



**Institutional Foundations of Economic Freedom:
A time-series cross-section analysis**

**Xavier de Vanssay
Vincent Hildebrand
Zane A. Spindler**

Independent Institute Working Paper Number 51

May 20, 2004

20/5/2004

Institutional Foundations of Economic Freedom: A time-series cross-section analysis

Xavier de Vanssay

Department of Economics
York University (Glendon College)
2275 Bayview Avenue
Toronto M4N 3M6, CANADA
Email: devanssay@glendon.yorku.ca

Vincent Hildebrand

Department of Economics
York University (Glendon College)
2275 Bayview Avenue
Toronto M4N 3M6, CANADA

Zane A. Spindler¹

Department of Economics
Simon Fraser University
Burnaby V5A 1S6 Canada
Email: spindler@sfu.ca
&
School of Economics,
University of Cape Town,
7700 Rondebosch, SOUTH AFRICA

Abstract: Using time-series cross-section analysis, we provide additional empirical validation for the principal-agent model developed by Adserà, *et al.* (2003). In our innovation, efficient economic policy is proxied by “economic freedom” from the Fraser Institute database and “political institutions” are proxied by variables from the Database of Political Institutions. Our results suggest that the more credible the threat of removal from office, the more government officials will pursue efficient economic policies.

JEL Classification: D72, D78, H11, O57.

Key Words: Good Governance, Economic Freedom, Principal-Agent, Political Institutions, Constitutions.

¹ Corresponding author: Use email: spindler@sfu.ca

Institutional Foundations of Economic Freedom: A time-series cross-section analysis

The tragic illusion was that the adoption of democratic procedures made it possible to dispense with all other limitations on governmental power. It also promoted the belief that the 'control of government' by the democratically elected legislation would adequately replace the traditional limitations, while in fact the necessity of forming organized majorities for supporting a programme of particular actions in favour of special groups introduced a new source of arbitrariness and partiality and produced results inconsistent with the moral principles of the majority. F. A. Hayek (Law, Legislation and Liberty, Vol. III, p. 3, 1979)

Introduction:

Some countries implement consistently good economic policy, while some others systematically fail to do so. Over time, some countries improve their governance while others do exactly the opposite (Spiller & Tommasi 2003, 281). In short, when it comes to economic policy, there are great variations over time and across countries.

We are reminded of these facts every time a new international survey comes out. These surveys may cover the level of corruption (e.g., from Transparency International), ethnicity and/or culture (Fearon 2003). Others are concerned with the level 'economic freedom' (e.g., Scully & Slottje 1991, the Fraser Institute and the Heritage foundation). There are also more business oriented surveys such as the "International Country Risk Guide" (which is a composite index combining measures of corruption, bureaucratic quality, rule of law and the risk of expropriation of propriety published by the Political Risk Services Group).

Economists have studied and documented at length the effects of these variables. For instance, the consequences of corruption are well established (e.g., Shleifer & Vishny 1993, Mauro 1995), ethnicity and cultural influences are sometimes important (Alesina, *et al.* 2003), while the impact of economic freedom on economic

growth has been shown to be quite robust and generally efficiency increasing (e.g., de Vanssay & Spindler 1994, 1996; Easton & Walker 1997; de Haan & Sturm 2000, and Scully 2002). Further, Keefer & Knack (1997) have studied the role of institutional variables, such as business risk and country risk, on economic growth and convergence.

There have been fewer studies dealing with the root causes of economic freedom. Specifically, why do some countries have consistently higher levels of economic freedom than others? Why does the level of economic freedom of some countries increase over time, while it decreases for some others? In other words, do some institutional settings perform better than others when it comes to delivering economic freedom, which allows for more efficient economic policies to be pursued both publicly and privately?

This paper attempts to answer some of these questions and is organized as follows. The first part deals with the concept of economic freedom and link with efficient economic policy. The second part presents the theoretical model developed by Adserà, *et al.* (2003), which supports and provides the foundations for the empirical work. The third part deals with the data and the empirical results. The fourth part provides our concluding observations.

The government is best which governs least. Thomas Jefferson

Economic Policy and Economic Freedom

The most basic paradigm in economics is the concept of constrained optimization. For example, consumers choose their behavior to maximize utility subject to their budget constraints and producers choose their behavior to maximize profit subject to production relations between input and output, and to input prices and output prices. Necessarily,

after some optimal level of constraints (say, the minimal “rules of the game”) has been achieved, the greater the number of constraints on optimization, the lower the level of optimization. For example, consumers, who are subject to rationing, typically achieve a lower level of utility, while producers, who are subject to price controls, typically achieve a lower level of profit. The “rules of the game” may evolve and/or be chosen in private association or through public choice – that is, chosen through governing institutions, which may also choose optimally (or not!) subject to constraints (both natural and social – the “rules” of the “rules making game”).

From this simple relation between constraints and utility, profit and/or welfare outcome sprung the notion that freedom from constraints was a superior economic policy. This led Milton Friedman in such publications as *Free to Choose* (1980, Ch. 2; written jointly with Rose Friedman) to suggest that measuring government-imposed economic constraints would be a worthwhile way to measure the efficiency of economies and, by implication, the efficiency of government economic policy, whether active or passive. The lower the level of such constraints, the higher is the potential welfare, profitability, and hence, the higher is the level of wealth of an economy.

Over approximately a decade from the mid-eighties to the mid-nineties, under Friedman’s influence and the Liberty Fund’s support, The Fraser Institute organized a series of conferences, which ultimately led to the worldwide measurement of Economic Freedom Indices (**EFI**) (See Gwartney, *et. al.* 2003). In general, these **EFI** are inversely related to government-imposed constraints. The implication is that government economic policies are more efficient when they are less constraining.

Currently, there are no alternative *direct* measurements of economic policy efficiency. As an alternative, Osborne (2004) uses four policy outcome components (inflation, exchange rate premium on the black market, government expenditure, and trade openness) contribution to growth (with relative weights based on regression analysis) to measure 'economic policy'. Just like the Osborne measurement, the EFI is a linear combination of various policy outcome indicators. However, the list of components in the EFI is much more comprehensive than Osborne's, and the EFIs have been subjected to more empirical and critical analysis. Given the availability of these validated indices of economic freedom, the obvious way to proxy the efficiency of government policies is to use The Fraser Institute's Economic Freedom Indices.

This supposition is strengthened by over a decade of research and publication of studies showing the positive relationship between **EFI** and economic performance as conventionally measured in aggregate by Gross Domestic Product (**GDP**), the growth rate of **GDP** (**g**), and various measures of economic distribution (For a recent survey, see Berggren 2003). This literature is not without its critics (Easterly 2002, de Haan & Sturm 2003, and Hanson 2003), raising questions of causality, indentifiability, and indices weighting. However, given the variety of specifications and weightings tested empirically, the results are amazingly robust (de Haan & Sturm 2000, Gwartney & Holcombe 1999, Hanke & Walters 1997, Scully 2002, and Cole 2003). This provides some incentive for further exploration.

One path already opened by de Haan & Sturm (2003) concerns the genesis of Economic Freedom – specifically, the role (if any) played by political institutions in the level and/or evolution of Economic Freedom as measure by various **EFIs**. Democratic

institutions are apparently important in the sense that political freedom of a people contributes to their enjoyment of economic freedom as well. However, as noted in the quote above from Hayek, an important aspect of democracy is whether its exercise is constituted in a way that will more often, and uniformly, lead to the public good (de Vanssay & Spindler 1994,1996; Spindler & de Vanssay 2002, 2003). This depends, in turn, on whether political institutions provide for “incentive compatibility” between the “will of the people” and the actions of politicians. We will explore that question in the next section where we extend the model of Adserà for different dependent and independent variables for time-series of cross-section data.

*Sed quis custodiet ipsos custodes?*²

Principal-Agent Theory and Practice

Adserà, *et al.* (2003, pp. 447-8) develop a theoretical model based on a principal-agent framework. This framework was first applied to politics by Barro (1973) as the “delegation problem”. Later, this framework was applied to finance by Jensen & Meckling (1976) and is now commonly known as the “principal-agent problem”. As applied to political economy, and in this paper, the “principal” is the representative (or median³) citizen and the “agent” is the (dominant) politician.⁴

In this model, citizens, in their role as the principal, want good economic policies enacted on their behalf. For the usual economic reasons that flow from specialization

² “But who will guard the guardians themselves?” (Juvenal, *Satires*, Book VI, Verse 347).

³ Political modeling of citizen preferences as applied to governance most often uses the “median voter” as the focus for competitive politics. For example, see Mueller’s (2003, various chapters) latest review of public choice literature.

⁴ In a dictatorship, these roles may be reversed (however, see Mueller 2003, pp 406-7.), while within government, the principal(s) may be the politician(s) and the agent(s) may be the bureaucrat(s) (Though, these roles might also be reversed, as with bureaucratic models in Niskanen 1971).

and exchange, principals delegate such functions to their agents. Agents, in turn, are required to represent faithfully the views of their principals. This is where a problem may arise. The interests of the principal and the agent may diverge. For instance, once in power, a politician may enrich herself or pursue policy objectives that are at odds with those of her principal. The problem is compounded by an asymmetry of information (concerning the effects of various policies for instance) available to principals and agents.

In political exchange between principals and agents, an imperfect solution to this principal-agent problem is to establish a credible threat of removing politicians from office through periodically scheduled elections.⁵ This solution is imperfect because principals may not find it optimal to be fully informed about agents' activities, while agents may find it optimal to deceive their principals continually and especially periodically as election dates approach. However, those prospective agents who are competing to take-over incumbent agents' offices provide an imperfect counter to agents' rational distortion and principals' rational ignorance. Thus, with effective competition, the threat may be real enough to push incumbent politicians to behave responsibly.

If the politicians are not under any threat of forced removal, there is less incentive to implement and enforce efficient economic policies. For instance, politicians relying on a particular special interest group support for systematic reelection will cater to that

⁵ An alternative, but compatible, approach would be to apply North's (1990) transactions cost theory of politics, where having a "credible threat" against political agents lowers the cost of achieving general interest policies.

special interest group's needs – generally, at the expense of the “public interest” (as perhaps measured by the preferences of the “median voter”).

Competitive pressures on politicians will tend to be greater in a “composite state”, where horizontal competition exists between branches (i.e., the executive, the legislatures, and the judiciary) and vertical competition exists between levels (i.e., federal, state, and local), than in a “unitary state” with a unified hierarchy, such that competition only occurs for the top position.

At the extreme, a military dictator is even less likely to deliver efficient economic policies. This is because in the principal-agent model, the safeguard of regular elections has been removed or, to put it in another way, the cost of removing the agent has become prohibitive. One can even argue that, with a (military) dictatorship, the roles have been reversed: the citizens are now the agents of the dictators. Here, competition is still possible but it is more costly – generally involving a military takeover, either from within, as with a *coup d'état*, or from outside, by invasion, as with a *coup de Bush* (!).

These considerations lead us to hypothesize that the presence of free and fair elections, competition among politicians, checks and balances, the absence of military dictatorship, the absence of politicians relying on special interest groups for reelection, and the presence of electoral competition all contribute to the implementation of efficient economic policies. Whereas, Adserà *et al.* (2003) uses corruption, quality of public service, and rule of law as dependent variables measuring various aspects of “accountable government” or “good governance”, we propose using only the Economic Freedom Indices (*EFI*) as the dependent variable to proxy “efficient government” or “efficient public policy”. Whereas Adserà *et al.* (2003) uses both economic and political

variables as independent variables, we propose using only political variables representing constitutionally determined or regime determined political institutions. This is because Adserà's independent economic variables, such as "trade openness" and "level of capital controls", are variables to be explained as a consequence of government policy, and, indeed, are actually components of *EFIs*.

We describe our data and our alternative specifications in the following section.

If you torture the data long enough, Nature will confess. Ronald Coase.

Data and Regression Analysis

In brief, we hypothesize that:

$$EFI = f(PV),$$

Where *EFI* is the Economic Freedom Index and *PV* are the political variables, both as described below.

The data on Economic Freedom Indices (EFI) are from the latest Fraser Institute study (Gwartney et al., 2003). They cover from 53 countries for the earliest data up to 122 countries for the latest data. Data were available for years 1970, 1975, 1980, 1985, 1990, 1995, 2000 and 2001.⁶

⁶ More precisely, the data include 54 countries in 1970, 83 countries in 1975, 105 countries in 1980, 111 countries in 1985, 113 countries in 1990 and 122 countries for 1995, 2000 and 2001. These countries are: Albania, Algeria, Argentina, Australia, Austria, Bahamas, Bahrain, Bangladesh, Barbados, Belgium, Belize, Benin, Bolivia, Botswana, Brazil, Bulgaria, Burundi, Cameroon, Canada, Central African Republic, Chad, Chile, China, Colombia, Congo, Dominican Republic, Costa Rica, Cote d'Ivoire, Croatia, Cyprus, Czech Rep., Denmark, Dominican Rep., Ecuador, Egypt, El Salvador, Estonia, Fiji, Finland, France, Gabon, Germany, Ghana, Greece, Guatemala, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iran, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kenya, Kuwait, Latvia, Lithuania, Luxembourg, Madagascar, Malawi, Malaysia, Mali, Malta, Mauritius, Mexico, Morocco, Myanmar, Namibia, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Panama, Pap. New Guinea, Paraguay, Peru, Philippines,

The data on political institutions (*PV*) are selected from the *DPI2000* (Database of Political Institutions Version 2.0, (Beck *et al.*, 2001, Keefer & Stasavage, 2003)). These are yearly data from 1975 to 2000. They have been modified so as to facilitate regression analysis and are divided into 4 sections⁷:

1. Variables concerning the Chief Executive:

a. Political setting: The “political setting” of the Chief Executive is captured by three dummy variables:

systemd - takes the value of one if there is an assembly-elected president or a parliamentary system; takes the value of zero otherwise.

finitrm - takes the value of one if there is a finite term to the mandate of the Chief Executive; takes the value of zero otherwise.

military - takes the value of one if the Chief Executive is a military officer (that is, if there is a rank in his title); takes the value of zero otherwise.

b. Party orientation: The “party orientation” of the Chief Executive with respect to economic policy is captured by four dummy variables:

execrld1 - takes the value of one if no affiliation (or not applicable), takes the value of zero otherwise.

execrld2 - takes the value of one if the affiliation is “right”, takes the value of zero otherwise.

Poland, Portugal, Romania, Russia, Rwanda, Senegal, Sierra Leone, Singapore, Slovak Rep, Slovenia, South Africa, South Korea, Spain, Sri Lanka, Sweden, Switzerland, Syria, Taiwan, Tanzania, Thailand, Togo, Trinidad & Tobago., Tunisia, Turkey, Uganda, Ukraine, United Arab Emirates, United Kingdom, United States, Uruguay, Venezuela, Zambia and Zimbabwe).

⁷ A statistical summary of these variables is provided in Appendix

execrlcd3 - takes the value of one if the affiliation is “left”, takes the value of zero otherwise.

execrlcd4 : takes the value of one if the affiliation is “center”, takes the value of zero otherwise.

c. Religious affiliation: The “religious affiliation” of the Chief Executive is captured by 4 dummy variables:

execrelg1 - takes the value of one if the affiliation is “not religious” (or not specified), takes the value of zero otherwise.

execrelg2 - takes the value of one if the affiliation is “Christian” (including Catholic), takes the value of zero otherwise.

execrelg3 - takes the value of one if the affiliation is “Hindu”, takes the value of zero otherwise.

execrelg4 - takes the value of one if the affiliation is “Islamic”, takes the value of zero otherwise.

d. Special-interest orientation: The “special interest orientation” of the Chief Executive is captured by one dummy variable:

execspec - takes the value of one if the party of the executive represents any special interests (i.e. rural, religious, regional, nationalist), takes the value of zero otherwise.

e. Extent of control: Finally, the “extent of control” of the Chief Executive is captured by one dummy variable:

allhoused - takes the value of one if the party of the Chief Executive controls the legislature (i.e., both houses when there is more than one house); takes the value of zero otherwise.

2. Party variables in the Legislature:

A standard measure of concentration drawn from the industrial organization literature, Herfindahl-Hirschman concentration ratio, is applied to measure the extent of “legislature concentration”.

Herfgov – is the Herfindahl Government Index calculated as the sum of the squared seat shares of all parties in the government. It equals **NA** if there is no parliament, or, if there are any government parties where seats are unknown, the cell is **blank**. Note that $0 < herfgov < 1$. This index is a measure of power concentration. It increases as the number of parties in the government decreases and the disparity in size between these parties increases.

Herfopp – is the Herfindahl Opposition Index calculated in the same manner as **Herfgov**. It equals **NA** if there is no parliament. If there are any opposition parties where seats are unknown (cell is blank), the Herfindahl is also blank. No parties in the Legislature results in a NA in the Herfindahl. Note that $0 < herfopp < 1$. This index is a measure of opposition party concentration.

3. Electoral Rules and ‘Checks and Balances’:

A series of ratings and dummy variables proxy the restraint on government provided by electoral and legislative rules.

liec - is a rating called the Legislative and Executive Indices of Electoral Competitiveness. The higher its value, the higher level of electoral

competitiveness. Its possible values are: “1” (if no legislature), “2”, “3”, “3.5”, “4”, “5”, “5.5”, “6”, “6.5” and “7” (if largest party got less than 75%).

prd - takes the value of one if there is proportional representation; takes the value of zero otherwise.

vote - takes the value of one if elections are possible, takes the value of zero otherwise.

vote~~f~~ – takes the value of one if vote fraud or candidate intimidation are serious enough to affect the outcome of elections; takes the value of zero otherwise. It captures “extra-constitutional” irregularities and is being used in conjunction with the vote variable. This variable is only important for non-OECD countries with well established democracies.

checks - is a rating which indicates the level of checks and balances. It varies between 1 and 15 (1, 2, 3, 4...). The higher the value, the more checks and balances.
(See Beck, *et al.* 2001.)

4. Extent of Federalism:

The extent of federalism (ranging from unitary state, federal government, confederate government), and devolution of power to states and provinces, is characterized by the following four dummy variables.

auton - takes the value of one if there are contiguous autonomous regions; takes the value of zero otherwise.

stated1 - takes the value of one if neither the legislature nor the executive are locally elected, takes the value of zero otherwise.

stated2 - takes the value of one if the executive is appointed but the legislature is locally elected, takes the value of zero otherwise.

stated3 - takes the value of one if both the legislative and the executive are elected locally, takes the value of zero otherwise.

5. State of Development

We also use a dummy variable to separate countries according to their political and economic development level. This is not used in the regression *per se*, but is used to separate the sample, when necessary, between **OECD** and **Non-OECD** Countries.

oecd - takes the value of one if a country is a member of the **OECD**; zero otherwise

The majority of **OECD** members joined in the 1960's. Others, however, joined in the 1990's. The latest member is the Slovak Republic, which joined in December 2000⁸. Accordingly, the dummy variable does not take the value of one until the year the country joins the **OECD** (and the years after). For instance, **oecd** for Poland takes the value of 0 prior to 1996, 1 afterwards.

The reason for separating (albeit artificially) between **OECD** and developing countries is that "the level of political freedom hardly changed in the industrial countries, in contrast to developing countries" (de Haan & Sturm 2003, 549). A different dynamic is likely at work in each sample.

6. The regression results:

We report the results of various linear regressions using the Beck & Katz (1995) methodology using **PCSEs** (panel-corrected standard errors). This methodology, also

⁸ The 30 members are Australia (since June 1971), Austria (September 1961), Belgium (September 1961), Canada (April 1961), the Czech Republic (December 1995), Denmark (May 1961), Finland (January 1969), France (August 1961), Germany (September 1961), Greece (September 1961), Hungary (May 1996), Iceland (June 1961), Ireland (August 1961), Italy (March 1962), Japan (April 1964), Korea (December 1996), Luxembourg (December 1961), Mexico (May 1994), the Netherlands (November 1961), New Zealand (May 1973), Norway (July 1961), Poland (November 1996), Portugal (August 1961), the Slovak Republic (December 2000), Spain (August 1961), Sweden (September 1961), Switzerland (September 1961), Turkey (August 1961), the United Kingdom (May 1961), the United States (April 1961).

used by Adesrà, *et al.*, yields the same coefficients as would an **OLS** regression, but with (larger) standard errors of the estimated coefficients (Beck & Katz 1995, 638). According to its authors, it corrects for the overconfidence of the **FGLS t**-values. Finally Beck & Katz (1995, 637) also note that their methodology is particularly appropriate when the panel data set is ‘cross-section dominant’ (when there are more countries than time-periods), which is the case here (Podestà 2002, 16).

We have regressed Economic Freedom Indices (**EFI**) against the various institutional variables detailed above. Specifically,

$$EFI = f_1(\text{Variables concerning the Chief Executive}).$$

$$EFI = f_2(\text{Party variables in the Legislature}).$$

$$EFI = f_3(\text{Electoral Rules and ‘Checks and Balances’ variables}).$$

$$EFI = f_4(\text{Federalism variables}).$$

First, we start with the variables concerning the Chief Executive. See **Table 1**, **Table 1** summarizes the results for all countries (**OECD** and **non-OECD**)⁹. The regression results give broad support to “principal-agent model of government”.

When there is an assembly-elected president or a parliamentary system (**systemd**) or a finite term to the mandate of the Chief Executive (**finitrm**), there is a positive (and significant) impact on economic freedom. The Chief Executive has an incentive to adopt good economic policy in order to ensure her reelection.

⁹ The results for non-OECD countries are broadly similar to those presented here. For the OECD countries, the results are (understandably) blander. We have only 141 observations and we do not use the military variable (because there is no variation in that term for OECD Countries). Both results are available upon request.

Table 1: All Countries Summary*(Dep. Var. = EFI; # of obs. = 570; R² = 0.2955)*

Ind. Var.	Coefficient	Std. Err.	z
systemd	0.54837 *	0.101203	5.42
Finittrm	0.417688 *	0.08962	4.66
Military	-1.02046 *	0.128598	-7.94
execrlcd2	-0.19386	0.112956	-1.72
execrlcd3	-0.5465 *	0.133787	-4.08
execrlcd4	-0.49618 *	0.116126	-4.27
execrelg2	0.738288 *	0.135067	5.47
execrelg3	-1.15477 *	0.381345	-3.03
execrelg4	-0.06522	0.242669	-0.27
Execspec	-0.37851 *	0.064777	-5.84
Allhoused	-0.37986 *	0.070562	-5.38
_cons	5.68781 *	0.198672	28.63

* Significant at the 5-percent level

On the other hand, when the Chief Executive is a military officer (**military**), the impact on economic freedom is negative (and significant). This is because the military government is under no immediate threat of being replaced following an election. A popular vote can be delayed, cancelled, annulled or rescheduled at a time chosen by the military. The incentive to adopt good economic policies in the general interest has been replaced by the incentive to adopt economic policies destined to ensure the continuing support for the Chief Executive *within* the military and by elite groups served by the military.

When the party of the executive represents a special interest (**execspec**), the impact on economic freedom is negative (and significant). This is totally consistent with the principal agent model of government. When the Chief Executive is beholden to special interests (i.e. rural, religious, regional, nationalist), he has an incentive to adopt economic policies destined to placate them. These economic policies may be counter to the general interest. We should expect that the stronger the link between a special

interest and the Chief Executive, the stronger the *quid pro quo* between them and the greater the continued political support for economic policies serving special interests.

The coefficient for ***allhoused*** is negative and significant. This means that, *ceteris paribus*, when the party of the Chief Executive controls both houses, this has a negative impact on economic freedom. Again, this is consistent with the principal agent model of government. Given the traditional division of powers, when the Executive and (both branches of) the Legislative are on the same side, there are three reasons why the Chief Executive will be under less pressure to promote efficient economic policies: First, it is less likely that the Executive will be defeated by the Legislature through a non-confidence vote and be forced to obtain a new mandate from the electorate; Second, it is also less likely that the Executive will dissolve the Legislature –and force *it* to obtain a new mandate from the electorate; Third, by controlling *both* houses, the Executive has rendered the Senate basically ineffective as the ‘Chamber of Sober Second Thought’.

An additional explanation for the negative sign is given by the “First do no harm” principle. It is possible that, when the Executive and the Legislative powers are on opposite sides, both are vulnerable politically and therefore more careful when it comes to legislation. So, less harm is done to the economy because less one-sided legislation is adopted.

Second, for the results concerning the party variables in the Legislature, see **Tables 2** below. The results indicate that a higher ***herfgov*** (the Herfindahl Government Index) leads to a lower level of economic freedom (*ceteris paribus*). This is consistent with our model. A high Herfindahl Government Index means that the government legislative coalition comprises few political parties. Assuming that a small political

coalition is less likely to fall or being overthrown than a broader one, a high Herfindahl Government Index means less frequent elections or less frequent change in government *following* an election. The case of Canada’s “natural governing party”, the Liberals, comes to mind. As we have seen the smaller the threat of being replaced, the less likely a government will adopt good economic policies.

Table 2: All Countries Summary
 (Dep. Var. = *EFI*; # of obs. = 431; $R^2 = 0.02$)

Ind. Var.	Coefficient	Std. Err.	z
<i>herfgov</i>	-0.6502 *	0.220662	-2.95
<i>herfopp</i>	0.155783	0.222935	0.7
<i>_cons</i>	6.317631 *	0.123758	51.05

* Significant at the 5-percent level

Third, we regress *EFI* against the electoral rules and ‘Checks and Balances’ variables and present the results in **Table 3**. Here, for obvious reasons we limit our sample to countries where elections take place (even if occasionally)

For ‘all countries’ where elections are possible, we consider if the presence of voting fraud has an impact on economic freedom. We are also interested in the role played by the variables **Checks and Balances** and *liec*. The results indicate that, when it occurs, voting fraud has a negative impact on economic freedom. We view the presence of electoral fraud as a mechanism by which sitting governments bypass the electorate’s judgment and therefore are less inclined to adopt good economic policies. Interestingly, the variable *prd* (proportional representation) does not seem to play a serious role one way or the other. This is true whether or not we control for *voteef* or the *liec*. One reason might be that, while it forces these governments to be more accountable to the electorate, proportional representation leads to more unstable and short lived governments because of the precarious coalitions (e.g., Italy, Israel,).

Positive economic reforms for which the payoff will unfold only over time might not be undertaken when governments are too unstable.

Table 3: All “Voting” countries Summary

(Dep. Var. = *EFI*; # of obs. = 504; $R^2 = 0.2032$)

Ind. Var.	Coefficient	Std. Err.	z
<i>liec</i>	0.295547*	0.068923	4.29
<i>checks</i>	0.118085*	0.046046	2.56
<i>prd</i>	-0.03298	0.104482	-0.32
<i>vote</i>	-0.47495*	0.193771	-2.45
<i>cons</i>	3.536415*	0.324155	10.91

* Significant at the 5-percent level

The results from **Table 3** indicate that only the variables *liec* (Legislative and Executive Indices of Electoral Competitiveness) has a positive and statistically significant impact on economic freedom. The voting fraud is not considered in this regression as, already mentioned, all the vote frauds occur in **non-OECD** countries. Interestingly the proportional representation variable *prd* has a negative (although not very significant) sign.

Fourth, we look at the role of the federalism variables (**Table 4**). This table indicates that when the executive and/or the legislative is locally elected, there is a positive impact on economic freedom. This is consistent with the Principal-Agent Model.

Table 4: All countries Summary

(Dep. Var. = *EFI*; # of obs. = 460; $R^2 = 0.0827$)

Ind. Var.	Coefficient	Std. Err.	z
<i>auton</i>	-0.14867	0.150467	-0.99
<i>stated2</i>	0.280161*	0.098415	2.85
<i>stated3</i>	0.88116*	0.109732	8.03
<i>cons</i>	5.389696*	0.231283	23.3

* Significant at the 5-percent level

Indeed, locally elected governments are a form of choice for the electorate. Voters can vote with their feet and choose to relocate where the government is more responsible.

On the other hand, the role of contiguous autonomous regions is not very significant. This is due, in part, to the fact that less than 5 % of the countries surveyed are concerned with this issue.

Finally, we combine the best performing variables from these separate regressions into one regression for all countries combined (**Table 5**), for **OECD** countries (**Table 6**) and for **Non-OECD** countries (**Table 7**), respectively.

Table 5: All Countries (OECD and Non-OECD)
(*Dep. Var.*= *EFI*; # of obs. = 403; $R^2 = 0.3275$)

Ind. Var.	Coefficient	Std. Err.	z
systemd	0.441266*	0.134413	3.28
military	-0.91633*	0.139258	-6.58
execrld2	-0.25549	0.146577	-1.74
execrld3	-0.64264*	0.117533	-5.47
execrld4	-0.29655	0.168669	-1.76
execspec	-0.22947	0.167802	-1.37
checks	0.144996*	0.034288	4.23
prd	0.195134*	0.056711	3.44
auton	-0.23177	0.162297	-1.43
stated2	0.066774	0.100754	0.66
stated3	0.533663*	0.077021	6.93
cons	5.352985*	0.183973	29.1

* Significant at the 5-percent level

Table 5 gives a strong endorsement to our hypothesis that the principal-agent model can be applied to understand the basis for good governance. Governance is better (as measured by a higher Economic Freedom Index) when there is a credible threat of losing office. This occurs when there is a democratic system (**systemd** has a significant positive coefficient) and when there is not a military dictatorship (**military** has a significant negative coefficient). It also occurs when there is a more direct connection between both the executive and legislature and the people, as when both are elected

(**stated3** has a significant positive coefficient) rather than when the executive is appointed by the legislature which in turn is elected (**stated2** has a non-significant positive coefficient).

This relationship between the people and the executive may be disturbed by ideological or interest group bias – especially leftist bias (**execrlcd2, execrlcd3, execrlcd4, and execspec** all have negative coefficients, though only the coefficient for **execrlcd3** – a left oriented Chief Executive – is strongly significant). Obviously, checks and balances also play a favorable role in keeping governance on track (**checks** has a significant positive coefficient).

The role of proportional representation also appears favorable in **Table 5** (**prd** has a significant positive coefficient), though this is questionable based on the results in other Tables. Similarly, our results are ambivalent about the role of autonomous regions.

Because **Table 5** has the largest sample of all our results, the variation of the independent variables is also the greatest. Therefore, the variables and their combination in **Table 5** have greater explanatory power than in subsequent tables presented here. This is particularly relevant because of the use of dummy variables. For example, consider the OECD Countries, which have broadly similar institutional characteristics that do not vary greatly over time. This sub-sample of 30 countries does not perform as well as the larger sample when dummy variables for institutional characteristics are used. This can be seen by comparing **Table 5**, which is inclusive of all countries (both OECD and non-OECD), with **Table 6** for only OECD Countries below.

Table 6 shows that different institutional characteristics are more important in the most developed countries. All these countries are very similar with respect to their

basic democratic and electoral institutions so that these characteristics do not offer much explanation for differences in the dependant variable within this sample (as opposed to between this and the Non-OECD sample).

Table 6: OECD Countries

(Dep. Var.= *EFI*; # of Obs.= 139; $R^2 = 0.0834$)

Ind. Var.	Coefficient	Std. Err.	z
<i>systemd</i>	-0.43329	0.29271	-1.48
<i>herfgov</i>	-0.67884*	0.258528	-2.63
<i>liec</i>	0.812231*	0.195954	4.15
<i>prd</i>	-0.44776	0.248017	-1.81
<i>auton</i>	-0.28405	0.172228	-1.65
<i>_cons</i>	2.402829	1.429653	1.68

* Significant at the 5-percent level

The OECD countries differ most with respect to their legislative organization, specifically with respect to concentration of political parties, and their competitiveness, inside the legislatures. The more concentrated is political control (*herfgov* has a significant negative coefficient), the less efficient is governance. The more competitive the political parties (i.e., when *liec* has a significant positive coefficient), the more efficient is governance.

Finally, we complete our overall empirical analysis by looking only non-OECD countries in **Table 7** below. **Table 7** generally adds some support to the conclusions drawn from **Table 6** in that, for a sub-sample of lesser developed countries, the variables associated with the credible threat of loss of office still significantly play their expected role as (now somewhat more significantly) modified by ideological and special interest bias.

Noteworthy in **Table 7** is that an additional variable, denoting a limited term for the executive (*finittrm*), now enters with a significant positive coefficient thus showing the

importance of a mandatory and regular periodic review of the Chief Executive by the voters. This characteristic likely distinguishes between non-OECD democracies which are relatively more or less stable as well as those where there are more or less advanced democratic ethics with respect to fair play.¹⁰

Table 7: Non-OECD Countries
(Dep. Var. = *EFI*; # of Obs. = 340; $R^2 = 0.2199$)

Ind. Var.	Coefficient	Std. Err.	z
<i>systemd</i>	0.25819	0.132772	1.94
<i>finitrm</i>	0.232195*	0.107454	2.16
<i>military</i>	-0.799848*	0.115422	-6.93
<i>execrld2</i>	-0.13712	0.125552	-1.09
<i>execrld3</i>	-0.82037*	0.134202	-6.11
<i>execrld4</i>	-0.48348*	0.170133	-2.84
<i>execspec</i>	-0.39789*	0.102896	-3.87
<i>herfgov</i>	-0.09501	0.136125	-0.7
<i>checks</i>	0.044583	0.035038	1.27
<i>auton</i>	-0.21459	0.197113	-1.09
<i>_cons</i>	5.569195*	0.237245	23.47

* Significant at the 5-percent level

Despite the claims of political-economic models, there is no single cohesive unit called the "Government" devoted to maximizing the incumbency of the executive. Legislatures, legislative committees, bureaucracies, agencies, central banks, and all the others involved in shaping economic outcomes, all have quite different constituencies from the executive, and those constituencies may not be at all sympathetic to the economic program of the executive. (Tufte, p. 139)

Concluding Observations

In the spirit of Tufte's quote above, we will not claim to have shown the exact key to government control. Rather, our empirical results add further support to some common

¹⁰ A paper by Fedderke (2003) recently brought to our attention also pays attention to institutional design and specifically mentions the term limits, which in his case refers to limits on the number of terms rather than to a limited length of term, which is what *finitrm* measures. His evaluation is worth quoting:

The crucial point is that societies have a choice between designing institutions that limit the impact of abuse of privilege, or of limiting the time politicians may spend in office. Where a society does not have the institutions that control abuse of privilege, the only recourse is something like term

constitutional and electoral features (such as democratic selection, limited terms, and other checks and balances) long hypothesized as important in determining good governance. Our empirical results also suggest that the principal-agent model of government may be a useful paradigm for empirical political analysis, as previously hypothesized and measured by Adserà, *et al.* (2003) and by others who have used this model -- albeit with somewhat different theoretical and empirical interpretations.

Our model was initially inspired by Adserà's approach. We broadly reach the same conclusions on the importance of political accountability. However comparing the two papers is not an easy task. We have used different dependent and independent variables. For the dependent variable, we have used the Economic Freedom Index (*EFI*) as a proxy of "good economic policy", while Adserà, *et al.* (2003) used variables such as "corruption" or "the rule of law". The main differences, however, concern the independent variables. We have chosen to strictly limit ourselves to testing the principal-agent model of political accountability. Accordingly, we have only used political and institutional variables for our independent variables. We believe that our approach is valuable as an extension of the democracy and economic policy literature and that it nicely complements the work of Adserà, *et al.* (2003). However, unlike Adserà (who finds "Constitutional arrangements are irrelevant, except for federalism, which reduces corruption." Adserà 2003, 480) and in line with our previous studies showing the importance of constitutional arrangements (de Vanssay & Spindler 1994, 1996; and Spindler & de Vanssay 2002), our current results show the relative importance of

limits. But equally, where a society has mechanisms that ensure probity in public office, the need to curb the length of time spent in office diminishes also. Fedderke 2003, 29-30.

various constitutional arrangements in explaining differences in economic freedom indexes and, hence, the differences in the efficiency of economic policies.

Further, the results in our paper can be read as showing that political accountability and democratic competition tend to constrain politicians to promoting good economic policies. From other literature, we know that good economic policies translate into economic growth (Berggren, 2003). We also know that “the propensity for democracy rises with per capita GDP” (Barro, 1999, p. 158). So our paper can be viewed as a contribution to the empirical study of this “virtuous circle of democracy”.

Hopefully, as further, more refined and diverse data measuring institutional characteristics and economic policies becomes available, future tests of the principal-agent paradigm might become ever more conclusive and ever less ambiguous. In the meanwhile, our empirical results lead us to feel confident in reaching a general qualitative conclusion that competitive democratic mechanisms are very important in promoting efficient economic policies.

REFERENCES:

- Adserà, A., C. Boix, & M. Payne (2003). Are you being served? Political accountability and quality of government. *The Journal of Law, Economics & Organization* 19 (2): 445-490.
- Alesina, A., A. Devleeschauwer, W. Easterly, S. Kurlat, & R. Wacziarg (2003) Fractionalization. *Journal of Economic Growth* 8: 155-194.
- Barro, R.J. (1973) The control of politicians: An economic model. *Public Choice* 14: 19-42.
- Barro, R.J. (1999) Determinants of Democracy. *Journal of Political Economy* 107: S158-S183.
- Beck, N. & J. N. Katz (1995). What to do (and not to do) with time-series cross-section data. *American Political Science Review* 89 (3, September): 634-47.
- Beck T., G. Clarke, A.Groff, P. Keefer, & P. Walsh (2001). New tools in comparative political economy: The Database of Political Institutions. *World Bank Economic Review* 15 (1, September):165-176.
- Berggren, N. (2003). The benefits of Economic Freedom: A survey. *The Independent Review* 8 (2, Fall): 193 - 211.
- Cole, J. H. (2003). The contribution of Economic Freedom to World Economic Growth, 1980-99. *Cato Journal* 23 (2, Fall): 189-198.
- de Haan, J. & J.-E. Sturm (2000). On the relationship between economic freedom and economic growth. *European Journal of Political Economy* 16: 215-241.

- de Haan, J. & J.-E. Sturm (2003). Does more democracy lead to greater economic freedom? New evidence for developing countries. *European Journal of Political Economy* 19: 547-63.
- de Vanssay, X. & Z.A. Spindler (1994). Freedom and Growth: Do constitutions matter? *Public Choice* 78, (3-4, March): 359-372.
- de Vanssay, X. & Z.A. Spindler (1996). Constitutions, institutions and economic Convergence: An International Comparison. *Journal for Studies in Economics and Econometrics* 20 (3): 1-20.
- Easton, S. T., & M. A. Walker (1997). Income, Growth, and Economic Freedom. *American Economic Review* 87 (2) (May): 328-32.
- Easterly, W. (2002). *The Elusive Quest for Growth*. Cambridge: MIT Press.
- Fearon, J.D. (2003) Ethnic and Cultural Diversity by Country. *Journal of Economic Growth* 8:195-222.
- Fedderke, J. (2003) Just how sub-optimal is Robert Mugabe? Optimizing candidates seeking public office. ERSA Working Paper 30 (June).
- Friedman, M. & Friedman. R. (1980) *Free to Choose: A Personal Statement*. New York: Harcourt Brace Jovanovich.
- Gastil, R. D. (1990). The Comparative Survey of Freedom: Experiences and suggestions. *Studies in Comparative International Development* 25 (1): 26-50.
- Gwartney, J., R. Lawson & R. Holcombe (1999). Economic freedom and the environment for economic growth. *Journal of Institutional and Theoretical Economics* 155 (4): 1-21.

- Gwartney, J. & R. Lawson with N. Emerick. (2003). *Economic Freedom of the World: 2003 Annual Report*. Vancouver: The Fraser Institute, 2003. Data retrieved from www.freetheworld.com
- Hanke, S. H., & S.J.K. Walters (1997). Economic freedom, prosperity, and equality: A Survey. *Cato Journal* 17 (2) (Fall): 117-46.
- Hayek, F.A. (1979) *Law, Legislation and Liberty: The Political Order of a Free People*. Chicago: The University of Chicago Press.
- Hanson II, J. R. (2003). Proxies in the new political economy: caveat emptor. *Economic Inquiry* 41 (4, October): 639-46.
- Jensen, M.C., & W.H. Meckling (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, Vol. 3: 303-360.
- Keefer, P. & S. Knack (1997). Why don't poor countries catch up? A cross-national test of an institutional explanation. *Economic Inquiry* 35 (July): 590-602.
- Keefer P. & D. Stasavage (2003). The limits of delegation: Veto players, central bank independence and the credibility of monetary policy. *American Political Science Review* (August).
- Mauro, P. (1995). Corruption and growth. *Quarterly Journal of Economics* (August): 681-712.
- Mueller, D.C. (2003). *Public Choice III*. Cambridge: Cambridge University Press.
- Niskanen, W.A. (1971) *Bureaucracy and Representative Government*. Chicago: Aldine-Atherton.
- North, D.C. (1990). A transactions cost theory of politics. *Journal of Theoretical Politics* 2 (4): 355-367.

- Osborne, E. (2004). Measuring bad governance. *Cato Journal* 23 (3, Winter): 403-422.
- Podestà, F. (2002). Recent developments in quantitative methodology: The case of Pooled Time-Series Cross-Section Analysis. DSS Papers 3-02.
- Scully, G. W. (2002). Economic freedom, government policy and the trade-off between equity and economic growth. *Public Choice* 113: 77-96.
- Scully, G. W. & D. J. Slottje (1991). Ranking economic liberty across countries. *Public Choice* 69: 121-152.
- Shleifer, A. & R. W. Vishny (1993). Corruption. *Quarterly Journal of Economics* 108 (3, August): 599-617.
- Spiller, P. & M. Tommasi (2003). The institutional foundations of public policy: A transactions approach with application to Argentina. *The Journal of Law, Economics & Organization* 19 (2): 281-306.
- Spindler, Z.A. & X. de Vanssay (2002). Constitutions and Economic Freedom: An international comparison. *South African Journal of Economics* **70** (6, September): 1135-1147
- Spindler, Z.A. & X. de Vanssay (2003). Constitutional Design for a Rent Seeking Society: The voting Rule Choice Revisited. *Constitutional Political Economy* **14** (June): 95-105.
- Tufte, E. R. (1978). *Political Control of the Economy*. Princeton: Princeton University Press.

Appendix :

Table A1: Summary statistics such as year, number of observations, mean, standard deviation and range for the EFI dependent variable.

Table A1: Economic Freedom: Summary Statistics

Year	Obs	Mean	Std. Dev.	Min	Max
1970	53	5.790549	1.150242	3.420001	8.226358
1975	70	5.200599	1.123742	2.84809	8.264246
1980	102	5.123577	1.121525	2.42886	8.446427
1985	109	5.205988	1.227797	1.716709	8.238367
1990	113	5.490186	1.343119	2.431572	8.5312
1995	122	5.902125	1.287819	3.388494	9.048505
2000	122	6.34196	1.088458	3.369925	8.784595
2001	122	6.355179	0.9976643	4.04572	8.62571

Tables A2 - A5: Summary statistics for the EFI independent variable.

Table A2: Chief Executive: Summary Statistics (1975-2001)

Variable	Obs	Mean	Std. Dev.	Min	Max
<i>systemd</i>	695	0.4906475	0.5002726	0	1
<i>finitrm</i>	687	0.8122271	0.3908153	0	1
<i>military</i>	695	0.2071942	0.4055878	0	1
<i>execrlcd1</i>	678	0.3185841	0.4662713	0	1
<i>execrlcd2</i>	678	0.2743363	0.4465086	0	1
<i>execrlcd3</i>	678	0.339233	0.4737986	0	1
<i>execrlcd4</i>	678	0.0678466	0.2516682	0	1
<i>execrelg2</i>	729	0.0397805	0.1955774	0	1
<i>execrelg3</i>	729	0.0041152	0.0640619	0	1
<i>execrelg4</i>	729	0.0178326	0.1324338	0	1
<i>execspec</i>	698	0.1733524	0.3788231	0	1
<i>allhoused</i>	713	0.5119215	0.5002088	0	1

Table A3 Legislature: Summary Statistics (1975-2001)

Variable	Obs	Mean	Std. Dev.	Min	Max
<i>herfgov</i>	589	0.7998876	0.2797765	0.0019802	1
<i>herfopp</i>	443	0.5518399	0.2765121	0	1

Table A4: Electoral Rules: Summary Statistics (1975-2001)*

Variable	Obs	Mean	Std. Dev.	Min	Max
<i>liec</i>	694	5.516571	2.108205	1	7
<i>prd</i>	706	0.427762	0.4951049	0	1
<i>vote</i>	729	0.8203018	0.3841995	0	1
<i>Votef *</i>	729	0.079561	0.2707982	0	1
<i>checks</i>	656	2.643293	1.73008	1	15

*All the voting fraud takes place in the non-OECD countries.

Table A5: Federalism: Summary Statistics (1975-2001)

Variable	Obs	Mean	Std. Dev.	Min	Max
<i>auton</i>	667	0.047976	0.2138759	0	1
<i>stated1</i>	509	0.4223969	0.494427	0	1
<i>stated2</i>	509	0.2888016	0.4536513	0	1
<i>stated3</i>	509	0.2888016	0.4536513	0	1