



DYNREG



CITIZENS AND GOVERNANCE IN A
KNOWLEDGE-BASED SOCIETY

**Dynamic Regions in a Knowledge-Driven Global Economy:
Lessons and Implications for the European Union - DYNREG**

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**The role of public policies in fostering innovation
and growth**

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Research questions

1. To what extent do public policies influence economic growth?
2. What are the implications for policymakers?

What do we know?

- A unified theory that matches empirical facts is still missing
- Instead, the emergence of endogenous growth theory since the early 1990s induced a vast strand of literature suggesting numerous potential macroeconomic and industrial policies that influence economic growth
- 2/3 of international income and growth differences are due to **variations in total factor productivity** (e.g. Caselli, 2005)
 - should focus on public policies that foster innovation, R&D, adoption of new technologies, competition among firms, etc.
- Rodrik (2005): need to distinguish institutional outcomes from **actual policies to install 'good institutions'**
 - Different policies can lead to good institutional outcomes
 - Optimal policy depends on a country's stage of development

Human capital

Research papers:

- Bernhard Kurka & Gunther Maier: Star Scientists and the Development of the Regions: Results of a Survey of Highly-Cited Researchers
- Christian Reiner: Competing for the Brains: Brain-Competition Policies for Regional Development in Austria and Europe

Policy implications:

- Market size matters: foster the creation of a unified labour market for scientists at the EU level
- Brain competition policies should be coordinated at the EU level: e.g. the promotion of a point based evaluation system for potential immigrants

- Ensure that non-EU graduates from European universities can enter the EU labour market
- Currently there is a lack of data at the EU level that would allow for the evaluation of brain gain policies
- Policy should follow a comprehensive approach to improve regional involvement of scientists, i.e. incentive structure in universities as well as industries must be improved

Industrial and innovation policies

Research papers:

- Jozse Damijan & Crt Kostevc: How efficient are public R&D subsidies in promoting firm's innovation and growth? Evidence from Slovenia”
- Patricia van Hemert & Peter Nijkamp: The relation between public subsidies, business R&D and innovation A quantitative meta-analysis

Policy implications:

- Public R&D subsidies appear to be effective in countries that are further away from the technological frontier
- Slovenia: public R&D subsidies promoted firm-level innovations in the last decade, especially in large and medium size firms

- Private funding is more efficient for R&D investments while public funding is more efficient for education
- R&D cooperations between domestic firms and foreign institutions are more efficient than cooperations between domestic firms and domestic institutions

Trade policies and spillovers from FDI

Research papers:

- Armando Rungi: Changing patterns of international integration: the European Union and trade in intermediates
- Petrakos G., Skayannis P., Papadoulis A. & Anastasiou G.: Entrepreneurship, innovation and regional development: A Southern European perspective
- Murphy, G., Nash, I. & Siedschlag, I.: What drives the location choice of R&D multinationals in the European Union?
- Murphy, G., Nash, I. & Siedschlag, I.: Factors driving the internationalisation of ICT in the European Union

Policy implications:

- The value added content of trade in intermediates can differ substantially from aggregated current accounts
- A removal of internal and external trade barriers fosters technology spillovers and competition from imports/exports
- Policymakers should continue to focus on the improvement of a region's absorptive capacity (e.g. provision of infrastructure, education) and abstain from a race to the bottom in corporate taxes/subsidies
- Agglomeration effects: foreign R&D investments primarily locate in R&D intensive regions; R&D spillovers are also higher in these regions
- R&D intensive foreign investments from the U.S. primarily locate in U.K. or Germany

Macroeconomic policies

Research paper:

- Schiffbauer, M., Evers, M. & Niemann, S.: Inflation, Investment Composition and Total Factor Productivity

Policy implications:

- Inflation can affect a firm's choice of technology and hence long-run aggregate productivity growth if financial markets are incomplete
- The effects of inflation and financial development on productivity growth are interdependent: i.e. the negative impact of inflation is more pronounced in financially less developed Eastern European countries than in the U.K., France, or Germany

Final remarks

- The research provides policy implications from a range of different but interdependent sources of economic growth
- An appropriate policy mix depends on a country's stage of development and country specific 'bottlenecks'
- This generates a certain degree of uncertainty associated with the introduction of new policy measures that worked out well in comparable scenarios elsewhere
- It follows that evaluation, monitoring, and screening methods should go along with a policy change

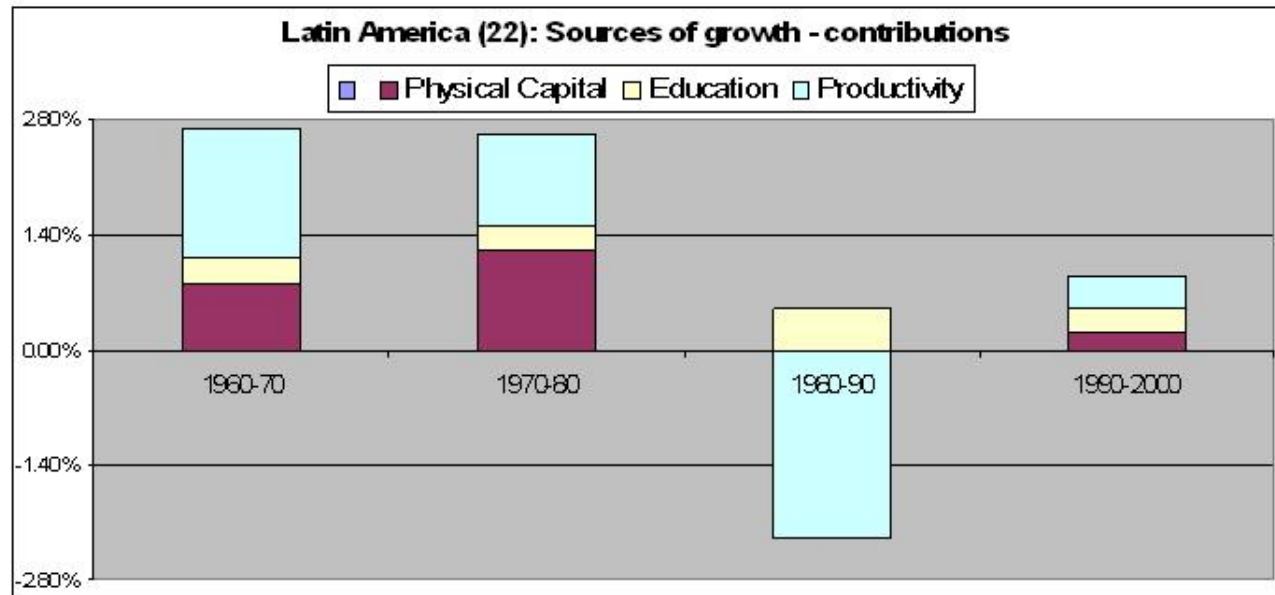
What is the optimal policy to achieve good institutions?

Table 1 - World Bank's 'Star Globalizers' (source: Collier and Dollar, 2001)

Country	Growth rate in the 1990s	Trade policies
China	7.1%	Average tariff rate 31.2%, national trade barriers, not a WTO member
Vietnam	5.1%	Tariffs range between 30 – 50%, national trade barriers and state trading, not a WTO member
India	3.3%	Tariffs average 50.5% (2. highest in the world)
Uganda	3.0%	Moderate reform

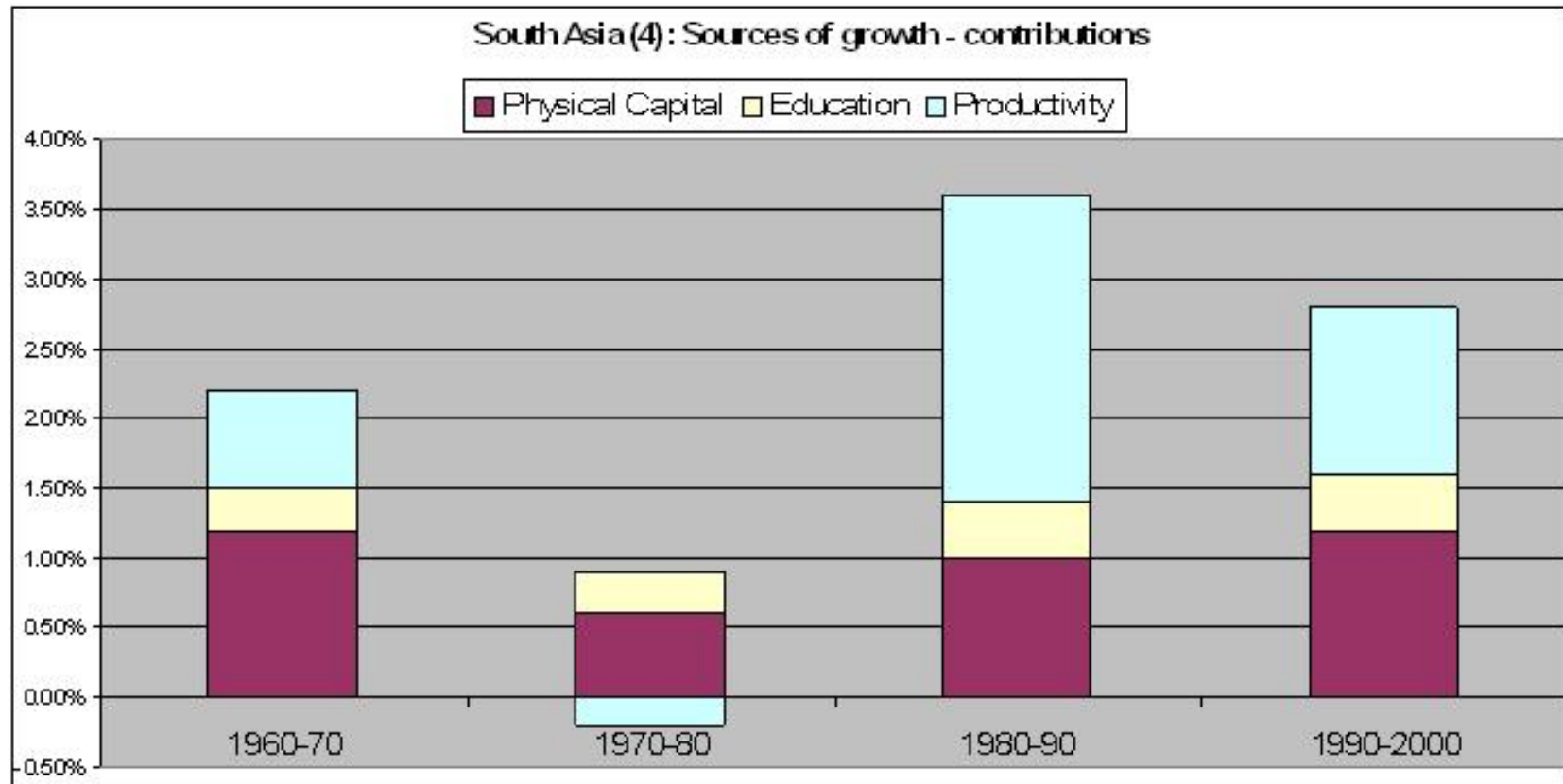
- R&D intensive countries/sectors are more productive, but do public R&D subsidies promote firm's productivity?

Sources of growth



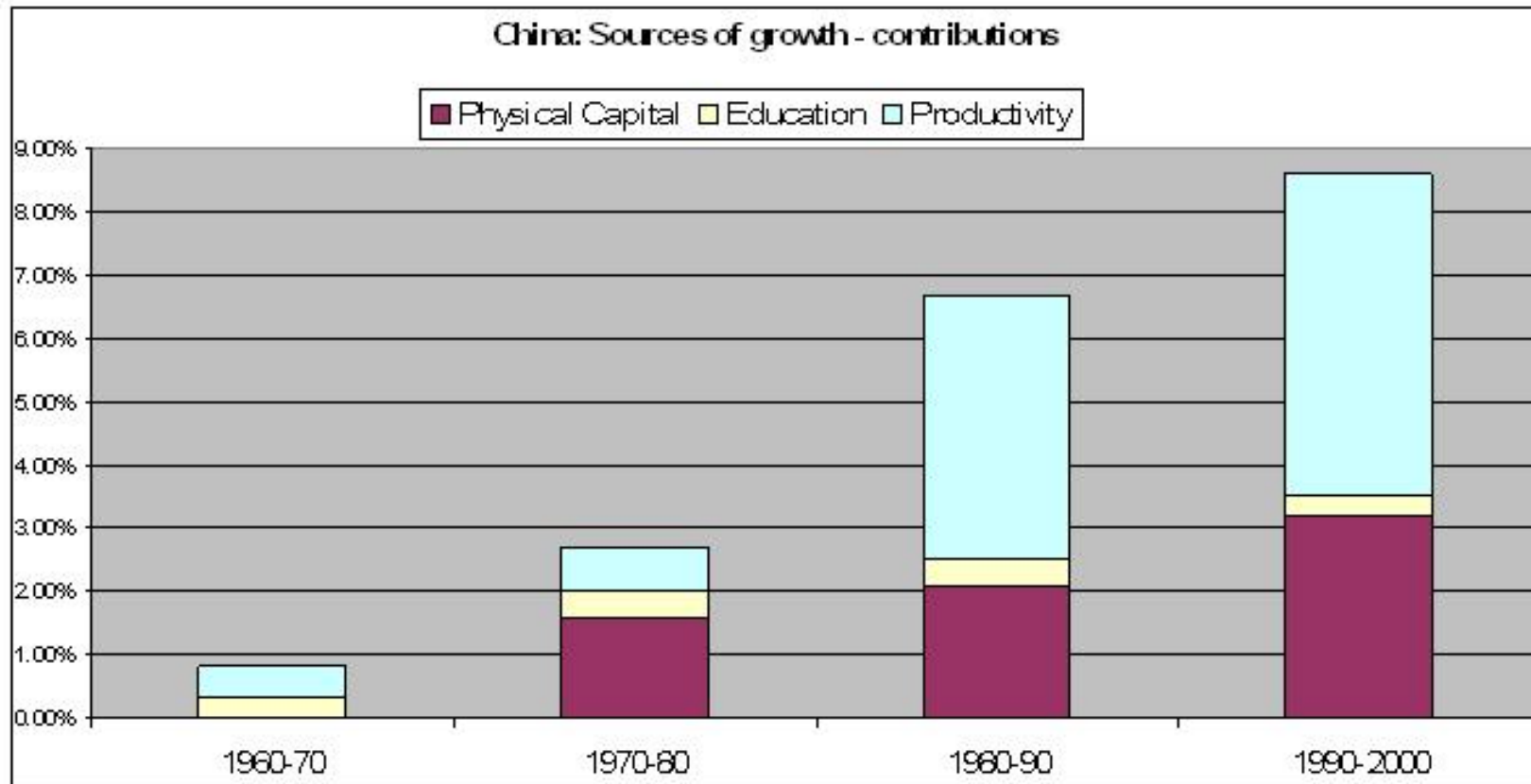
Data: Bosworth and Collins (2003)

Figure 1: *Latin America: Sources of growth*



Data: Bosworth and Collins (2003)

Figure 2: *South Asia: Sources of growth*



Data: Bosworth and Collins (2003)

Figure 3: *China: Sources of growth*