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***AN INSTITUTIONAL APPROACH TO
INFRASTRUCTURE REGULATION***

Theory and Policy

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INTRODUCTION : A TALE OF TWO CITIES

REFORM IMPLEMENTED AT ABOUT THE SAME TIME

CITY A ←————→ CITY B

COVERAGE

<i>PRE-REFORM</i>	<i>72</i>	<i>38</i>
<i>7 years after</i>	<i>82</i>	<i>47</i>

GROWTH IN NEW CONNECTIONS

<i>PRE-REFORM</i>	<i>4</i>	<i>0</i>
<i>7 years after</i>	<i>6.7</i>	<i>8.5</i>

UFW

<i>PRE-REFORM</i>	<i>13</i>	<i>60</i>
<i>7 years after</i>	<i>16</i>	<i>50</i>

PRICE per cubic meter

<i>PRE-REFORM</i>	<i>0.81 USD</i>	<i>0.13</i>
<i>7 years after</i>	<i>0.51</i>	<i>0.74</i>

INTRODUCTION : A TALE OF TWO CITIES



WHY?

→ Flaws in contractual design?

Contract of B = imitation of A

→ Inadequate incentives?

Clauses in B inspired from A

→ Inefficient operator?

Same operator and B largely staffed by former managers from A!

→ Path dependence? It does not explain it all, but ...



INTRODUCTION : A TALE OF TWO CITIES

WHY?

Combination of

A) Organizational issue

→ Political instability, risk averse operator did not want to assume major investments

→ Hence unbundling and problems of shared responsibilities

B) Institutional factors: 'embedded' regulator

→ ENFORCEMENT AS A KEY ISSUE



INTRODUCTION :

SUMMARY OF MY PRESENTATION

- 1) INSTITUTIONS MATTER***
- 2) REGULATION AS TRANSMISSION CHANNEL
BETWEEN INSTITUTIONS AND GOVERNANCE***
- 3) THE KEY ROLE OF 'MICRO-INSTITUTIONS' AS
REGULATORY COMPONENTS***



INTRODUCTION :

KEY MESSAGE:

THE DEVIL IS IN THE DETAILS!



I: INSTITUTIONS MATTER

I.1: NOT A SCOOP!

***** A crowded domain***

***A growing literature, from North to Levy-Spiller,
La Porta-Lopez-Shleifer-Vishny, Guash,
Acemoglu etc.***

**** A pervasive idea***

***Comforted at the level of international institutions
(World Bank Annual Report from 2001 and
series on DOING BUSINESS)***



I: INSTITUTIONS MATTER

I.2: BUT WHAT'S BEHIND THE DOOR?

Preliminary: Coase 1991; 1998

What is economics about?

- Flow (and innovation) of goods and services***
- depends on productivity which ...***
- depends on specialization (D of L) which ...***
- depends on exchange which ...***
- depends on costs of exchange which...***
- depends on institutions***



I: INSTITUTIONS MATTER

I.3: THE L L S V - WORLD BANK MODEL ***(the so-called « New Comparative Economics »)***

→ **Key elements of the model:**

$\Delta \text{ GDP} = f$ (financial capabilities)

$F C = g$ (legal system)

with legal system = set of laws and accompanying regulations (Civil Code vs Common Law ...)

[from which indicators (e.g., delays for hiring and firing) are derived to analyze « the ease of doing business »]

→ **Regulation = rules almost entirely identified to the legal side**

→ **That essentially represent costs**

→ **That hamper the ease of doing business**

→ **See their methodology (respondents are massively lawyers)**



I: INSTITUTIONS MATTER

I.4: THE DISTINCTIVE NEW INSTITUTIONAL APPROACH

→ **Key elements of the model:**

$$\Delta \text{GDP} = f(\text{Transaction costs})$$

$$\text{TC} = g(A, I)$$

with **A** = the attributes of transactions

and **I** = the institutional components (laws, polity, property rights, administrative capabilities)

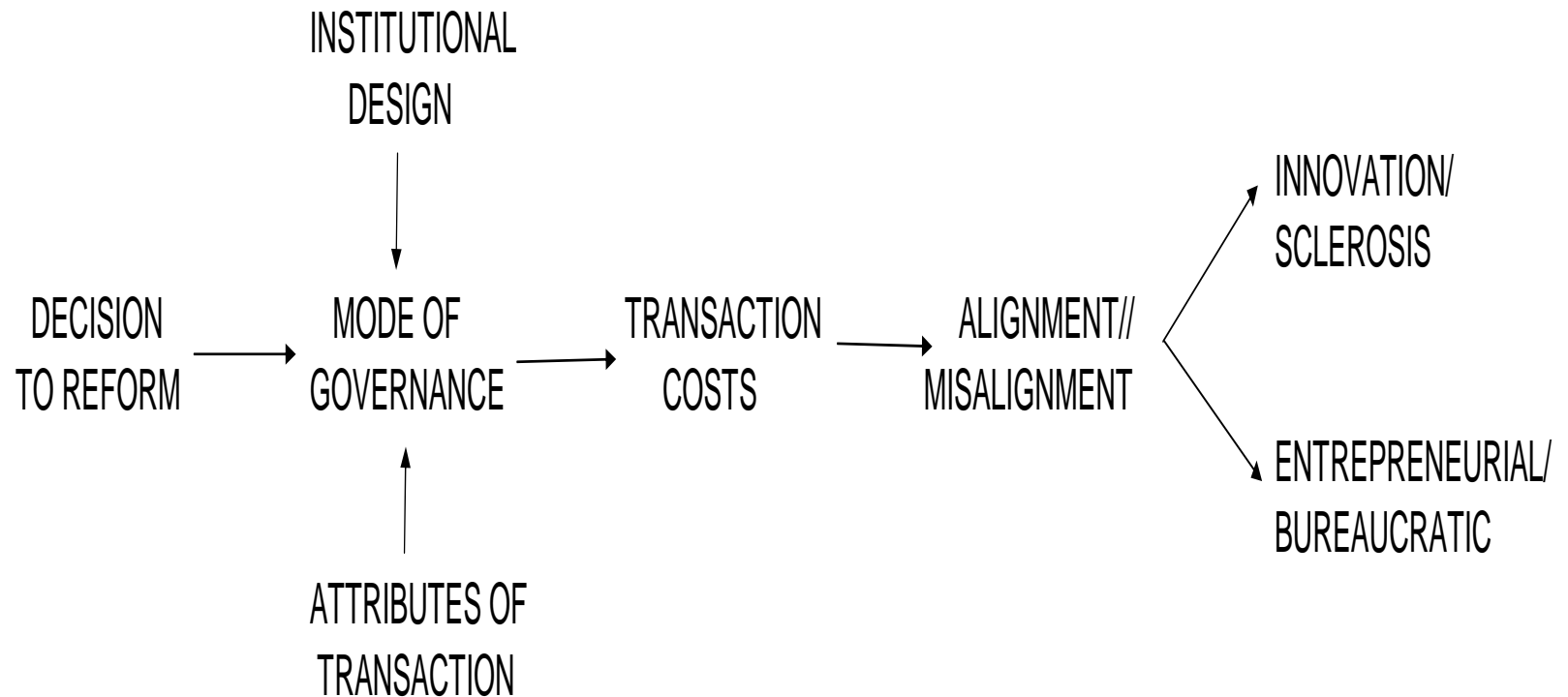
→ **Regulation is a transmission channel**

→ That **can support as well as hamper transactions**

→ In that it can introduce order and reduce uncertainty

I: INSTITUTIONS MATTER

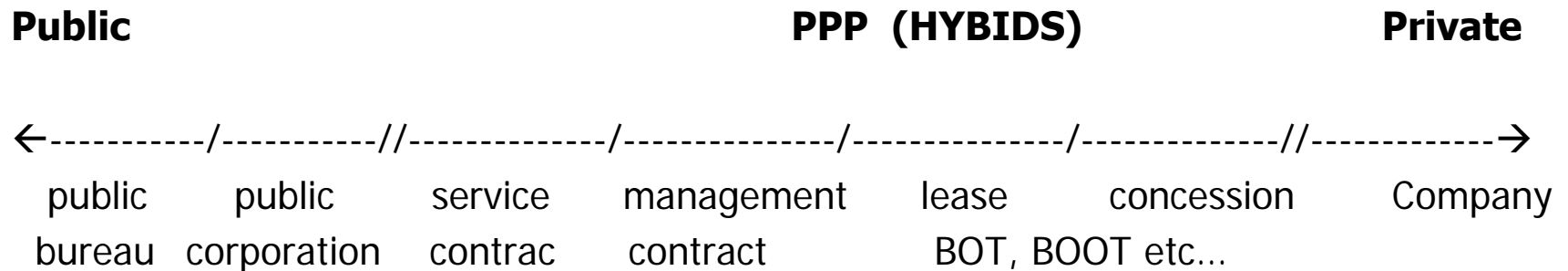
I.5: LINK WITH INFRASTRUCTURES



II. REGULATION AS A TRANSMISSION CHANNEL

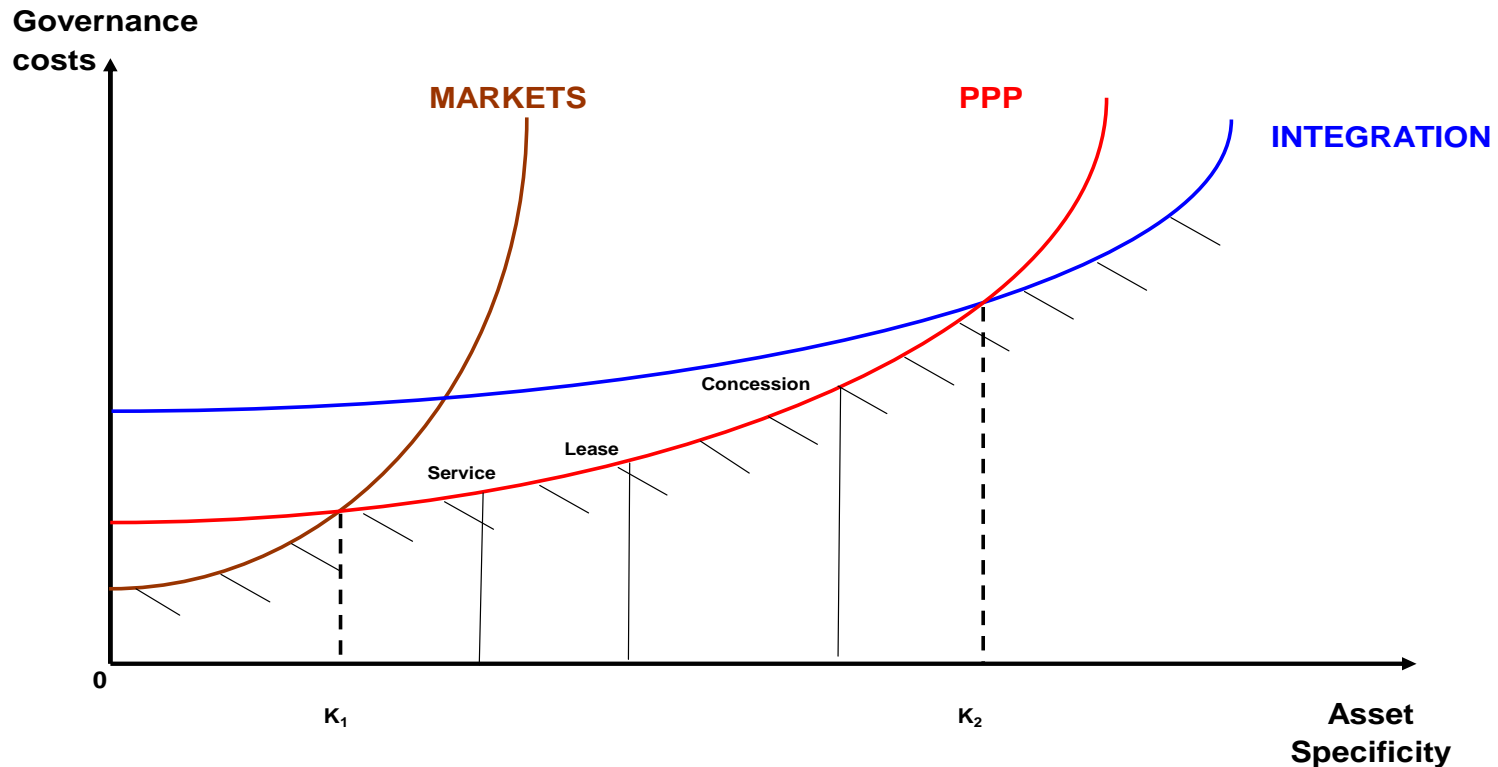
II. 1: DECISION TO REFORM INFRASTRUCTURES: WHAT MODE OF GOVERNANCE

The variety of possible arrangements



II. REGULATION AS A TRANSMISSION CHANNEL

II. 1: MODE OF GOVERNANCE (continued)



II. REGULATION AS A TRANSMISSION CHANNEL

II. 1: MODE OF GOVERNANCE (continued 2) It often does not work!

Guasch *Granting and Renegotiating Infrastructure Concessions*, Washington, WB

- **942** infrastructure concessions in LA
 - ** 29 % telecoms, 27 % Energy, 29 % transportation, 14.5 % water and sanitation
 - ** Mostly through competitive bidding (78 %)
- **41.5 %** of concessions (beside privatization of telecoms) **renegotiated** (55% in transportation, 74 % in water and sanitation)
 - * Duration of contracts: [15, 30 years]
 - * Average delay for renegotiation **2.2 years** after concession awards
 - * Renegotiations mostly on price & investment obligations

II. REGULATION AS A TRANSMISSION CHANNEL



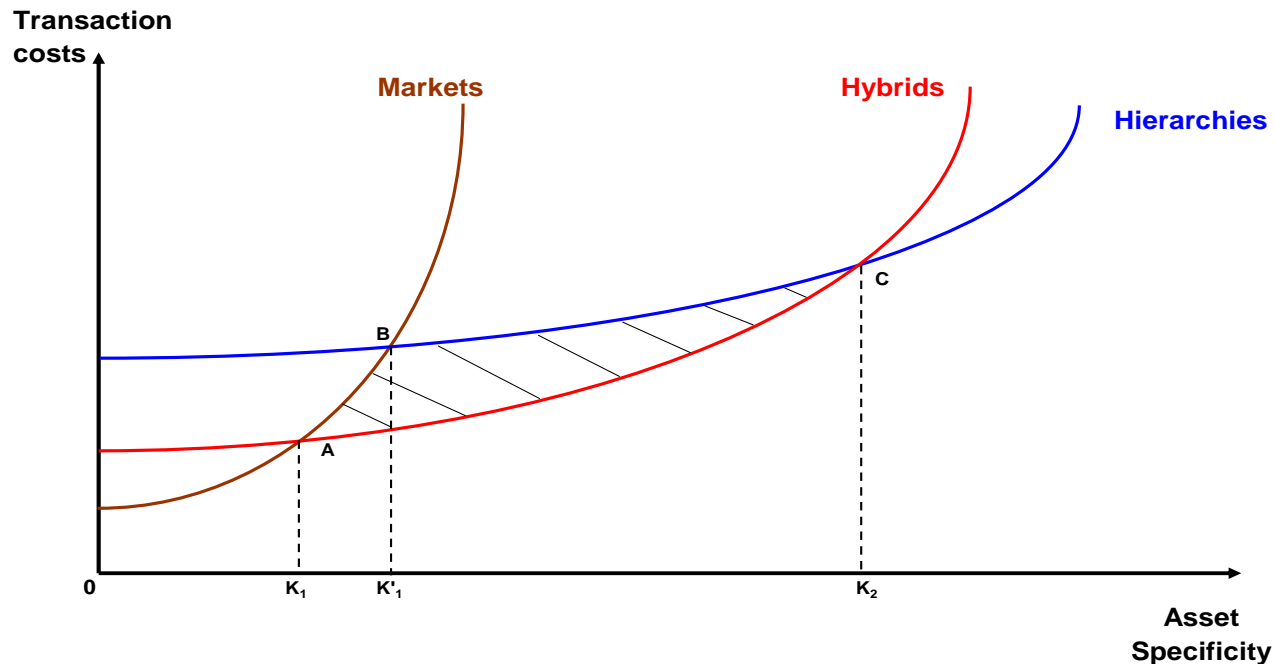
II. 1: MODE OF GOVERNANCE (continued)

WHY?

II. REGULATION AS A TRANSMISSION CHANNEL

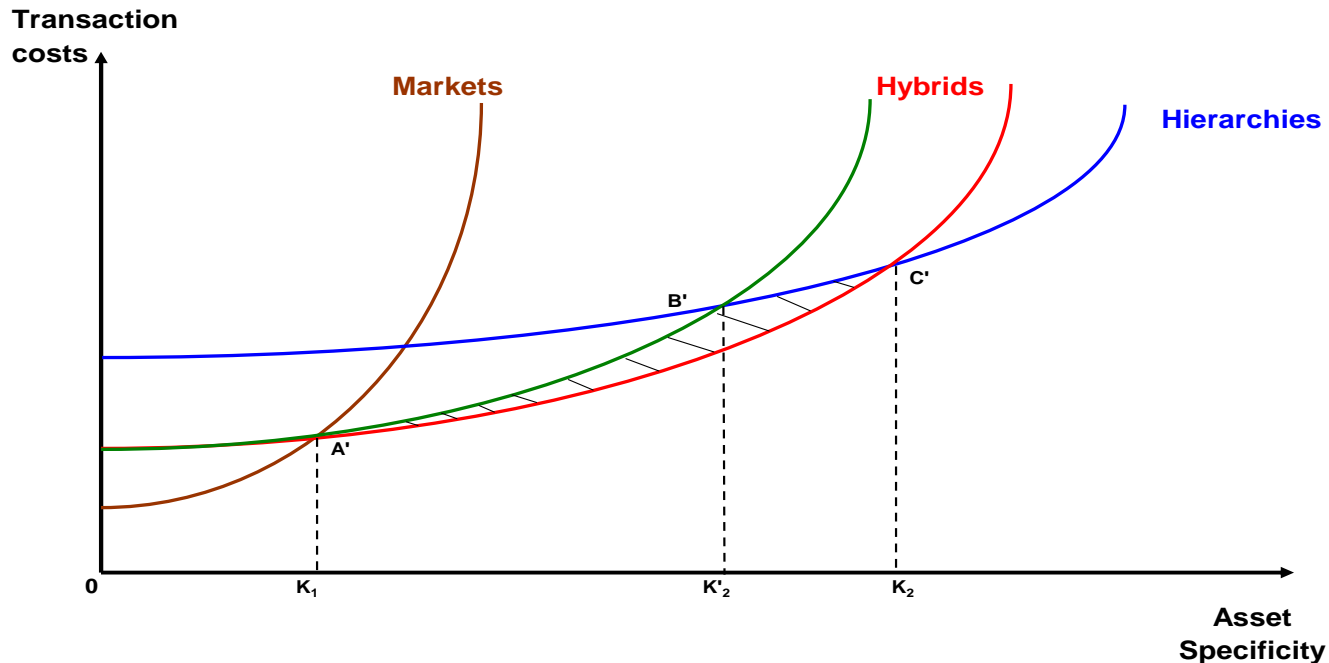
II. 2: THE IMPACT OF INSTITUTIONS ON THE GOVERNANCE OF INFRASTRUCTURES : what theory suggests

A: In case of « prohibition » (Test: Yvrande-Menard, 2005)



II. REGULATION AS A TRANSMISSION CHANNEL

II. 2: THE IMPACT OF INSTITUTIONS ON THE GOVERNANCE OF INFRASTRUCTURES : what theory suggests (continued) B: In case of « interference » (Test: Oxley, 1999)



II. REGULATION AS A TRANSMISSION CHANNEL

II. 3: THE IMPACT OF INSTITUTIONS ON THE GOVERNANCE OF INFRASTRUCTURES : FACTS ARE CONSISTENT WITH THEORY

- **1st cause: MISALIGNMENT BETWEEN REGULATION AND MODE OF GOVERNANCE**
- **2nd cause: FLAWS IN CONCESSION DESIGN**
- **3rd cause: POLITICAL INTERFERENCES**

Shirley et al. 2002; Guasch, 2004, Spiller & Savendoff, 1999

III. THE KEY ROLE OF MICRO- INSTITUTIONS



ONE SIZE DOES NOT FIT ALL!!

III. THE KEY ROLE OF MICRO- INSTITUTIONS

III.1: WHAT ARE WE TALKING ABOUT?

- **GOING AWAY** from 'THE' BIG PICTURE

- **IMPLEMENTATION AND ENFORCEMENT MOSTLY AT LOCAL OR REGIONAL LEVEL**

- **RELEVANT LEVEL OF ANALYSIS DEPENDS ON:**
 - (a) Level of « institutional environment »
 - (b) Nature of Political system
 - (c) Type of infrastructure

III. THE KEY ROLE OF MICRO- INSTITUTIONS



III.2: IMPACT OF POLITICAL STRUCTURE

- a) Theory: Weingast, MacCubbins etc.: differentiated impact of different political regimes**

- b) Consequences:**
 - On choice of mode of organization**
 - On performance**

- c) Empirical test: next slide**

III. THE KEY ROLE OF MICRO- INSTITUTIONS



III.2: IMPACT OF POLITICAL STRUCTURE

c) Empirical test

H₁ : Centralized systems design more standardized contracts and deal with more concentrated operators

Corollary: Corruption of higher amplitude (although not necessarily more frequent).

H₂ : Federal systems select more diversified modes of governance and less concentrated operators.

Corollary: Corruption of smaller amplitude (more diffused, e.g. 'patronage')

III. THE KEY ROLE OF MICRO- INSTITUTIONS

III.3: ADMINISTRATIVE CAPABILITIES AT STAKE

- a) **Theory: if micro-institutions are key players, than 'civil servant' asset is a major issue**

- b) **Consequence:**
 - Need to shift analysis from physical investments to human assets
 - Need to Pool capabilities (ex. Basin; Regional Agencies)

- c) **Empirical test:**
 - H₃ : The more specific a micro-institution is, the densier is the required pool of qualified human assets**

III. THE KEY ROLE OF MICRO- INSTITUTIONS

III.4: Key role of conflict resolution devices

- a) Theory: Against overemphasis on role of Courts (independent judiciary etc.) towards more decentralized devices (Schwartz, Spiller & Tommasi –forthcoming)**

- b) Consequences**
 - **'Judicialization'** is very costly AND disruptive
 - **Formal arbitrators** tend to introduce asymmetries in renegotiations, particularly when market is concentrated AND Public authorities are decentralized
 - Key Role of **"mediators"** (semi-formal arrangements) (but risk of capture and/or corruption).

- c) Empirical test:**
 - **Respective frequency of each type of conflict resolution**
 - **Respective costs**

III. THE KEY ROLE OF MICRO- INSTITUTIONS

III.4: REVISITING POLITICS

- a) **Theory (Ferejohn, Weingast et al.): Political dimension must be reassessed in a less negative perspective than usually done**

- b) **Consequences:**
 - Role of politics unavoidable in the monitoring of many infrastructures
 - Voters and users systematically overlap
 - Essential needs => critical transactions
 - 'Independent' regulator as a myth and as ... a pest!

- c) **Empirical test:** see next slide

III. THE KEY ROLE OF MICRO- INSTITUTIONS

III.4: REVISITING POLITICS (continued)

c) Empirical test:

H₄ : Critical infrastructures depend on critical transactions that require political framing.

TEST: need to define criticality and assess political impact at local/regional level

HELP NEEDED!!

CONCLUSION



A FEW QUESTIONS THAT SHOULD BE HIGH ON OUR RESEARCH AGENDA

- **Identifying critical infrastructures, for which regulation is essential**
- **Identifying key micro-institutions**
- **Identifying consequences (needs) in terms of human assets**
- **More analyses of interactions between institutions and modes of organization**
- **Final comment: 'identify' => *Theory + Tests***



CONCLUSION

THANK YOU FOR YOUR ATTENTION



SOME REFERENCES

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