Contracting for Development: law and innovation policies in Brazil

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Structure

- Premises
- Brazil’s NIS
- Contracting innovation
- Case: Embraer KC 390
- Persistent bottlenecks
- Conclusions

Premises

- While the State is not the responsible for innovation itself, public polices designed and implemented to foster R&D and other innovation-related activities are critical
- Such policies are structurally and functionally shaped and operated by legal and institutional arrangements
- Law plays a key role in promoting innovation through:
  - commissioning
  - procuring
  - regulating

CONTRACTING, in a broad sense

Premises 2

- Public-private interactions are key to foster innovation (Mazzucato, Rodrik, Block and others)
- Innovation-related contracts do more than fixing *market failures*. Innovation policy is about *market making*…
- Rather than "picking the winners", public-private contracts to boost innovation have the potential to disseminate new ideas and drive technological advance
- Processes are as important as policy outcomes
- Challenges to orthodox neoclassic economics
- But also to conventional/traditional legal approaches

Premises 3

- Through legal norms, processes, institutions, interpretations and actors:
  - Capacities for innovation and its governance are forged
  - Private competencies are stimulated and sustained
  - Public-private interactions are mediated and controlled in terms of *effectiveness* and *legitimacy*
- Roles of law in innovation (Eiffert, 2013):
  - keeping society open to innovation
  - preventing unacceptable risks
  - inducing (legal) innovation and institutional change

Brazil's National Innovation System

- Legislation on innovation exists and is fairly sophisticated

  - Constitutional provision
  - Innovation Stature (2004)
  - Tax Breaks in 2005
  - New Regulations in 2016 and 2018

- 2017: Brazil invests only 1,27% of GDP in R&D (47% private - GDP stagnant)

  ✓China: 2,06 (3/4 private)
  ✓USA: 2,78 (65% private)
  ✓Germany: 2,87 (66% private)
  ✓Japan: 3,49 (78% private)
  ✓South Korea: 4,23 (3/4 private)
  Source: Revista Fapesp (Jun. 2017)

Why does Brazil lag behind?

Contracting innovation: existing instruments

AVAILABLE LEGAL INSTRUMENTS
1) STI incorporating independent inventions
2) Researchers collaborating with another STI
3) Agreement for Research, Development and Innovation (CPDI)
4) Contractual agreeements that regulate access to STI's research facilities
5) STI rendering consultancies for public/private institutions
6) STI transfers rights to inventor
7) Researcher's employment license
8) State as minority shareholder
9) Tecnology transfer agreements
10) General measures to foster industrial innovation
11) Investment funds
12) Economic grants to enterprises (subvenção)
13) Technological bonus
14) Researcher working for another STI or company
15) Grant to researcher (to work on the productive sector)
16) Public commisioning of innovation (encomenda)
17) Partnership for Research, Development and Innovation (APPDI)

Risk Assessment

AVAILABLE LEGAL INSTRUMENTS	RISKS ASSOCIATED WITH THE INSTRUMENT		
	Low	Moderate	High
1) STI incorporating independent inventions	X		
2) Researchers collaborating with another STI	X		
3) Agreement for Research, Development and Innovation (CPDI)		X	
4) Contractual agreeements that regulate access to STI's research facilities	X		
5) STI rendering consultancies for public/private institutions	X		
6) STI transfers rights to inventor	X		
7) Researcher's employment license	X		
8) State as minority shareholder		X	
9) Tecnology transfer agreements		X	
10) General measures to foster industrial innovation		X	
11) Investment funds		X	
12) Economic grants to enterprises (subvenção)			X
13) Technological bonus			X
14) Researcher working for another STI or company	X		
15) Grant to researcher (to work on the productive sector)	X		
16) Public commisioning of innovation (encomenda)			X
17) Partnership for Research, Development and Innovation (APPDI)			X

What kind of risks?

- Adversarial tensions in contract relations
- Erratic and inconsequent judicialization of policies
- Formalistic/punitive control spreads “fear of discretion"
- Sustainability of long term (relational) contractual relations: electoral cycles compromise continuity
- Adequate use/combination of instruments vis-à-vis ends
- Knightian/Keynesian uncertainty immanent to innovation

Knowledge Flows

AVAILABLE LEGAL INSTRUMENTS	WHO BENEFITS FROM THE KNOWLEDGE FLOWS			
	Productive Sector	Scientific and Technological Institutions (STI)	Instrument can be used by both agents - knowledge flows are unidirectional	Both agents benefit from the knowledge flows (Bi-directional)
1) STI incorporating independent inventions		X		
2) Researchers collaborating with another STI		X		
3) Agreement for Research, Development and Innovation (CPDI)		X		
4) Contractual agreeements that regulate access to STI's research facilities	X			
5) STI rendering consultancies for public/private institutions	X			
6) STI transfers rights to inventor	X			
7) Researcher's employment license	X			
8) State as minority shareholder	X			
9) Tecnology transfer agreements	X			
10) General measures to foster industrial innovation	X			
11) Investment funds	X			
12) Economic grants to enterprises (subvenção)	X			
13) Technological bonus	X			
14) Researcher working for another STI or company			X	
15) Grant to researcher (to work on the productive sector)			X	
16) Public commisioning of innovation (encomenda)			X	
17) Partnership for Research, Development and Innovation (APPDI)				X

Case: Embraer's KC 390

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- Embraer: SOE privatized in 1994
- KC 390 aircraft (cargo): commissioned by the Brazilian state
- Embraer to acquire knowledge + spillovers
- Brazilian Air Force (military) contracts Embraer (prototypes)
- 2004 Innovation Act already in force, but commissioning (art. 20) was not effective
- 28 units contracted in 2014

Case: Embraer's KC 390

Legal by-pass

- Innovation legislation: by-passed (too burdensome)

- General Procurement Law: no need for call for bids in cases in which *national security* is at stake (article 24, IX), and when *competition is not feasible* (art. 25, *caput*)

- By-pass was only possible because Embraer and FAB interacted for the last 40 years

- Could this have happened with other companies?

- Why the innovation regulatory structure was not used?

Persistent Bottlenecks

- Coordination bottlenecks
- Public-private synergies bottlenecks
- Learning and experimentation bottlenecks
- Selectivity bottlenecks

And also…

- Stagnant economy/harsh fiscal measures
- Severe recent cuts in science and technology budgets
- Lack of long term industrial/innovation policies
- Formalistic and punitive control by the courts of accounts (TCU)

Conclusions (preliminary)

• Innovation law and regulatory framework is new but is embedded in "old law" that hinders the type of risk taking that innovation entails

• This triggers and spreads risk perception and cristalizes severe bottlenecks

• Contracting innovation demands new governance structures and interpretations able to connect "new innovation law" with "old administrative law"

• And this demands, moreover, mentality change, with direct effects in (and from) legal education and practice

• No need to reinvent the wheel, though…