

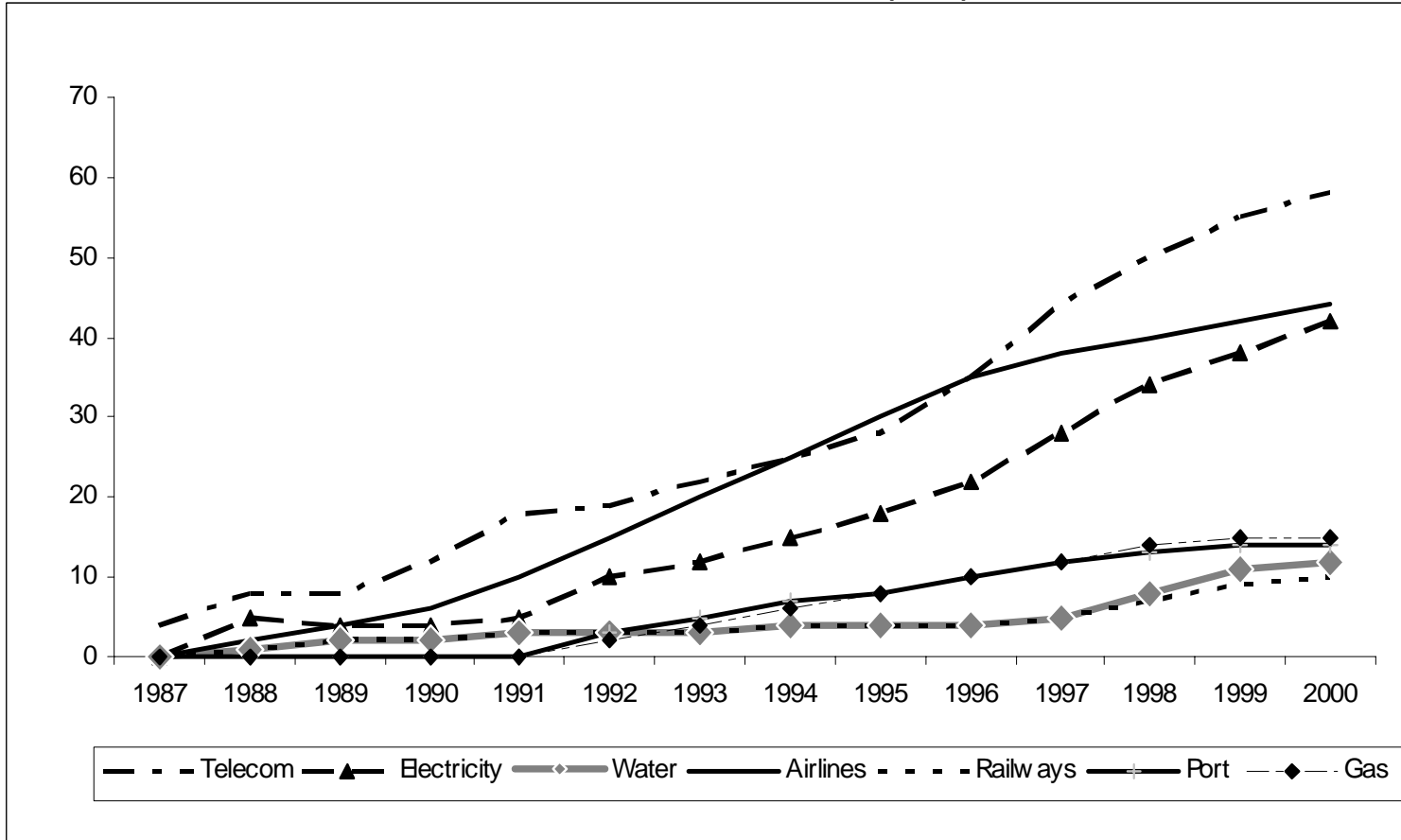


Regulatory Governance in Brazil

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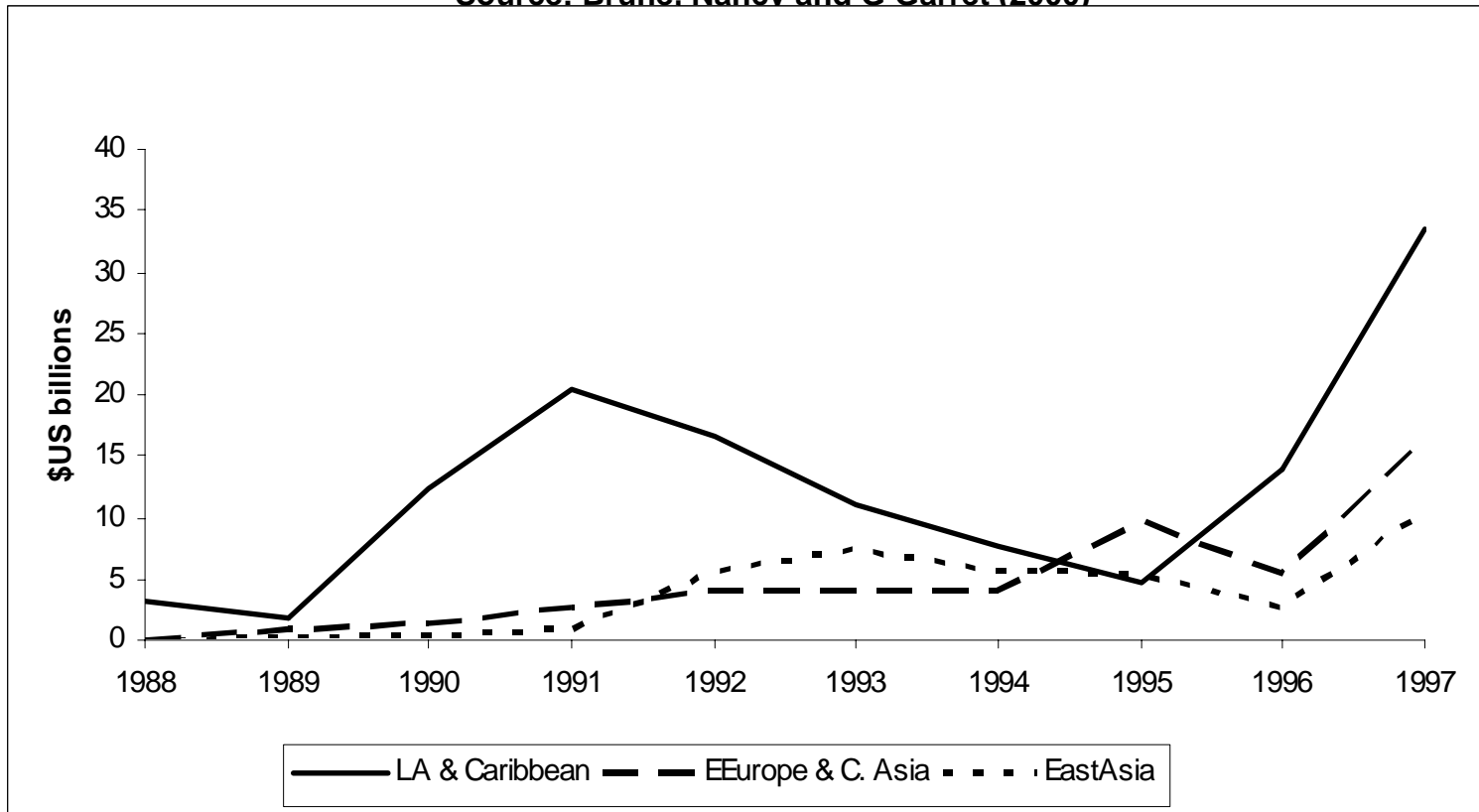
Sector Variation in Privatization Events Worldwide

Source: Levi-Faur (2002)

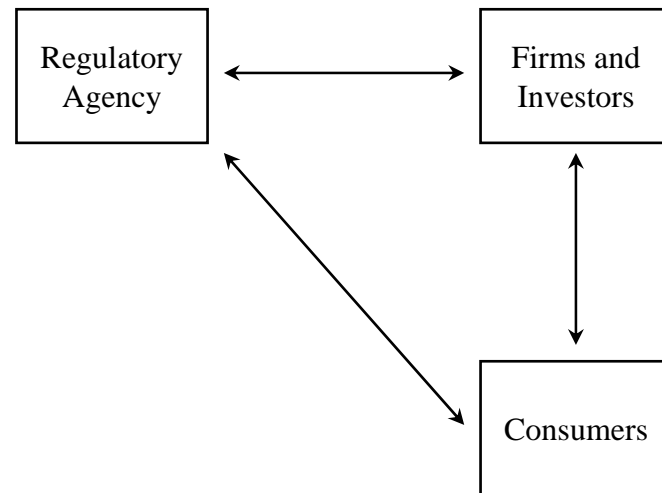


Privatization by Regions

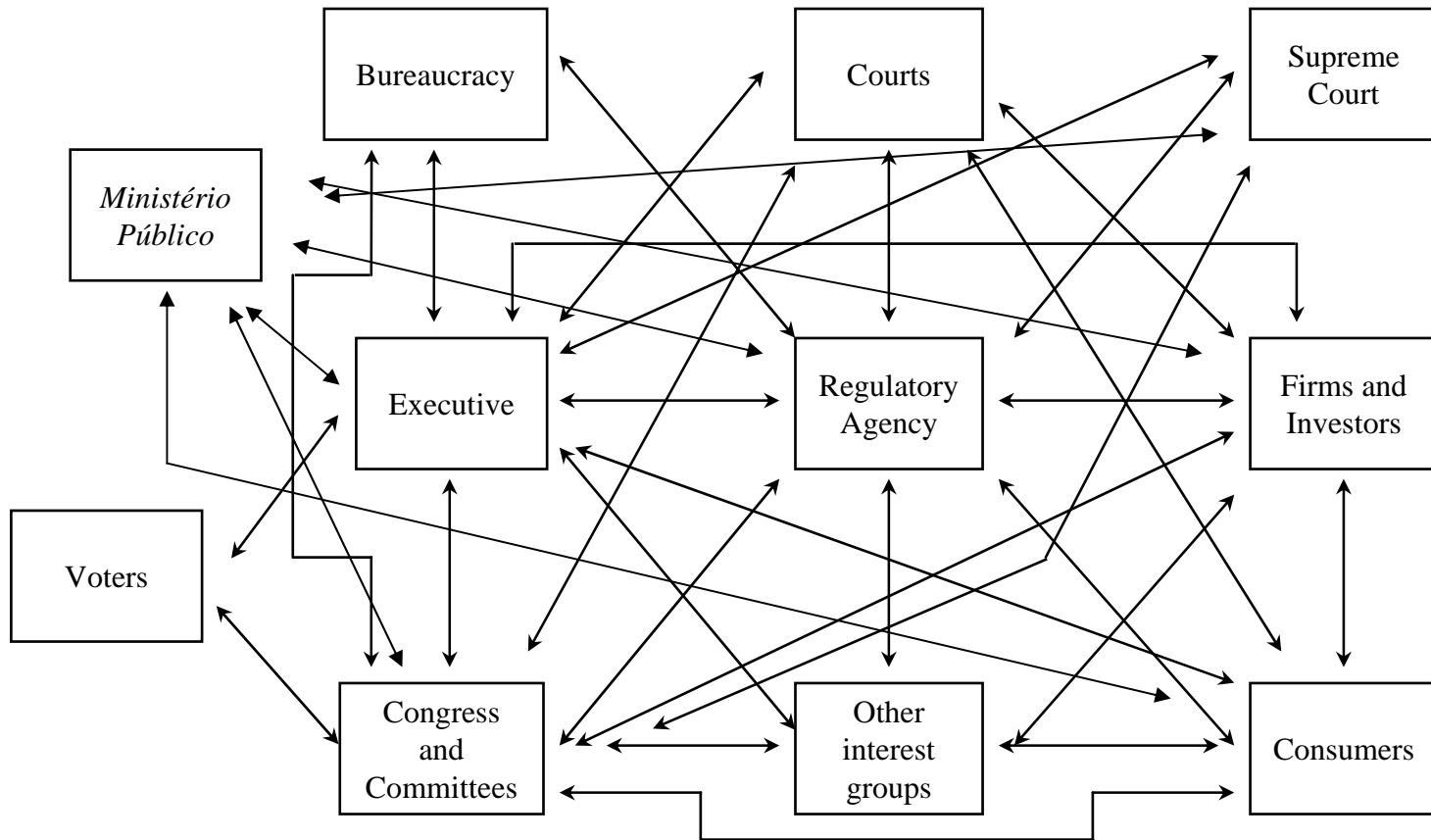
Source: Brune, Nancy and G Garret (2000)



The Regulatory Process



The Regulatory Process



Determinants of Institutions

History, geography, religion,
natural resources



Institutional Endowment

Form of government (i.e. democratic vs. authoritarian),
executive-leg. relations, independence of the judiciary,
bureaucratic capability, electoral rules, rule of law, etc.

← Exogenous



Governance Mechanism

Agency design, autonomy, transparency,
decision-making process, participation,
control & accountability

← Choice variables



Regulatory Incentives

Tariff design (price-cap vs. rate of return),
quality standards, universalization, auctions,
interconnection, etc.


← Choice variables



Economic Performance

Capital accumulation and growth.





How can
Governance be
measured?

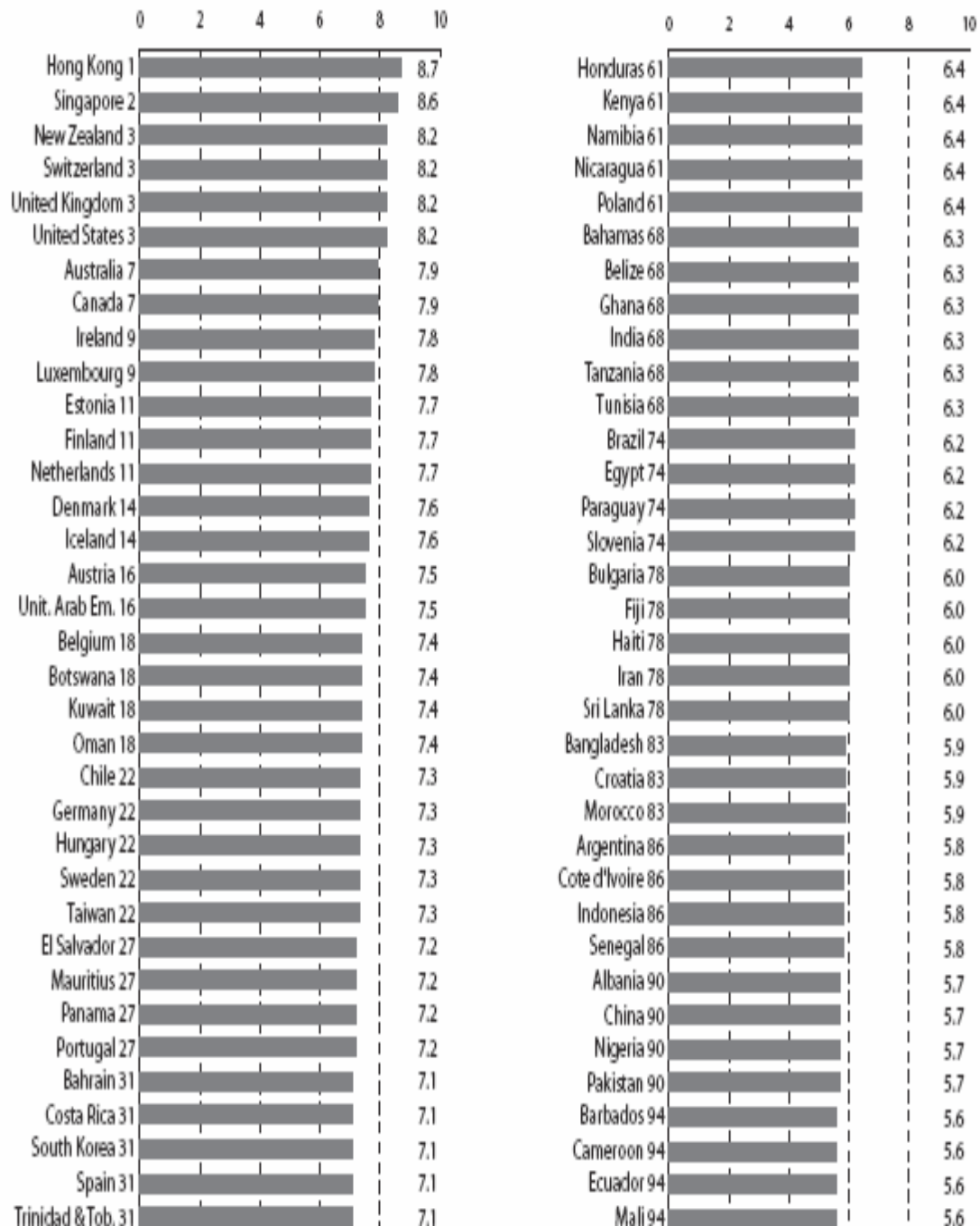
Why create indices?

- Many variables of interest to economists are easily measured: profit, employment, votes, etc.
- Others are not so easily quantifiable: liberty, trust, rule of law, governance.
- Attempts to explain economic phenomena using only the first set of variable has had limited success.

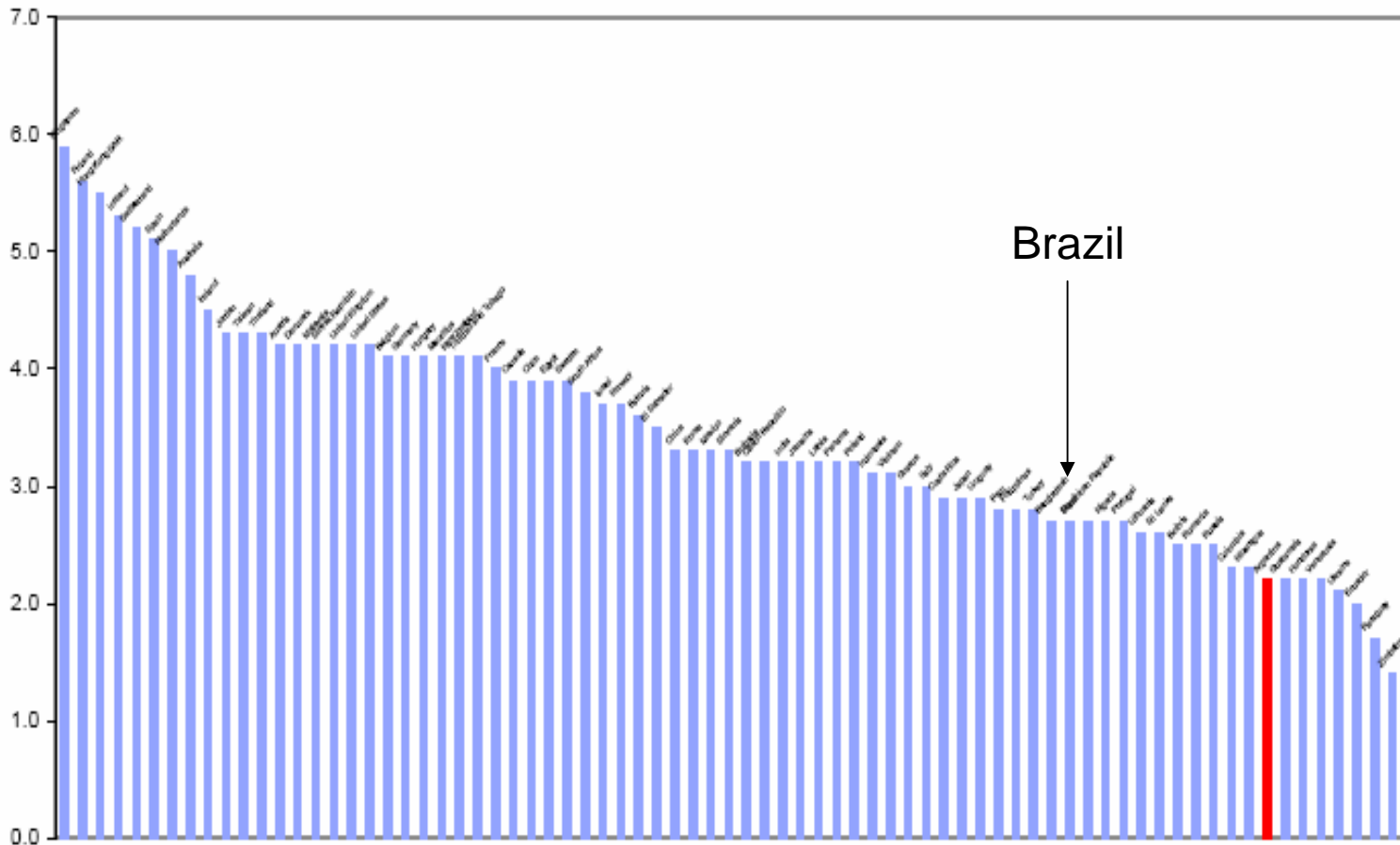
Indices for all needs and tastes

- Bribe payers index
- Civil liberties index
- Consensus democracy index
- Employment laws index
- Legal formalism index
- Opacity index
- Road index
- Ecosystem wellbeing index
- Inlands water diversity
- Species and Genes index
- Ethnolinguistic Fractionalization index
- Mother's Index
- Gender empowerment measure
- Happiness with life index
- Ecological footprint
- Press freedom index
- Voice and accountability index
- Networked readiness index

Exhibit 1.2: Summary Economic Freedom Ratings, 2002



Usefulness of government spending



The composition of government spending in your country (1=is wasteful, 7=provides necessary goods and services not provided by the market)



**Argenti
na**



**Botswa
na**



Brazil



Chile



China



India



**Swede
n**



**United
States**



Index

Regulatory Quality Index

-.84

.81

.26

1.50

-.41

-.34

1.70

1.51

Rule of Law Index-
Kaufmann et al.

-.73

.72

-.30

1.30

-.22

.07

1.92

1.70

How are these indices built?

Rule of Law Index

- Rule of Law Index-Kaufmann et al. - This index is one of six indices developed to measure governance. The authors draw 194 different measures from 17 different sources of subjective governance data constructed by 15 different organizations. These sources include international organizations, political and business risk rating agencies, think tanks, and non-governmental organizations. The Rule of Law Index combines several indicators that measure the extent to which agents have confidence in and abide by the rules of society. These include perceptions of the incidence of both violent and non-violent crime, the effectiveness and predictability of the judiciary, and the enforceability of contracts. Together, these indicators measure the success of a society in developing an environment in which fair and predictable rules form the basis for economic and social interactions. The component indicators are aggregated using an unobserved components model that expresses the observed data in each cluster as a linear function of the unobserved common component of governance, plus a disturbance term capturing perception errors and/or sampling variation in each indicator. The choice of units for governance ensures that the estimates of governance have a mean of zero, a standard deviation of one, and range from around -2.5 to around 2.5. A higher or positive value indicate greater rule of law. Year: 2002 Country Coverage: 193
- Rule of Law Index-Kaufmann et al. **Kaufmann, D., A. Kraay, and M. Mastruzzi.** 2003. Governance Matters III: Governance Indicators for 1996–2002. World Bank, World Bank Policy Research Working Paper 3106. Available at: <http://www.worldbank.org/wbi/governance/pubs/govmatters2001.htm>.

Regulatory Quality Index

- Regulatory Quality Index - This index is one of six indices developed to measure governance. The authors draw 194 different measures from 17 different sources of subjective governance data constructed by 15 different organizations. These sources include international organizations, political and business risk rating agencies, think tanks, and non-governmental organizations. The Regulatory Quality Index includes measures of the incidence of market-unfriendly policies such as price controls or inadequate bank supervision, as well as perceptions of the burdens imposed by excessive regulation in areas such as foreign trade and business development. The component indicators are aggregated using an unobserved components model that expresses the observed data in each cluster as a linear function of the unobserved common component of governance, plus a disturbance term capturing perception errors and/or sampling variation in each indicator. The choice of units for governance ensures that the estimates of governance have a mean of zero, a standard deviation of one, and range from around -2.5 to around 2.5 . Higher or positive values indicate greater regulatory quality. Year: 2002 Country Coverage: 193
- Regulatory Quality Index **Kaufmann, D., A. Kraay, and M. Mastruzzi.** 2003. Governance Matters III: Governance Indicators for 1996–2002. World Bank, World Bank Policy Research Working Paper 3106. Available at: <http://www.worldbank.org/wbi/governance/pubs/govmatters2001.htm>.

Regulatory Governance Index

- Other Regulatory Governance Indices:
 - NERA/Asian Development Bank. (1998). *Governance and Regulatory Regimes for Private Sector Infrastructure Development*, ADB RETA5758-REG, Manila, Philippines.
 - Gutiérrez, L. (2003). “Regulatory Governance in the Latin American Telecommunications Sector”.

Sample

Num.	Agency Name	State	Sector
1	ANATEL	Federal	Telcom
2	ANA	Federal	Water
3	ANEEL	Federal	Electricity
4	ANTAQ	Federal	Water Transport
5	ANTT	Federal	Land Transport
6	ANP	Federal	Petroleum
7	AGR	GO	S,W,E,Tr
8	AGERGS	RG	Tr,R,E,other
9	ARTESP	SP	Transport
10	ASEP	RJ	G,S,T,R
11	CSPE	SP	G,E
12	AAGISA	PB	W,S,I
13	AGEEL	PB	E,G
14	AGEPAN	MS	E,G,Tr
15	AGERBA	BA	Tr,R,E,G
16	ARCE	CE	E,G,S,Tr
17	ARSAL	AL	E,G,Tr,S
18	ARSEP/RN	RN	E,G
19	ARPE	PE	W,E,G,Tr
20	ARSEP/AM	AM	Tr,S,E
21	AGER/MT	MT	Tr,E,G,S

Questionnaire

- 18 pages, 106 questions (used 83).
- Respondants were high ranking officials of the agencies (mostly directors).
- This information was transformed into an index between 0 and 1.

BLOCO II – AUTONOMIA DA AGÊNCIA

1) A legislação (Marco Regulatório) define claramente quais são as funções e responsabilidades do órgão regulador?

Não

Sim

1.2) Se não, indique qual o grau de ambigüidade que você atribui ao papel e objetivos da agência:

1. Muito Alto	2. Alto	3. Médio	4. Baixo	5. Muito Baixo

Four dimensions (sub-indices)

- Autonomy
- Decision-making process
- Access to resources
- Control and Accountability

Name	State	Autonomy	Decision-making process	Access to Resources	Control & Account.	RGI
ANATEL	Federal	0.594	0.803	0.838	0.746	0.745
ANA	Federal	0.675	0.622	0.761	0.406	0.616
ANEEL	Federal	0.705	0.882	0.547	0.659	0.698
ANTAQ	Federal	0.572	0.795	0.434	0.596	0.599
ANTT	Federal	0.676	0.555	0.640	0.544	0.604
ANP	Federal	0.624	0.637	0.776	0.665	0.675
AGR	GO	0.526	0.667	0.568	0.647	0.602
AGERGS	RG	0.640	0.717	0.417	0.604	0.595
ARTESP	SP	0.550	0.310	0.604	0.331	0.449
ASEP	RJ	0.627	0.758	0.532	0.611	0.632
CSPE	SP	0.574	0.433	0.594	0.598	0.550
AAGISA	PB	0.406	0.482	0.440	0.357	0.421
AGEEL	PB	0.668	0.481	0.380	0.440	0.492
AGEPAN	MS	0.650	0.554	0.596	0.588	0.597
AGERBA	BA	0.439	0.677	0.761	0.591	0.617
ARCE	CE	0.481	0.574	0.485	0.550	0.523
ARSAL	AL	0.560	0.658	0.424	0.497	0.535
ARSEP/RN	RN	0.407	0.262	0.481	0.357	0.377
ARPE	PE	0.599	0.447	0.640	0.617	0.576
ARSEP/AM	AM	0.353	0.821	0.477	0.620	0.568
AGER/MT	MT	0.379	0.660	0.593	0.566	0.550

	Marco Regulatório Claro	Legislação Especifica papal outros orgão	Interferência do ministéro ou governador	Casos de interferência na política ou funcionamento	Processo de seleção dos diretores.	Dispõe de quarentena?	Quarentena remunerada ?
Agency Name	I.1 (1.2)	I.2	I.4	I.5	I.22	I.25	I.26
ANATEL	1	1	0.75	0	0.5	1	1
ANA	1	1	0.75	1	0.5	1	1
ANEEL	1	1	0.75	0	0.5	1	1
ANTAQ	0.2	1	0.5	0	0.5	1	1
ANTT	1	1	0.75	1	0.5	1	1
ANP	1	1	0.5	0	0.5	1	1
AGR	1	1	0.5	0	0.5	1	1
AGERGS	0.4	0	1	0	1	0	0
ARTESP	1	1	0.5	1	0.5	1	0
ASEP	1	0	1	0	1	1	0
CSPE	1	0	1	1	0.5	1	0
AAGISA	1	1	0	1	0.5	0	0
AGEEL	1	1	1	1	0.5	1	1
AGEPAN	1	0	0.75	0	0.5	1	1
AGERBA	1	1	0	0	0.5	0	0
ARCE	0.4	1	1	1	0.5	0	0
ARSAL	0.8	0	1	0	0.5	1	1
ARSEP/RN	1	0	1	0	0.5	0	0
ARPE	1	1	0.5	1	1	1	1
ARSEP/AM	1	0	0.75	0	0.5	0	0
AGER/MT	0.4	0	0.5	0	0.5	1	0

18) É proibida aos diretores a ocupação de:

- 1 cargo eleito anterior ao mandato na agência
0,5 cargo eleito durante o mandato na agência
0 não há proibição

[Se há proibição para antes e durante marque 1]

19) É necessária experiência relevante anterior para ser nomeado diretor?

- 0 Não 0,5 Sim (sem especificar período) 1 Sim (mais de 5 anos)

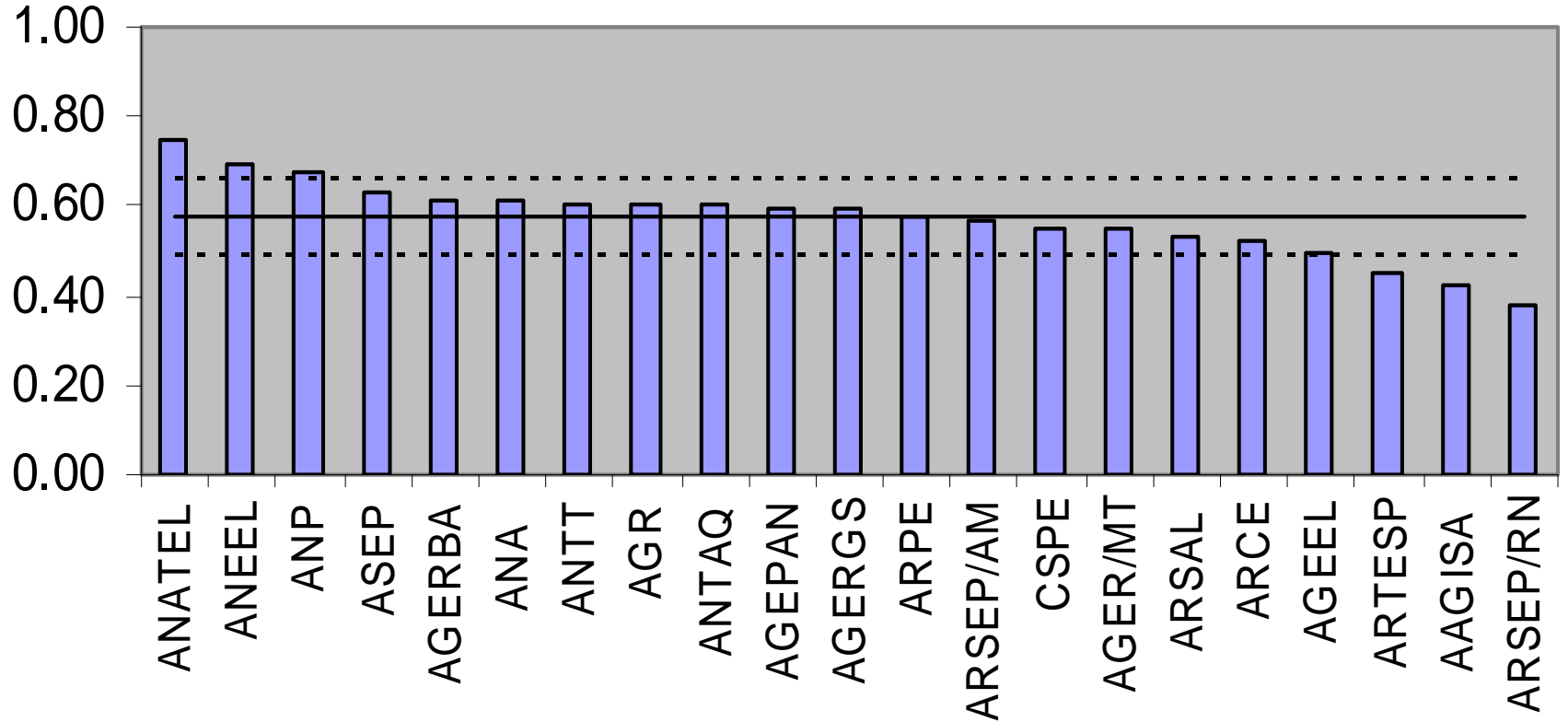
20) Diretores podem ser exonerados:

- 0 ad nutum
0,5 . sob justificativa vaga de “ameaçar a integridade e independência da agência.”
1 em caso de crimes específicos conforme estipulado em lei.

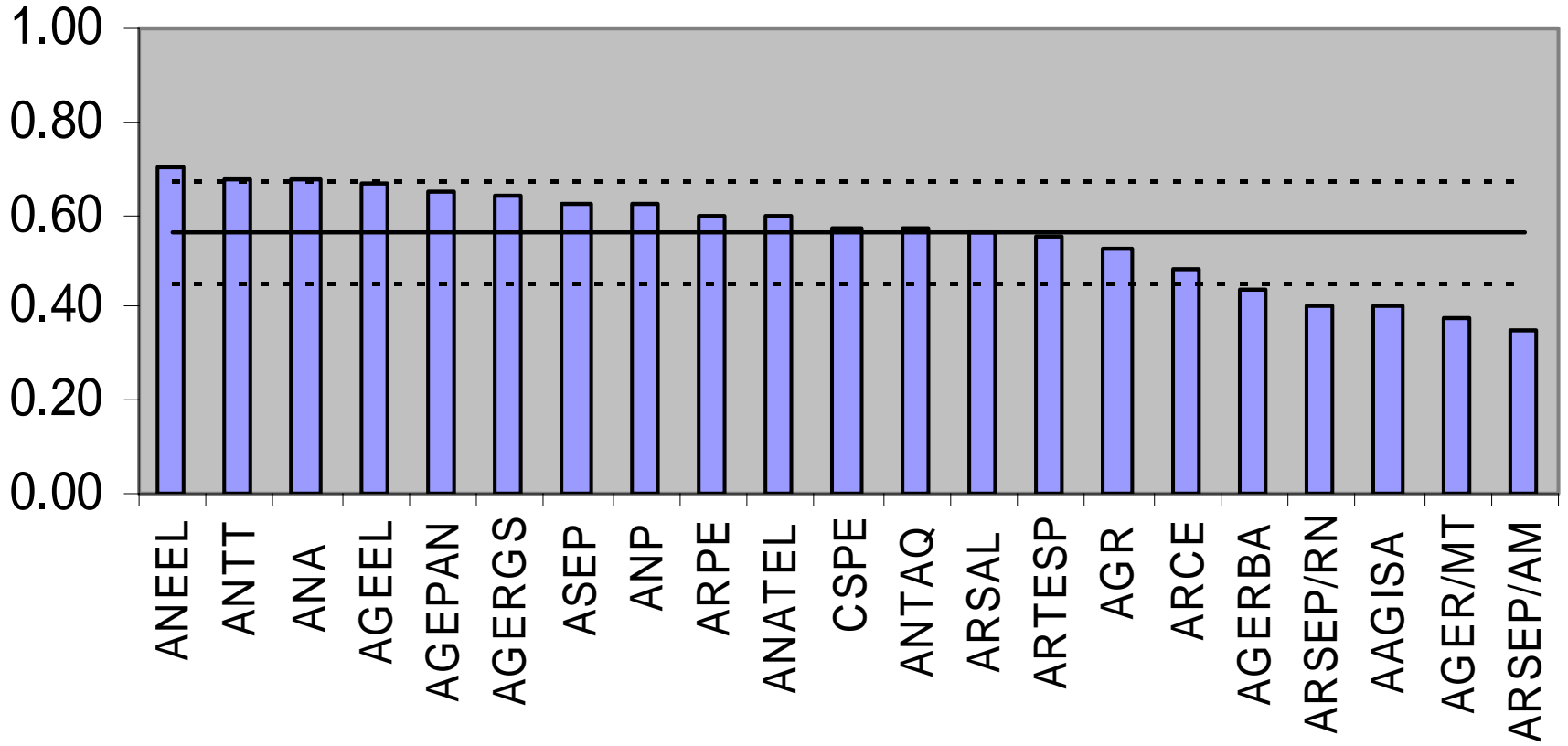
Caveats

- Limitations:
 - Subjectivity of the criteria to quantify responses.
 - Measurement errors.
 - Strategic responses.
- Care need to interpret index:
 - Do not take governance for performance.
 - Inter-agency comparisons are valid.
 - Comparisons among sub-indices must be done with care.

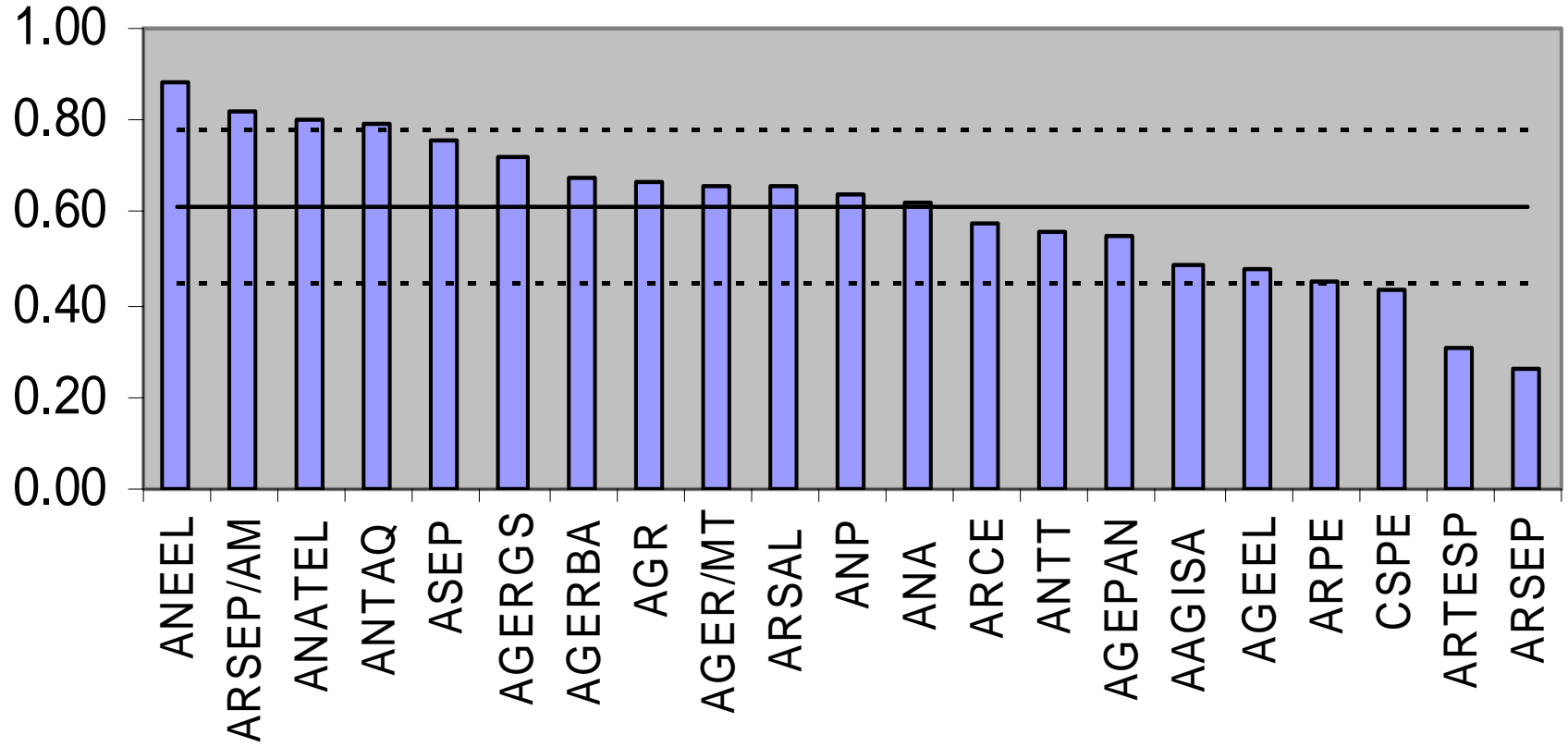
Índice de Governância Regulatória



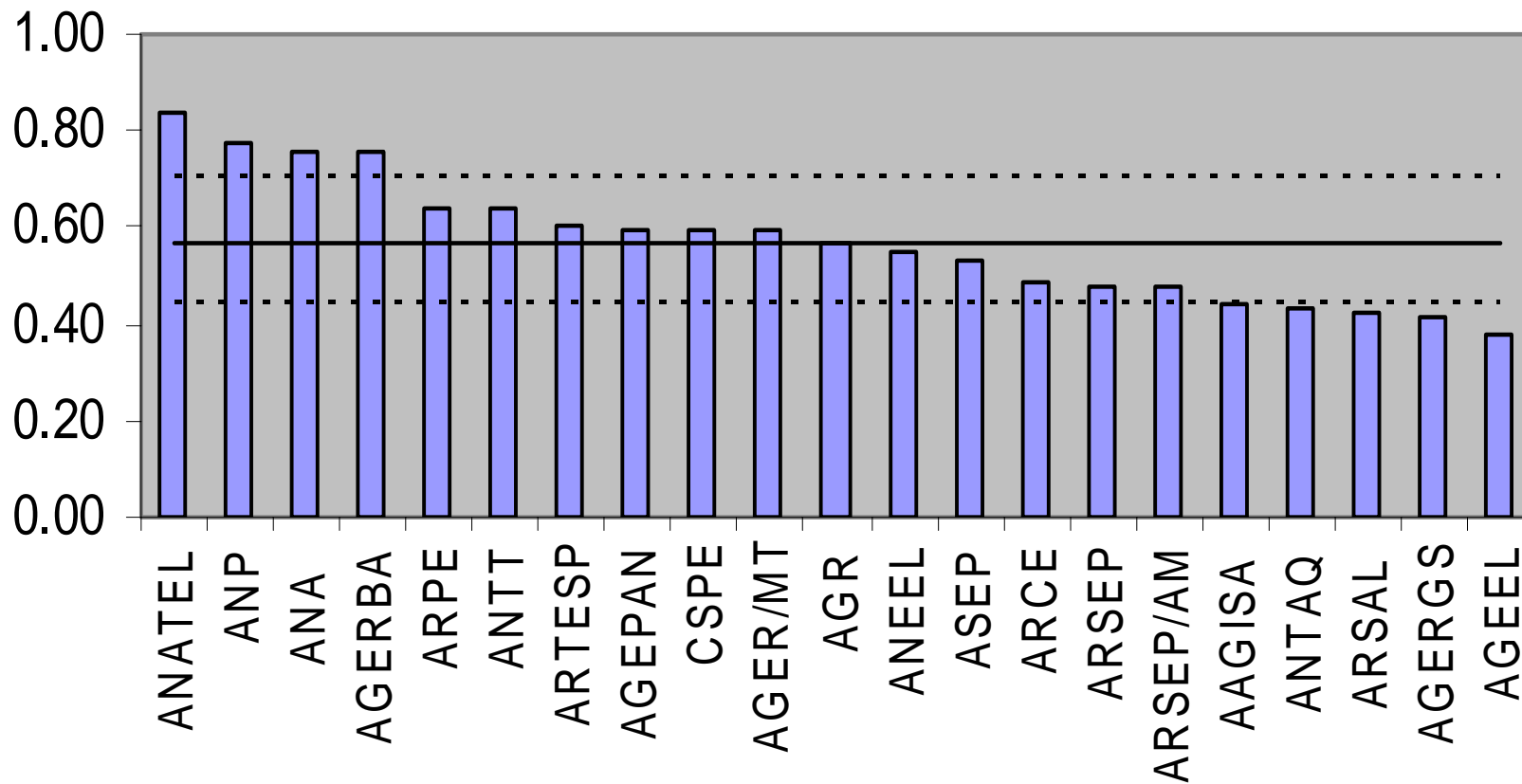
Autonomia



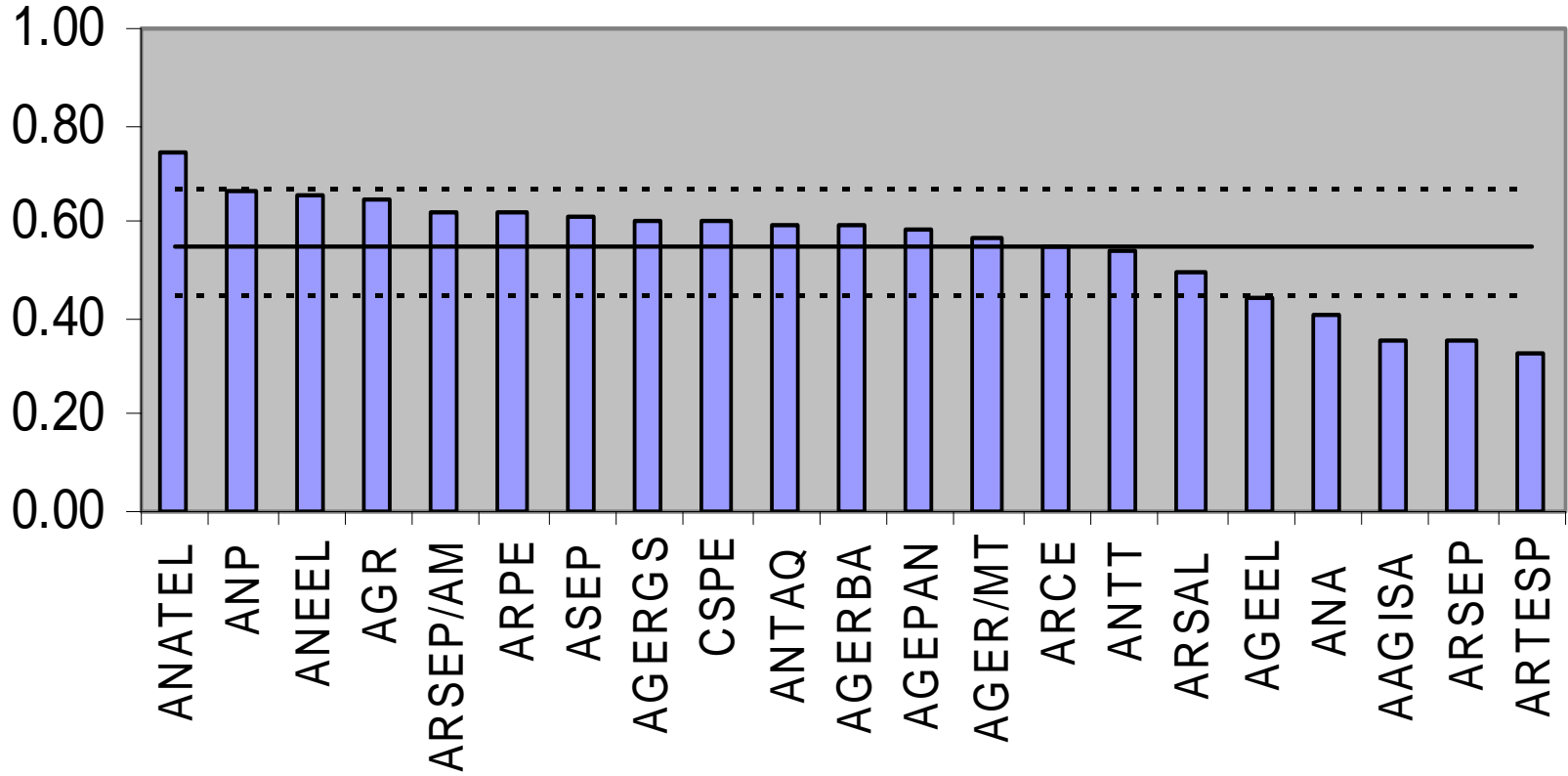
Processo Decisório



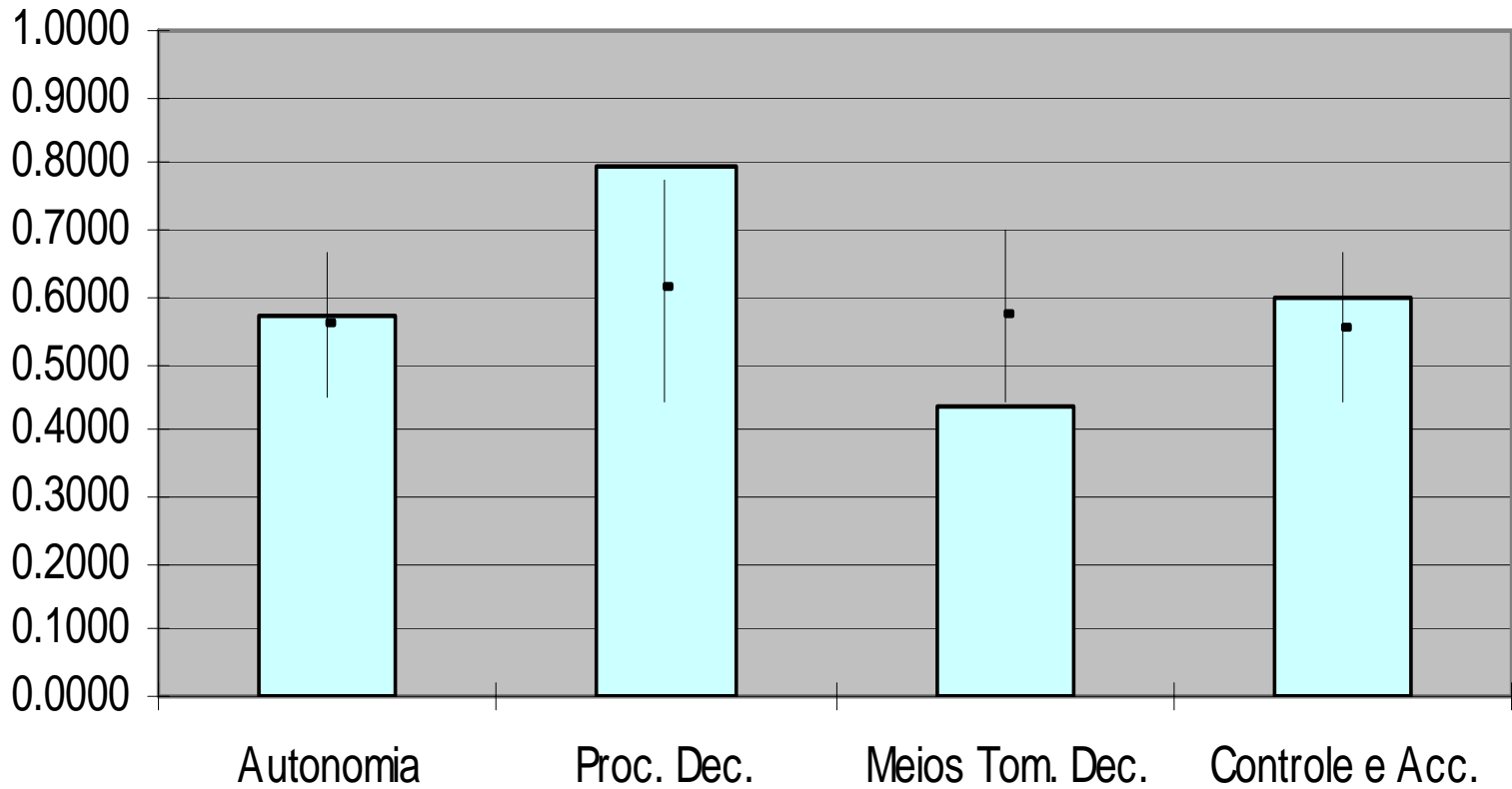
Meios para Tomada de Decisão



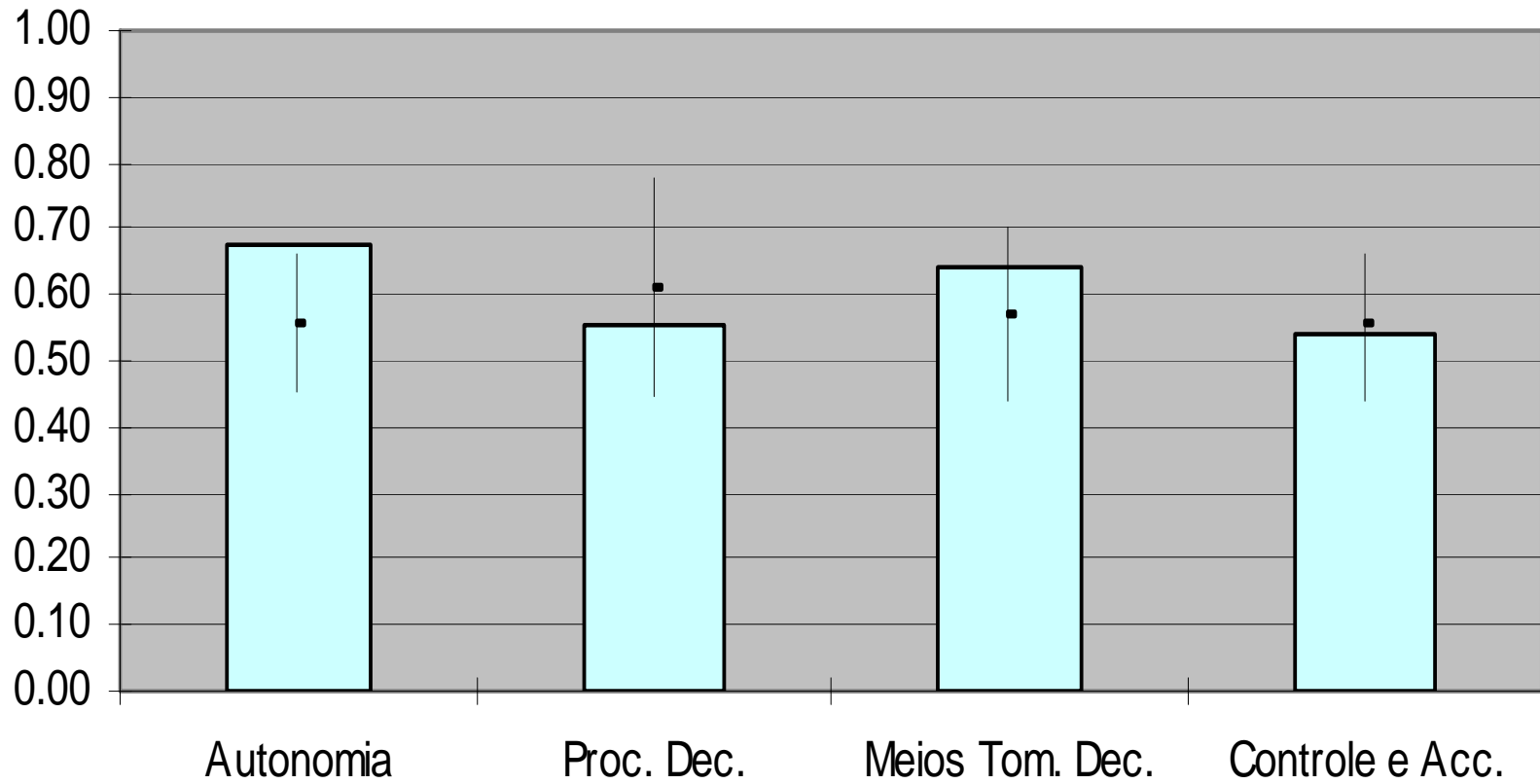
Controle e Accountability

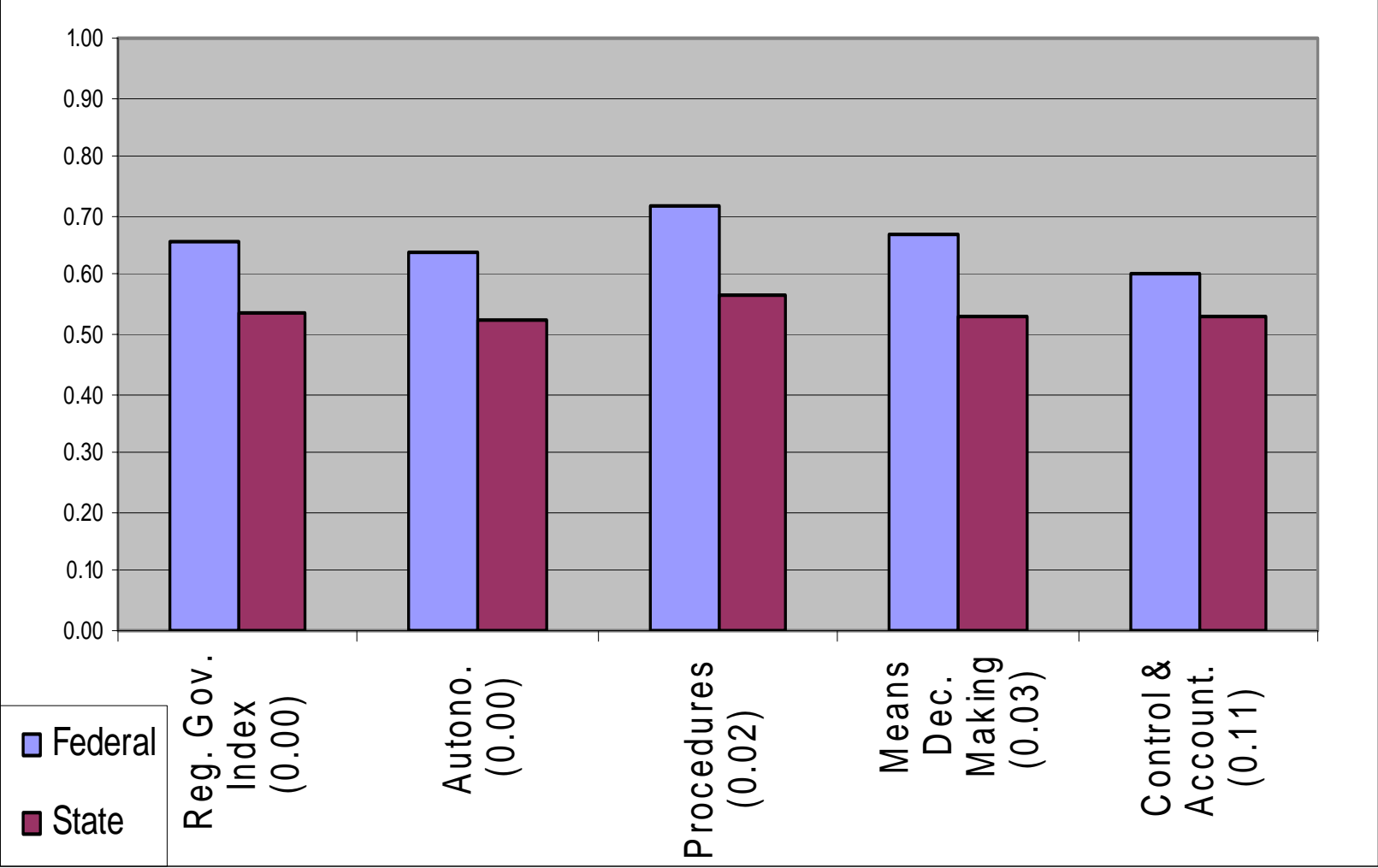


ANTAQ



ANTT





Determinants of the Regulatory Governance Index

Dep. Var.: RGI	Coefficients
Federal	0.158*** (9.67)
North / Northeast	-0.355 (-1.65)
Telecom	0.118*** (4.72)
Water	0.931 (0.49)
Electricity	0.842*** (3.77)
Gas	0.526 (.29)
Transport	0.496** (2.25)
Age	0.714 (1.49)
Constant	0.386*** (9.73)
R ²	0.79
N	21

OLS. t-ratio in parenthesis

Determinants of Legal Suits against the Agency

Dep. Var.: No. of legal Suits	Coefficient
Federal	.456* (2.06)
North	-.705** (-2.62)
South	-1.045*** (-3.43)
Telecom	.079 (0.29)
Water	-.219 (-1.30)
Electricity	.018 (0.10)
Gas	-.341 (-1.69)
Transport	.594*** (6.01)
Age	.010** (2.74)
Public hearings	-.399** (-2.42)
Constant	-.197 (-0.81)
R-squared	0.7988
N	21

OLS. t-ratio in parenthesis

International Comparisons

- Applying the index created by the Asian Development Bank / NERA to Brazilian regulatory agencies.
- The Gutierrez (2003) index to Brazilian regulatory agencies.

ADB/NERA index

- Seven countries
- Six dimensions (Clarity, autonomy, participation, accountability, transparency, predictability)
- Data from country specialists.
- Scores from 1 (low) to 5 (high).

	Clarity	Autonomy	Participation	Accountability	Transparency	Predictability	ADB / NERA Index of regulatory governance
<i>Bangladesh</i>							
Eletricidade	2	2	1	2	1	1	9
<i>India</i>							
Eletricidade, Federal	2	3	1	2	3	1	12
Eletricidade, Orissa	4	5	5	4	5	2	25
Gas Natural	1	1	1	1	3	1	8
Telecoms	3	4	5	4	5	3	24
<i>Indonesia</i>							
Gas Natural	1	1	1	1	1	1	6
Transportes	1	1	1	1	1	1	6
<i>Malaysia</i>							
Telecoms	3	3	3	2	1	1	13
Transportes	3	3	2	2	1	2	13
Água	3	2	2	2	1	2	12
<i>Pakistão</i>							
Eletricidade	3	4	3	3	3	2	18
<i>Filipinas</i>							
Eletricidade	3	3	3	2	2	3	16
Água	3	3	3	3	3	2	17

Replication of the Asian Development Bank / NERA Index for Brazilian Regulatory Agencies

Agency	State	Sub-index Clarity of roles and Objectives	Sub-index x Autonomy	Sub-index x Participation	Sub-index x Accountability	Sub-index x Transparency	Sub-index x Predictability	ADB / NERA Index of Regulatory Governance
ANATEL	Federal	4.83	4.75	4.20	3.97	4.73	5.00	27
ANA	Federal	4.17	3.72	2.28	2.67	4.87	2.60	20
ANEEL	Federal	4.83	4.45	4.04	3.23	4.73	5.00	26
ANTAQ	Federal	3.80	3.50	3.08	3.38	5.00	3.16	22
ANTT	Federal	4.83	4.09	3.08	3.78	4.73	3.40	24
ANP	Federal	4.00	3.65	4.16	3.50	4.33	3.40	23
AGR	GO	4.67	3.25	4.00	3.49	4.73	3.40	24
AGERGS	RG	3.27	4.65	4.16	3.09	4.33	2.12	22
ARTESP	SP	4.00	3.30	1.16	3.06	3.40	2.60	18
ASEP	RJ	4.33	4.00	3.12	3.52	4.07	4.20	23
CSPE	SP	4.33	3.02	3.60	3.37	4.60	4.20	23
AAGISA	PB	3.67	2.11	1.00	2.06	3.60	3.40	16
AGEEL	PB	5.00	4.40	1.96	2.86	3.40	4.20	22
AGEPAN	MS	4.17	4.60	3.76	2.74	4.87	2.60	23
AGERBA	BA	4.33	2.69	3.96	2.49	4.20	3.40	21
ARCE	CE	4.60	3.40	3.80	3.15	3.13	3.72	22
ARSAL	AL	3.53	3.00	3.16	2.11	4.60	4.84	21
ARSEP	RN	4.33	2.50	1.00	2.80	2.07	4.20	17
ARPE	PE	4.67	3.50	3.36	2.54	4.07	3.40	22
ARSEP/AM	AM	3.17	3.40	4.16	3.00	4.87	3.84	22
AGER/MT	MT	3.33	3.71	3.44	3.71	4.60	3.04	22

Gutierrez (2003) Index

- Time-series 1980-2001
- Eight questions.
- Each question scored 0 or 1, final index average of 8 questions.
- Correlation with our index (0.45).

Agencia	Separação	Mandato legal	Independência orç e financeira	Remoção de diretores	Mecanismos claros de resolução de conflitos	multas	Agencia determina tarifas?	Audiências públicas p/ tarifas	Regulatory Framework Index	IGR
(peso)	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	1.000	
ANATEL	1	1	1	1	1	1	1	1	1.000	0.7169
ANA	1	1	1	1	0	1	0	0	0.625	0.5313
ANEEL	1	1	1	1	0.5	1	1	0	0.813	0.7031
ANTAQ	1	1	0	1	0.5	0.5	1	1	0.750	0.5601
ANTT	1	1	1	1	1	1	1	1	1.000	0.6197
ANP	1	1	1	1	1	1	0	1	0.875	0.6434
AGR	1	1	1	0	1	1	1	0	0.750	0.6190
AGERGS	1	1	1	1	0	0	1	1	0.750	0.5716
ARTESP	1	1	1	1	0	1	0	1	0.750	0.4508
ASEP	1	1	1	1	0.5	1	1	0	0.813	0.6008
CSPE	1	1	1	1	1	1	1	0	0.875	0.5963
AAGISA	1	1	1	0.5	1	1	0	1	0.813	0.4286
AGEEL	1	1	1	0	0	0	0	1	0.500	0.5204
AGEPAN	1	1	1	1	1	1	1	1	1.000	0.5874
AGERBA	1	1	0	0.5	1	1	1	1	0.813	0.5924
ARCE	1	1	1	0.5	1	1	1	1	0.938	0.5098
ARSAL	1	1	1	0.5	1	1	1	0	0.813	0.5198
ARSEP	1	1	1	0.5	0	1	0	1	0.688	0.4068
ARPE	1	1	1	1	1	1	1	0	0.875	0.5771
									Correlation	0.4574

Controls

- Parsimonious index.
- *De facto* index.
- Results become more interesting if periodically repeated.