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STI Policy Instruments: Procurement and Finance

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Agenda

- Introduction
- Using Public Procurement to promote STI
- Financing STI

Introduction: Types of instrument

- Regulatory instruments are legal tools (laws, rules, directives, etc.) that regulate social and market interactions and are obligatory in nature
- Economic and financial instruments provide specific pecuniary incentives (or disincentives) that support specific social and economic activities.
- Soft instruments are voluntary and non-coercive. They make recommendations, set standards, promote codes of conduct, or offer voluntary or contractual agreements. d on less hierarchical forms of cooperation between the public and private sectors

Using Public Procurement to promote STI

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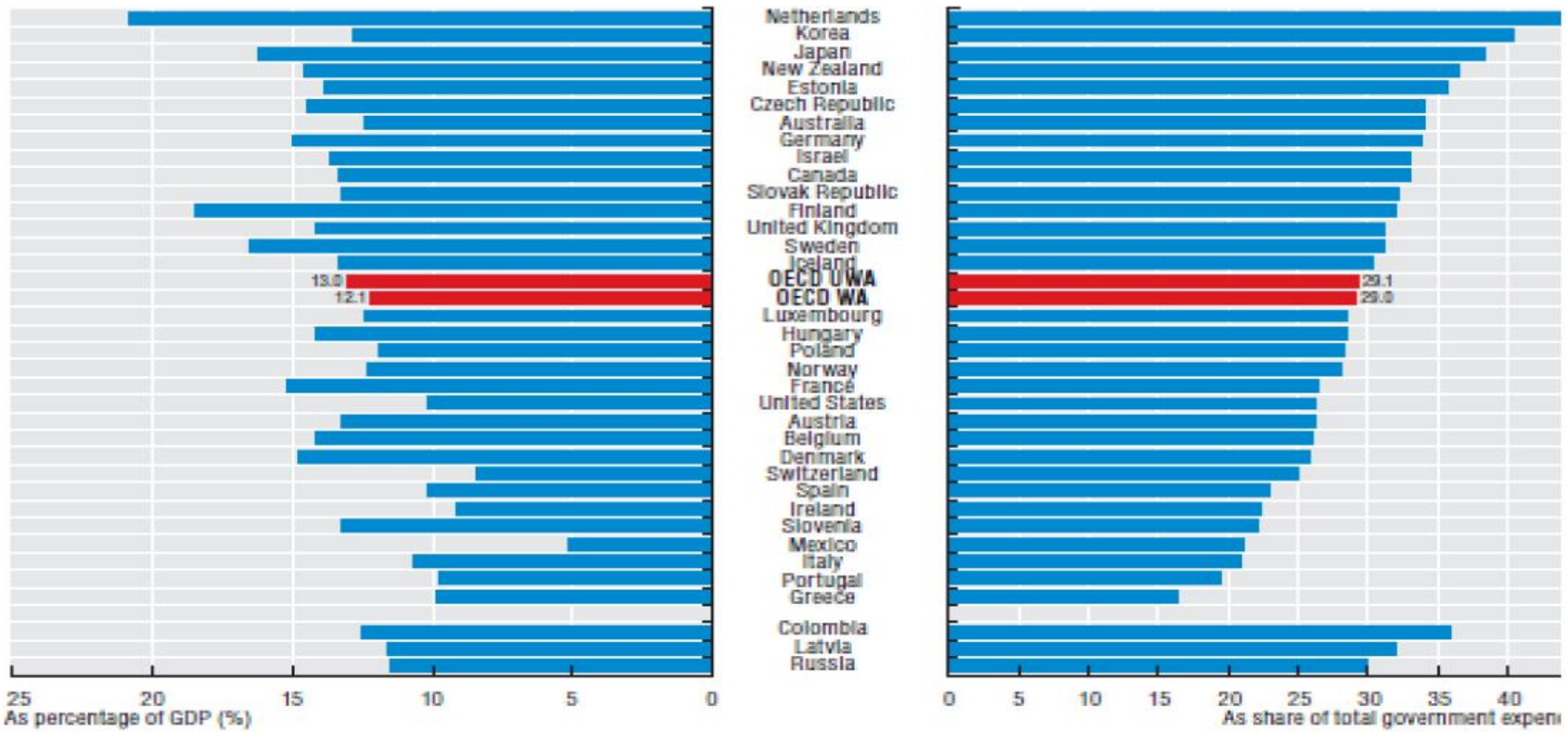
Rationale and instruments

- As a large user, government's public procurement can be highly influential on the direction of economic activity
- Two generic approaches:
  - *Public procurement of innovation:* the public sector buys new goods and services that do not exist yet in the market; and
  - *Public procurement for innovation:* the public sector seeks to stimulate innovation withouth necessarily purchasing new products.
- As a tool to stimulate innovation public procurement can play several roles, including:
  - Stimulating the development of innovative productive capacity;
  - Promoting the generation and adoption of innovative goods and services;
  - Encouraging the development of pre-commercial innovative products and services;
  - Playing a role as a catalyst.
- Procurement under WTO rules
  - The Government Procurement Agreement (GPA) regulates procurement policies for signatories by laying down rules guaranteeing fair and non-discriminatory conditions for internationally competitive
  - GPA requires immediately and unconditionally provide treatment to the products, services and supplies of other parties that is no less favourable than that accorded to domestic products and services
  - The WTO GPA prohibits the use of offsets, also known as domestic content requirements, although there are limited exemptions for developing countries: local content rules cannot be included in contracts bu environmental standards can be set

Table 1 OECD estimates of general government procurement as a percentage of GDP and as a share of government expenditures



Source: OECD National Accounts Statistics (database). Data for Australia are based on a combination of Government Finance statistics and Accounts data provided by the Australian Bureau of Statistics.

http://dx.doi.org/10.1787/888

Public procurement measures to stimulate innovation

Deficiencies addressed	Instrument types	Examples	Evidence
i) Procurement regulations driven by competition at expense of innovation ii) Requirements for public tenders unfavourable to SMEs	i) Introduction of innovation-friendly regulations ii) Simplification of and easier access to tender procedures	2005 change in EU directives including functional specifications Paperless procedures, electronic portals, targets for SME participation	Certain mechanisms (such as division into lots) increase SMEs contracting Lack of evidence of impact of targets and set asides for SMEs
i) Lack of awareness of innovation potential or innovation strategy in organization ii) Procurers lack skills in innovation-friendly procedures	i) High-level strategies to embed innovation procurement ii) Training schemes, guidelines and best-practice networks iii) Subsidies for additional costs of public innovation procurement	UK Innovation Procurement Programmes (IPPs) 2009-2010 Netherlands PIANOo support network, European Lead Market Initiative networks of contracting authorities Finnish agency TEKES meeting 75% of costs in planning stage	No evidence of effects of IPPs (uneven quality, discontinued) Small and indirect impact on innovation of support networks (e.g. PIANOo)
i) Lack of communication between end users, commissioning & public procurement function ii) Lack of knowledge & organized discourse about wider possibilities of supplier's innovation potential	i) Pre-commercial procurement of R&D to develop & demonstrate solutions ii) Innovation platforms to bring suppliers & users together; Foresight & market study processes; Use of standards & certification of innovations	SBIR (USA, NL & Australia), SBRI (UK), PCP EC & Flanders Competitive dialogue procedure Lead Market Initiative (EU), Innovation Platforms (UK, Flanders) China catalogues of needs and possible solutions	Positive if 'dialogue' conducted adequately Danger of 'cherry picking' No evidence (discontinued) (Li,2011)
i) Risk of lack of take up of suppliers' innovations ii) Risk aversion by those responsible for public procurement	i) Calls for tender requiring innovation; guaranteed purchase or certification of innovation; guaranteed price/tariff or price premium for innovation ii) Insurance guarantees	German law enabling innovation demands in tenders; UK Forward Commitment Procurement; Immunity & certification scheme (Republic of Korea); China innovation catalogues	No evidence of forward commitment procurement (lack of evaluation) Certification and insurance schemes in Republic of Korea leading to higher contracting among high technology SMEs

Table 2 Value of procurement markets in key countries under the WTO GPA

Parties/Specific Sectors	European Union (2007)	Japan (2008)	United States (2008)	TOTAL
Construction Services	USD 125.7 billion	USD 11 billion	USD 287 billion	USD 423.7 billion
Pharmaceutical Products, Health Services and – Related Entities	USD 15.1 billion	USD 1.46 billion	USD 120 billion	USD 136.56 billion
Computer and Related Services	USD 46.5 billion	USD 2.1 billion	USD 1.6 billion	USD 54.83 billion
Telecommunication Services	USD 4.1 billion	USD 531 million		
Chemical Products	USD 21 billion	USD 7.2 billion	USD 2.24 billion	USD 23.25 billion
Fuels and Petroleum Products	USD 4.5 billion	-	USD 12.3 billion	USD 16.8 billion
Machinery and Associated Products	USD 14 billion	USD 329 million	USD 518 million	USD 14.85 billion
Textile, Clothing and Footwear	USD 4.4 billion	USD 19 million	-	USD 4.42 billion
Plastic and Rubber Products	USD 903 million	USD 3 million	USD 53 million	USD 959 million
Wood Products	USD 195 million	USD 62 million	-	USD 257 million
TOTAL	**USD 236.4 billion**	**USD 15.51 billion**	**USD 423.71 billion**	**USD 675.63 billion**

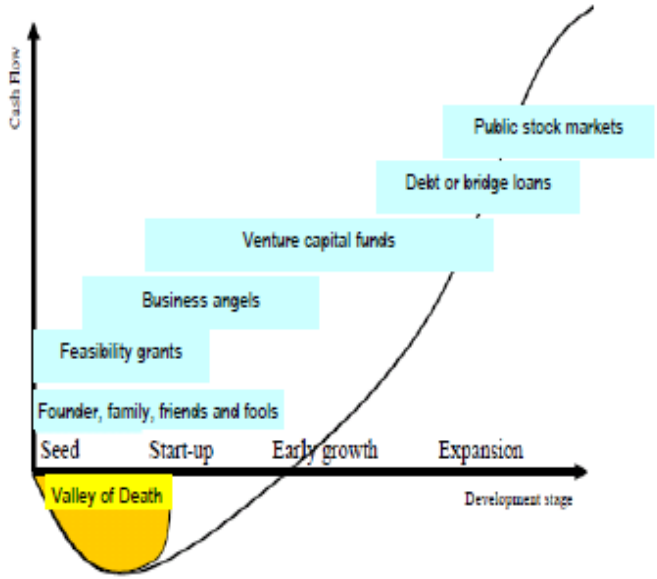
Source: R. Anderson, K. Osei-Lah, Anna Caroline Muller, "Assessing the value of future accessions to the WTO Agreement on Government Procurement (GPA): Some new data sources, provisional estimates, and evaluative framework for individual WTO members considering accession", Public Procurement Law Review, 34, 2011, p. 19.

Financing STI

Rationale and Instruments

- Acquiring and managing finance is a key function of any firm and is a major enabler in achieving their business goals. Firms require different type of finance depending of the activity involved or the stage of evolution
- Innovation often involves significant capital investments and is an uncertain, risky undertaking, which makes it more difficult to mobilize the necessary resources
- Enterprises fund their activities, including innovation, from private and public sources

Cash flow and financing as an enterprise develops over time



Source: Based on United Nations Economic Commission for Europe, 2009

Main sources of private funding

Private funding	Personal savings and funds from relatives and friends
	Personal savings from partners (or employees)
	Microcredit
	Crowdfunding
	Surplus carried forward from previous years
	Funding from business angels
	Venture capital
	Value chain financing
	Loans from commercial banks
	Stock markets
	Bonds

Source: UNCTAD

Public Funding for R&D and innovation

- Direct public funding enables governments to focus on overcoming particular barriers that are blocking innovation or on activities that are liable to be affected by market failures.
- Firms can also be directed to develop particular R&D activities, new R&D areas, industrial sectors that are new or are prioritized by governments
- Indirect financing operate more closely in line with market logic, mostly through tax incentives, for example for R&D.
- Key considerations for policy on financing innovation
  - Efficiency of public intervention in financing innovation
  - Identifying specific aims for policies and programmes on financing innovation
  - Instrument design and a suitable management framework
  - Combining instruments
  - Monitoring and evaluation
  - Developing the capacity to design and manage financing instruments

Main sources of public funding for R&D and entrepreneurial innovation

A. Direct public funding	1. Public grants/subsidies	Innovation funds and technology funds
	2. Debt financing	Subsidized loans
		Repayable grants
		Credit guarantees
	3. Capital funding	Seed funding
		Funds of funds
		Co-investment funds
	4. Public procurement for R&D and innovation	
	5. Innovation vouchers	
	6. Innovation awards	
	7. Development Bank instruments	
B. Indirect public funding	1. Tax incentives	Income tax incentives for enterprises
		Personal income tax credits
	2. Public spending on R&D	Competing research funds
		Enterprise-academia-government R&D partnerships (PPP)
	3. International development assistance	

Source: UNCTAD, based on (OECD, 2014a; UNCTAD, 2013b).

Types of R&D tax incentives used in OECD member countries, 2014

Design of the R&D tax incentive schemes	***Corporate income tax (CIT)***	*R&D tax allowance*		Brazil, China, Colombia, Czech Rep., Denmark, Finland, Greece, Hungary, Israel, Netherlands, Poland, Slovenia, Slovak Rep., South Africa, Turkey, United Kingdom
		R&D tax credit	*Volume-based*	Argentina, Australia, Austria, Canada, Chile, France, Iceland, Italy, Korea, Norway, Russian Fed., Spain, United States (energy)
			Incremental	Ireland, United States
			Hybrid	Japan, Korea, Portugal, Spain
		R&D tax allowance or tax credit (excluding each other)		Belgium
		Accelerated depreciation for R&D		Brazil, Canada, China, Denmark, Hungary, Latvia, Poland, Russian Fed., South Africa, Turkey, United Kingdom
	Payroll withholding and social security taxes			Belgium, France, Hungary, Netherlands, Spain, Sweden
	No carry-back/forward and refundable options			Brazil, Hungary, Korea
	Patent and intellectual property rights (IPR) expenditures			Argentina, Belgium, Brazil, Chile, France, Hungary, Poland, Portugal, Slovenia, Spain
Targeting firms	*SMEs*			Argentina, Australia, Canada, France, Hungary, Italy, Japan, Korea, Norway, Turkey, United Kingdom
	Young firms and start-ups			Belgium, France, Netherlands, Portugal, United States
	Large firms and multinationals			Costa Rica (Free Zone Regime), Turkey, United Kingdom
	Excluding large firms			Australia
	Firms hiring PhD or researchers			Brazil, France, Hungary, Portugal, Spain
Targeting R&D areas or industries	*Energy and environment*			Belgium, Hungary, United States
	Design and creative industries			France, Hungary
	Agriculture			Hungary
	Collaborative and subcontracted R&D			Chile, France, Hungary, Ireland (subcontractors), Italy, Norway, United Kingdom (SMEs and subcontractors)
	Excluding collaborative and subcontracted R&D			Czech Rep.

Source: (OECD, 2014a)

Many thanks for your attention!

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