- Institutional failure: inadequacies in other NIS actors (universities, patent offices,...)
- Framework failure: gaps in regulatory frameworks, IPR regime, consumer demand
- Policy failure: shortcomings in governance capacity

## It's the economy (and institutions), stupid...

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- If we believe that the level of development and structure of an economy influences significantly innovation performance then investing more in R&D is not enough:
  - *the basic micro and macro-economic conditions for innovation-based growth need to be in place, namely i) competition and market entry, ii) investment in higher education, iii) reform of credit and labour markets and iv) counter-cyclical fiscal policy (Aghion 2006)*
- And we need policy that fosters functioning 'institutions'
  - *The huge divergence in growth rates which is so obvious a feature of long-term growth over the past two centuries must be attributed in large measure to the presence or absence of social capability for institutional change, and especially for those types of institutional change which facilitate and stimulate a high rate of technical change. Freeman (2006)*

## Innovation policy : a shifting focus ?

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- the public sector role is not to promote ‘individual innovation events’, rather:
  - “ *...it is setting the framework conditions in which innovation systems can better self-organize across the range of activities in an economy. Moreover, whereas the market failure approach leads to instruments that allocate resources to firms in the form of R&D grants or tax incentives, the systems failure approach leads to instruments that enhance innovation opportunities and capabilities. Because systems are defined by components interacting within boundaries, it follows that a system failure policy seeks to address missing components, missing connections and misplaced boundaries*”.

*Metcalf (2005)*

## What we try to do in the TrendChart framework:

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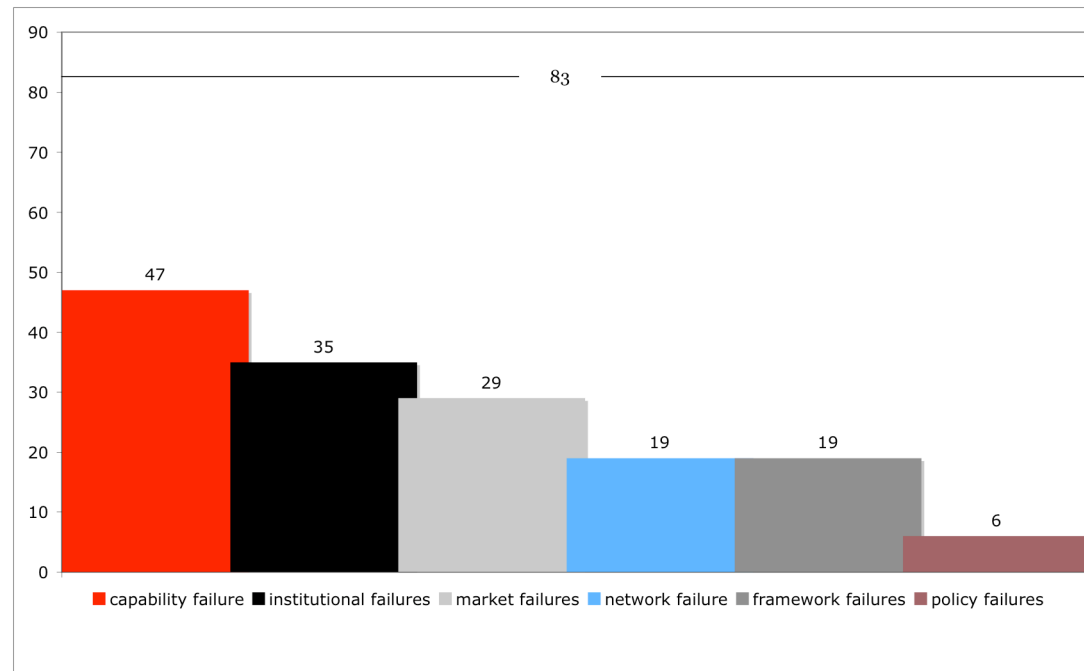
- Test a new approach to cross-country comparative analysis of national innovation policies
  - *Using the country groups defined by the 2008 European Innovation Scoreboard;*
- Classify key innovation challenges according to specific ‘systemic failures’;
- Review the adequacy of the innovation policy mix developed in response to the system failures.
- Identify trends in the EU27 in terms of the mix of policy measures.

## EIS Country Groups 2008 and growth in performance (convergence)

<b>Group</b>	<b>Growth rate</b>	<b>Growth leaders</b>	<b>Moderate growers</b>	<b>Slow growers</b>
Innovation leaders	1.6%	Switzerland (CH)	Germany (DE), Finland (FI)	Denmark (DK), Sweden (SE), United Kingdom (UK)
Innovation followers	2.0%	Ireland (IE), Austria (AT)	Belgium (BE), Luxembourg (LU)	France (FR), Netherlands (NL)
Moderate innovators	3.6%	Cyprus (CY), Portugal (PT)	Czech Republic (CZ), Estonia (EE), Greece (GR), Iceland (IS), Slovenia (SI)	Italy (IT), Norway (NO), Spain (ES)
Catching-up countries	4.1%	Bulgaria (BG), Romania (RO)	Latvia (LV), Hungary (HU), Malta (MT), Poland (PL), Slovakia (SK), Turkey (TR)	Croatia (HR), Lithuania (LT)

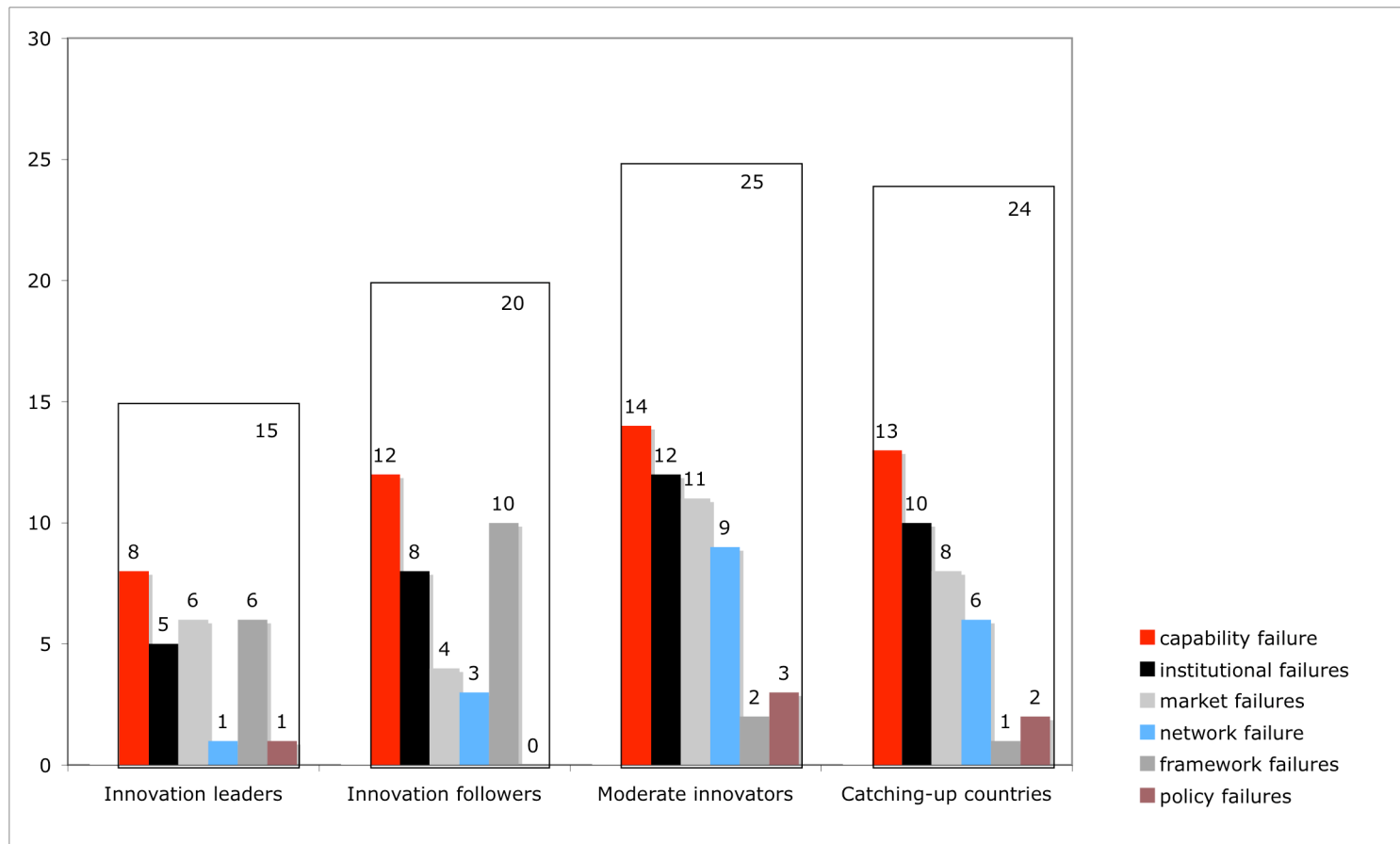
Average annual growth rates as calculated over a five-year period.

## Which types of failures are identified as policy challenges (2008 TrendChart country reports)



- *Capability failures are the most prevalent form of challenge identified ahead of institutional and market failures.*
- *the shortcomings of framework conditions are considered more significant in the innovation leaders and followers !*

## Challenges for innovation policy by type of innovation system failure by EIS country group



## Analysis of recent policy trends

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- Highest relative increase in: measures supporting innovative start-ups and technology transfer between firms
- Together with a slight increase in measures supporting risk capital...
- ...suggests an increased focus of innovation policy on supporting fast growing innovative SMEs, especially start-ups and spin-offs (particularly in catching-up countries)
- Certain slowdown in measures addressing R&D cooperation
- Jump in number of policy measures from 2004 clearly due to new Member States using Structural Funds

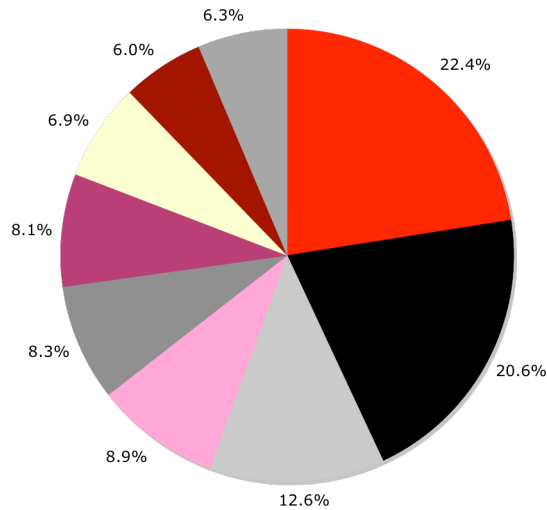
## Policy priorities in the EU innovation mix

- Support for R&D cooperation (priority for 27% of all measures)
- Strategic research policies (17%)
- Direct support for business R&D (16.6%)
- Support to innovative start-ups (15.3%)
- Excellence and management of research in universities (15%)
- Knowledge transfer (14.9%)
- Support to PROs (14.5%)
- Support to innovation management (10.9%)
- Cluster framework policies (9.4%)
- Support to sectoral innovation in manufacturing (9.2%)

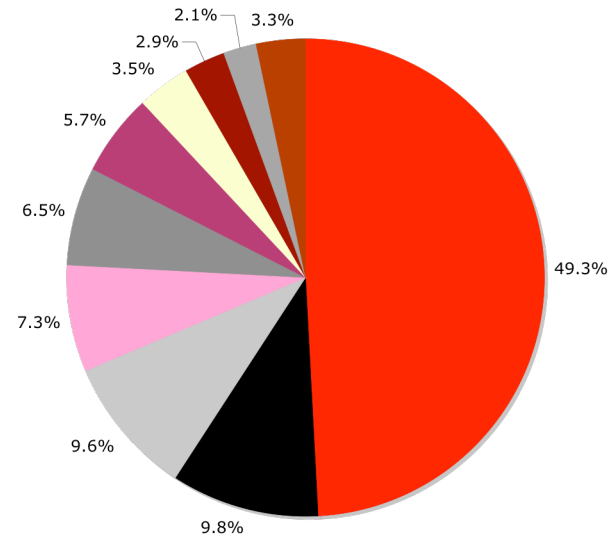
- **R&D cooperation is the key policy priority for all EIS groups**
- **Innovation leaders concentrate 40% of all policy measures on R&D cooperation**
- **Share of priorities related to science policy is higher in innovation leaders**
- **Innovation leaders concentrate on a smaller number of STI policies**

# Next step : what happens if we factor in budgets for innovation policy ?

Estimated annual budget per policy priority in Hungary



Estimated annual budget per policy priority in Finland



- 4.2.3 Support to technology transfer between firms
- 4.3.1 Support to innovative start-ups incl. gazelles
- 2.1.4 Research Infrastructures
- 2.2.3 R&D cooperation (joint projects, PPP with research institutes)
- 1.3.1 Cluster framework policies
- 4.2.1 Support to innovation management and advisory services
- 2.3.1 Direct support of business R&D (grants and loans)
- 2.1.1 Policy measures concerning excellence, relevance and management of research in Universities
- Other

- 2.2.3 R&D cooperation (joint projects, PPP with research institutes)
- 4.3.1 Support to innovative start-ups incl. gazelles
- 4.1.2 Support to innovation in services
- 3.1.3 Stimulation of PhDs
- 2.1.1 Policy measures concerning excellence, relevance and management of research in Universities
- 3.2.3 Mobility of researchers (e.g. brain-gain, transferability of rights )
- 1.3.1 Cluster framework policies
- 4.1.1 Support to sectoral innovation in manufacturing
- 4.2.2 Support to organisational innovation incl. e-business, new forms of work organisations, etc
- Other

## Main findings

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- Innovation policy challenges differ across MS depending on level of economic development, innovation performance and maturity of policies
- Moderate innovators and catching-up countries give more emphasis to direct support to companies (capability failures).
- The policy mix in more advanced countries gives more emphasis to network failures;
- Catching-up countries and moderate innovators recognise facing significant institutional failures, but policy responses are limited;
- Advanced countries tend to introduce less, but larger support measures addressing diverse groups of stakeholders.

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Thank you

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