Measuring Regulatory Independence

A Caribbean Perspective

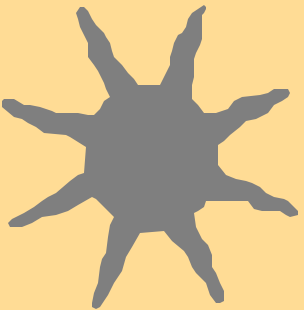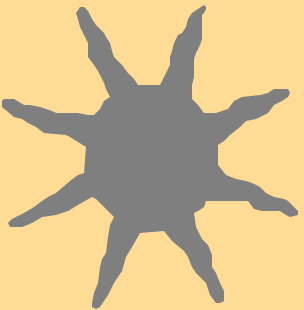**REGULATED INDUSTRIES COMMISSION**

Presentation Outline

* Introduction
* The European Experiment
* Methodological Issues
* The Independence Index
* Caribbean Considerations
* Confidence of Using Indexes
* Conclusions

Introduction

- ★ After 2 days of theory, sharing experiences and listening to much commentary on regulatory independence……………..

- ★ Do we, as a Region, know where we are in terms of our respective jurisdiction's independence status quos?

- ★ If the answer is NO! then how could we determine these status quos?

Introduction

* To capture this information, I propose adapting the method used in the Europe:

  – Design and serve an appropriate Questionnaire

  – Combine the data captured into an Index
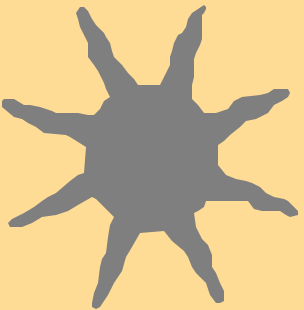
The European Experiment

★ Background

– OECD, March 2001 report found that IEA regulators' independence varied in terms of power and actual status quo.

– To study this independence empirically, a study was done by Katja Johannsen in 2002.

Aim of the European Survey

* Empirical Aim – to measure and compare central dimensions of regulatory authorities to investigate similarities & differences.

* Methodological Aim – attempt to measure relative independence by constructing an independence index.

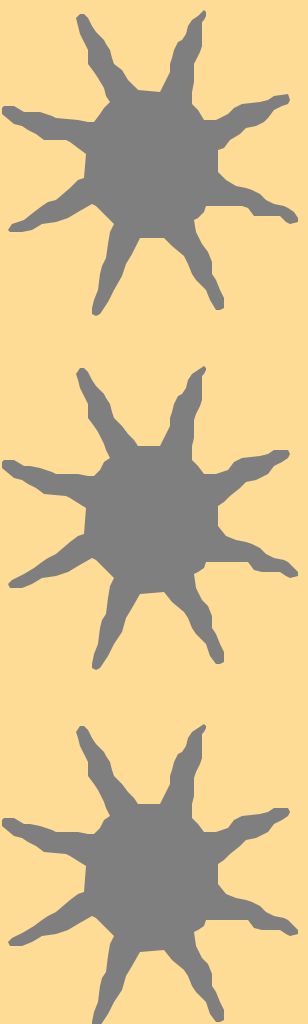* Theoretical Aim – to confront theoretical concepts of independence with empirical results.

The European Experiment

* Population delimitation – "regulators in the field of electricity and natural gas who are involved in implementing EU directive on internal market for electricity and call themselves independent".

* 8 countries participated: Austria; Denmark; Greece; Ireland; Italy; Luxembourg; Northern Ireland; and Spain.

Methodological Issues

* Questionnaire was the tool used to collect data

* In designing the questionnaire it's important to clarify the possible dimensions of a typology of regulatory independence

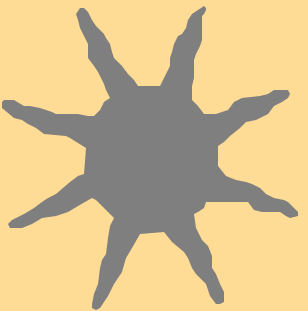* i.e. be very clear on what definition of regulatory independence is to be adopted as the ideal for the Caribbean

Methodological Issues

* Examples of Questions are…..

* <u>Under the heading</u>:–

   <u>Independence from Government</u>

   – What is the term of the agency head or commissioners?

   – Who appoints the agency head or the commissioners?

   – What are the provisions regarding dismissal?

   – Can the agency head or commissioners hold other offices in government?

Methodological Issues

✴ <u>Independence from Stakeholders</u>

– Can commissioners/agency head hold positions in (public/private) utility companies in years preceding their appointment?

– Are there provisions restricting commissioners'/agency head's possibilities of accepting a job after their term?

– On a scale of 1-10 how independent would you say that the regulatory authority is from stakeholder interests?

Methodological Issues

✴ <u>Independence in decision making (competency issues)</u>

–   Which of the following tasks does the regulatory authority perform?

a) Giving policy advice to the government

b) Provision of market information to consumers (transparency)

c) Monitoring of market behaviour and performance
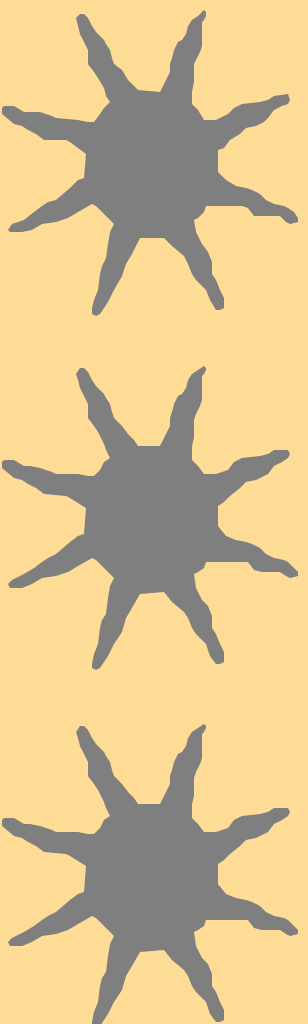
Methodological Issues

★ Considerations must be given to these important attributes of independence:

– How do we measure regulatory independence?

– What do we consider an appropriate arm's length relationship?

– How do we measure financial and organisational autonomy?

– What about independence in regulatory decision-making?

Methodological Issues

* Once these issues are resolved, then the investigator can develop key variables/attributes
* Key variables will be combined to form the Independence Index
* The 4 key variables in the European Study were:
  – Independence of regulators from government
  – Independence from stakeholders
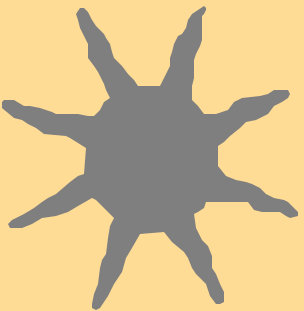 – Independence in decision-making
  – Organizational & Financial autonomy

Methodological Issues

★ Once the key variables are determined, appropriate questions could now be developed within a Caribbean context.

★ Answers should be provided for most questions, where possible, so that values can be coded easily.

The Independence Index

★ An Index is a variable that is a summed composite of other variables that are assumed to reflect the some underlying construct.

★ Thus the Independence Index allows us to weigh together several aspects of regulatory independence into a single measure.

The Independence Index

★ The main purpose of constructing this index:

  – Obtain an overview of the data, and

  – Gain insights into the diversity of organizational and institutional design of independent regulatory authorities, throughout the region.

European Independence Index

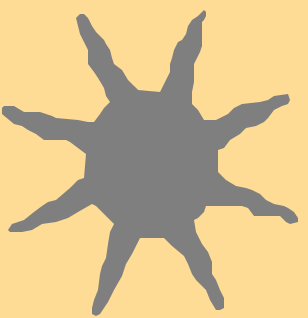★ In calculating the index, all answers were valued between 0 and 1.

0 = a lower degree of independence

1 = a high degree of independence

European Independence Index

* For instance, where 3 possible answers are given the values ascribed were: 0, 0.5, and 1.

* If there were 4 answers then the values became: 0, 0.33, 0.67, and 1.

* In cases of non-binary answers, the ordinal scale was translated into numerical values
  – The problem here was that no consideration was given to differences in the size of steps between answers.
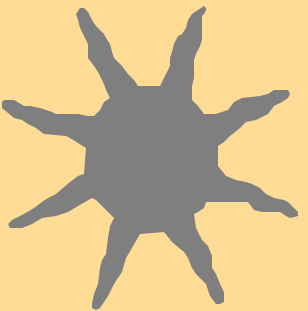
European Independence Index

The Independence Index

Country	Key Variables				Index	Rank
	Independence from Government	Independence from Stakeholders	Independent Decision-making	Organisational Financial Autonomy		
Austria	0.58	0.50	0.93	0.63	0.66	5
Denmark	0.44	0.33	0.87	0.63	0.57	8
Greece	0.78	0.33	0.92	0.75	0.69	4
Ireland	0.69	0.58	0.88	1.00	0.79	2
Italy	1.00	0.75	0.89	1.00	0.91	1
Luxembourg	0.42	0.63	0.58	0.75	0.59	6
Northern Ireland	0.44	1.00	0.88	0.63	0.74	3
Spain	0.61	0.58	0.36	0.75	0.58	7
Mean	0.62	0.59	0.79	0.77	0.69	-

Source: Johannsen (2003)

Caribbean Considerations
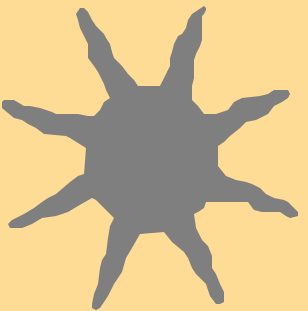
* Clear definition of regulatory independence

* This definition must embody the pillars of regulatory independence :
  - Independence from government
  - Independence from stakeholders
  - Independence in regulatory decision making
  - Financial and organizational autonomy
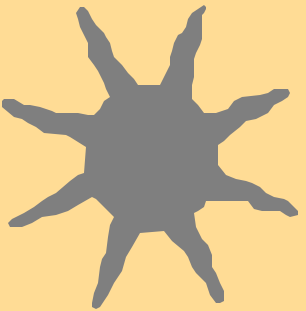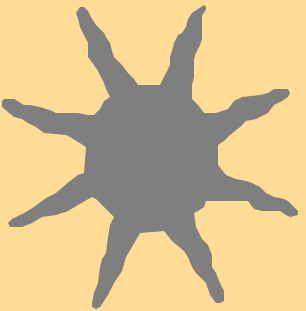
Caribbean Considerations
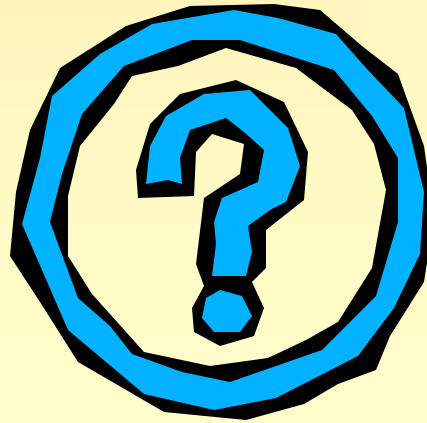
✶ The following 8 variables can be considered:

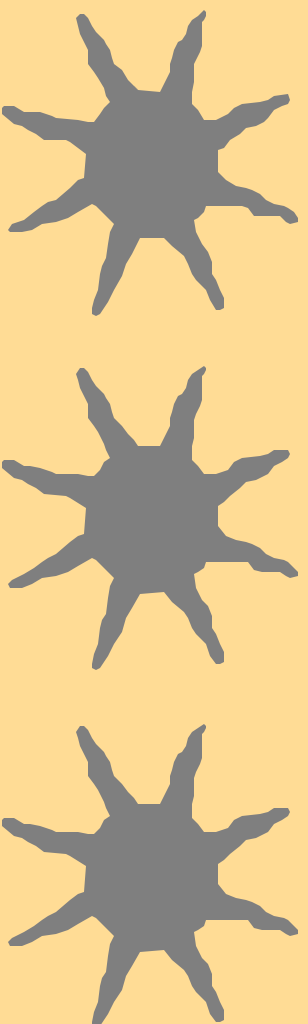| Independence	Transparency
Accountability	Criteria for Board Selection
Tenure	Financial Autonomy
Decision Making	Staff Salary

Caribbean Considerations

Will it work?

Confidence of the Index

- The quality of an index can be judged by the average intercorrelation among indicators and the number of indicators comprised.

- Cronbach's alpha is used to test the reliability of an index.

Confidence of the Index

$$\hat{a} = \frac{k\overline{r}}{1 + (k-1)\overline{r}}$$

Where

k = the number of indicators in the index

$\overline{r}$ = the average intercorrelation among the k items comprising the index
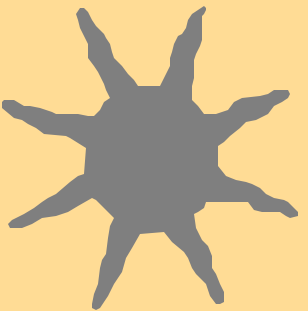
Confidence of the Index

⋆ Cronbach's alpha measures the internal consistency of a set of items.

With:

0 = no internal consistency

1 = perfect internal consistency

Between 0.75 & 0.80 is acceptable

Confidence of the Index

✴ Results of test performed on European Index:

Reliability

 R E L I A B I L I T Y   A N A L Y S I S - S C A L E (A L P H A)

Reliability Coefficients

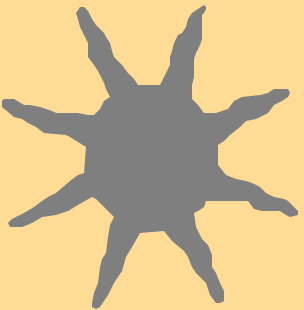N of Cases =   8.0   N of Items = 4
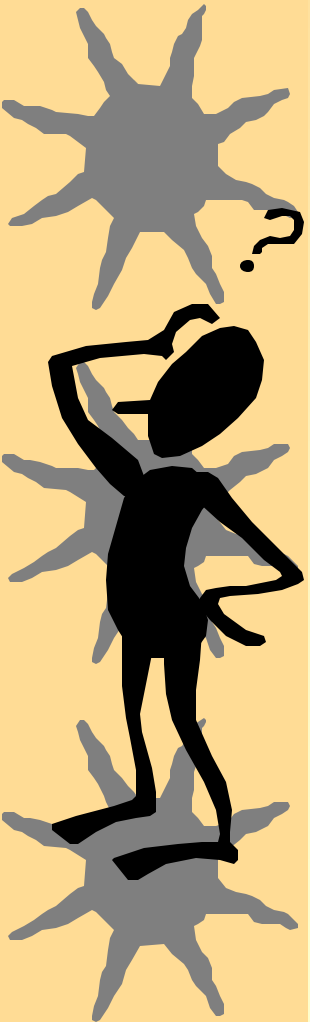
Alpha =   .4147

Interpretation

★ The 4 key variables used, do not appear to be sufficiently intercorrelated to measure a construct when combined on the same scale.

Was the Index Any Good?

* YES

* The Independence Index facilitated a snap-shot view of the empirical data.

* It also allowed meaningful comparative analyses to be made.

However

★Caveats to look for:

- The size of the population used in the sample would affect the reliability statistic

- Caribbean is small so internal consistency of variables may not be sufficiently intercorrelated

- Assignment of values is subjective and thus introduces bias into the final index constructed

Possible Caribbean Index

Simulated Caribbean Independence Index

Country	Indepen-dence	Transparency	Accountab-ility	Criteria Selection of Board	Tenure	Financial Autonomy	Decision-making process	Staff Salary	Index
	0.73	0.70	0.67	0.58	0.62	0.92	0.85	0.95	0.75
	0.62	0.73	0.68	0.55	0.68	0.75	0.87	0.89	0.72
	0.78	0.68	0.72	0.58	0.72	0.71	0.90	0.75	0.73
	0.75	0.65	0.79	0.50	0.70	0.80	0.95	0.90	0.76
OECS	0.80	0.75	0.82	0.60	0.68	0.89	0.85	0.85	0.78
	0.70	0.78	0.80	0.52	0.72	0.85	0.83	0.70	0.74
Mean	0.73	0.72	0.75	0.56	0.69	0.82	0.88	0.84	0.75

Results for Caribbean Simulation

Results of Cronbach's Alpha on Simulated Case

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R E L I A B I L I T Y   A N A L Y S I S - S C A L E   (A L P H A)


Reliability Coefficients

N of Cases =     6.0            N of Items =  8


Alpha =    -.1161
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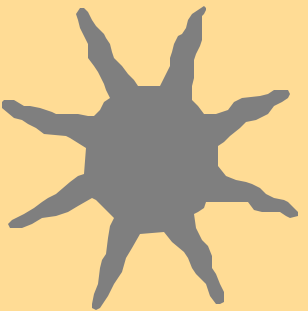
Conclusions

★ Should We Still Use This Method?

★ YES

★ An acceptable method for this type of investigation.

★ It has been and continues to be used by researchers.

Benefits

* Opportunity for Caribbean to define its regulatory independence
* Useful comparative analyses
* Compare jurisdictions and qualitatively assess, advancements and/or shortcomings
* Systematic method of ranking
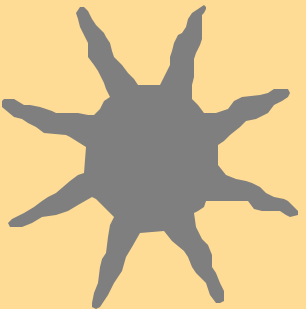* Add empirical evidence to theoretical concepts of regulatory independence in the Caribbean

Benefits

✦ Opportunity to undertake further research such as:

– Exploring the relationship between independence and price, or utility operations using econometric techniques.

Recommendation

As a logical continuum to this 2nd Annual Conference, OOCUR will commission a similar exercise for the Caribbean.

END OF PRESENTATION

Thank You

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