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The Cost of Ruling

A Foundation Stone for Two Theories

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Abstract: It is a robust result that the average government (ruling a normal election period) in an established democracy loses about 2¼% of the vote. Three explanations exist: (i) The coalition-of-minorities theory. (ii) The median-gap theory. (iii) The grievance-asymmetry theory. These theories can all be calibrated to explain the fact. While (i) is difficult to justify, both (ii) and (iii) are integrated into other theories: (ii) is integrated into the »median-voter-complex« that rules out the existence of partisan cycles. (iii) is integrated into the »loss-aversion-complex« that via the grievance asymmetry provides a »deep-parameter« explanation of the cost-of ruling. It is also an important explanation for the partisan cycle model. We demonstrate that the two complexes are alternatives and argue that the loss-aversion-complex is more powerful.

I Introducing an underutilised fact[2)]

The ability and luck of governments varies, but - by definition - the average government must rule exactly as the rational voter should expect. The voters should hence be unsurprised and vote as before. So even if there is variation in election outcomes there should be no systematic cost of ruling ($\lambda = 0$). However, few facts are so robust in political economy as the one that it costs votes to rule. Below we shall show that the average costs are $\lambda \approx 2¼\%$.[3)]

The purpose of this article is to show that the cost of ruling constitutes a solid stone in the foundation for two theoretical complexes in economics and political science. The introduction has two subsections. The first defines the concepts discussed and shows how the cost of ruling relates to the Vote-function.[4)] The second gives a brief overview of the rest of the paper.

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1. The e-mail addresses of the authors are <pnannestad@econ.au.dk> and <mpaldam@econ.au.dk>. Maja Annette Hansen has been research assistant on the project. We are grateful to Torben M Andersen, Peter Raahauge and Peter Skott for discussions especially on the complex issue of loss/risk aversion. We also want to thank Randy Stevenson for a fine comment extending the median gap model, and other discussants at workshop 12 at the 27th ECPR Joint sessions of workshops in Mannheim.

2. This article generalizes work we have been doing for some time - both jointly and with others. It hence builds upon Paldam (1986, 1990), Paldam & Skott (1997) and in particular Nannestad & Paldam (1997).

3. For brevity we use two short-cuts: Sizes of political groups and parties are always measured in *percent of the votes cast*, even if it is not explicitly stated The term »*two-party systems*« also includes *two party-groups systems*.

4. We builds upon the theory on VP-functions (Vote- and Popularity functions). The literature on this approach is surveyed in Paldam (1981), Lewis-Beck (1988) and Nannestad & Paldam (1994), while the newest research is covered in Lewis-Beck & Paldam (1999).

I.1 Basic definitions and the relation to the VP-function

The two key concepts discussed are: (1) The *election outcome,* C_e. It is the first difference of the election result measured in percent of the votes cast. It sees elections as a sort of referendum on the pre-election government. (2) The *cost of ruling*, λ, is the expected outcome for the average government.[5)] It is estimated as the average C_e, so $\lambda \approx Avr(C_e)$. The definitions of the two variables are further elaborated in Table 1.

The election outcome is explained by a vote-function of the following type:

$$C_e = \lambda + F^e(\text{economic change}) + F^p(\text{political change}) + u, \quad (1a)$$

$$\text{where } F^e \text{ and } F^p \text{ are calibrated, so that the expectations } \eta(F^e) = \eta(F^p) = 0 \quad (1b)$$

Here F^e and F^p are the economic and political parts of the function. At present we shall not discuss F^e and F^p. Model 1 is calibrated so that these terms have zero average for the average government. That is, we take it that the VP-function is normalized so that the cost of ruling λ is simply the constant in the VP-function. This allows us to say that the variation around the average is due to economic and political changes as assessed by the voters. The reader will immediately note two problems:

Table 1. Definition of terms used

e	time of election considered. The election is at t = e
e-1	time of last election. G may be installed just after e-1 or later
G_e	government ruling up to e. G may be one or more parties
L_{e-1}	the vote (in % of the votes cast) for (the parties of) G_e at election e-1
V_e	the vote (in % of the votes cast) for (the parties of) G_e at election e
C_e	$= V_e - L_{e-1}$ is the **election outcome**, measured as the change in the vote for G_e
η	Operator for expectation. It may be assessed as the average of the past: that is $\eta(x) = Avr(x)$
λ	**cost of ruling**: minus the expected (or average past) election outcome $\lambda = -\eta(C_e) \approx -Avr(C_e)$
$v = s^2$	variation and standard deviations of C_e, ie, $v = \eta(C_t + \lambda)^2 = Var(C_e)$

Note: $L_{e-1} = V_{e-1}$ if G ruled before last election (e-1), while $L_{e-1} \neq V_{e-1}$ if G changed between e-1 and e.

Firstly, most VP-function estimates are not calibrated as required by (1), so the constant estimated contains λ + the calibration fault. This should be kept in mind, when the reader looks at his favorite VP-function estimates and finds that the constant deviates from our estimate of $\lambda = 2¼$.

Secondly, λ is supposedly something accumulating over time. It has been claimed that there is a cycle in λ during the election period. The brief subsection II.4 discusses this possibility. We shall take the cost of ruling to deal with an election period of »normal« duration, as will be further discussed.

I.2 Content: a brief readers guide

Section II presents an analysis the costs of ruling for 19 established democracies over the last 50 years. As the empirics of the cost of ruling was the subject of Paldam (1987, 1991) we shall be brief. The variation of election outcomes is large, so the λ-data can be generated by many processes. Consequently we apply the principle of Occam's razor and ask: What is the simplest process that can generate these data?

5. Many governments are coalition governments. We shall not discuss how parties in a coalition share the costs.

We shall demonstrate that the λ-data are consistent with the simplest possible hypothesis. With a few easily explained exceptions, they can be generated by the very *same distribution*, as listed in Table 2.Our key empirical claim is that λ does not depend upon the election system, the party-structure or the size of the country.

Table 2. The empirical cost-of-ruling result

R1	The average government in an established democracy, ruling a normal election period, suffers a loss of 2¼% of the votes.
R2	The standard deviation is 4½% under parliamentary systems and twice as much in presidential systems

The exceptions mentioned under (R1) are four: (E1) λ is larger in very small countries, see II.1. (E2) λ is different for governments ruling briefly, see II.4.[6)] (E3) For newly established democracies it may take half a dozen elections for the party-system to stabilize. While this happens there is likely to be big variation in C_t (see Fidrmuc, 1999). (E4) In countries with large economic variability, C_t also becomes more volatile, and λ *becomes larger*. Compare here the findings of Gavin & Hausmann (1998) showing that economic volatility is relatively large in Latin America, with the large numbers for λ in the Latin American countries found in Remmer (1991).[7)]

However, as long as we deal with a well-established democracy, with a stable economy, λ is remarkably constant. (R1) and (R2) will be used to argue two theoretical points (T1) and (T2):

(T1) The cost of ruling has much greater explanatory power than hitherto recognized.

(T2) As we are dealing with an unusually stable constant, we would like to explain the cost of ruling by something going beyond institutions, ie by a *»deep parameter«* of human behavior.

Three theories try to explain the cost of ruling: (i) The *coalition-of-minorities* theory. (ii) The *median-gap* theory. (iii) The *grievance-asymmetry* theory. Section III presents these theories and argues that (ii) and (iii) are the most convincing in the sense that they are integrated into two theoretical complexes: the *median-voter com*plex the *loss-aversion complex*, respectively.

Section IV further discusses the loss-aversion complex, in a broader setting that also includes the grievance asymmetry. *The loss (or risk) aversion* of the average individual is the »deep parameter« explaining the cost of ruling in this complex. Section V shows that the cost of ruling simplifies political business cycle theory and makes the observed facts of a partisan cycle easier to understand. Section VI turns to the alternative: the median-voter-complex. It also shows that the loss-aversion complex provides an alternative explanation of most of the facts normally explained by the median voter theorem and the minimum winning coalition theory. The loss-aversion explanation is thus shown to have the advantage of parsimony. By

6. Several other small qualifications also exist. Under »big coalitions« of (nearly) all parties the voters can go nowhere else so λ declines. Some governments have - more or less formal - coalition partners, who are not members of the government. Here the distinction between governments and opposition blurs a little, etc.

7. Some of the result listed under (E4) might be due the (E3). Some Latin American countries have experienced frequent switches between democracy and dictatorship. So perhaps their party systems are less established. However, it is (often) interesting to note how quickly the old party system reemerge after a period of military rule.

Occam's Razor it is a superior explanation.

Finally Section VII asks if we have made extravagant claims, but concludes by making an even stronger claim.

Table 3. The 282 elections covered - some statistics

	Country	Type of Election	N	Statuary period	Average period	Average C_e	Standard deviation	Normality P-value
1	Australia	House of Representatives	21	36	30.2	-1.95	4.38	71%
2	Austria	Nationalrat	15	48	39.1	-1.71	5.22	8%
3	Belgium	Chambre des Representants	15	48	29.3	-3.70	4.47	14%
4	Canada	House of Commons	16	60	38.1	-4.02	9.78	33%
5	Denmark	Folketinget	21	48	25.5	-0.77	4.98	21%
6	Finland	Eduskunta	14	48	17.4	-3.10	3.68	27%
7	France	Assemblée Nationale	14	60	25.3	-3.27	8.87	6%
8	Germany	Bundestag	13	48 d	41.7	0.67	5.06	59%
9	Iceland	Alting	15	48	34.6	-4.95	4.72	83%
10	Ireland	Daíl Éirann	15	48	37.0	-3.73	4.37	7%
11	Italy	Camara dei Deputati	12	60	19.8	-1.88	5.41	10%
12	Japan	House of Representatives	17	48	26.9	-2.65	5.23	19%
13	Luxembourg	Chambre des Deputés	8	60	59.1	-5.39	3.37	29%
14	Netherlands	Tweede Kamer	15	48	34.8	-2.46	6.90	6%
15	New Zealand	House of Representatives	16	36	33.6	-3.80	5.14	73%
16	Norway	Stortinget	13	48 nd	39.4	-0.42	3.72	83%
17	Sweden	Andra Kammaren	17	48/36/48	32.7	-2.12	3.08	52%
18	UK	House of Commons	14	60	42.9	-1.91	4.20	34%
19	USA	President	12	48 nd	46(48)	-2.50	10.99	76%
All governments			282		33.5	-2.54	5.97	**0,00%**
Governments lasting less than 1 year			37			-0.95	6.33	
Governments lasting between 1 and 2 years			37			-0.88	4.89	
Governments lasting between 2 and 3 years			68			-2.50	4.08	
Governments lasting between 3 and 4 years			97			-2.49	6.23	
Governments lasting more than 4 years			43			-6.12	7.21	

Note: Statuary and average periods are given in months. Jarque-Berra-test (skewness/kurtosis) is used testing for normality.

II A look at the facts: The distribution of election outcomes

The statistics for election outcomes in 19 developed democracies for the last 50 years are compared in II.1. For each country we have a »country-set« of 8 to 21 election outcomes. The standard deviations of the country-sets are about twice the mean. For the small samples of each country-set there should therefore be considerable variation in the calculated mean and standard variation.

Subsection II.1 shows we are unable that most country-sets are random draws from the same *general distribution*. II.2 takes a further look at the distributions of election outcomes. II.3 looks at the development of λ over time. Once more λ turns out to be (almost) constant, though with a highly significant drop in the 1990s. Finally II.4 looks at λ for governments ruling shorter than a normal election period.

II.1 A look at data for 19 countries: are election outcomes drawn from the same distribution?

The extreme right hand column in Table 3 tests for normality. It appears that normality of the election outcomes can be rejected for none of the countries, though it gets close in a few cases. One should reject normality in 1-2 cases when performing 19 (seemingly independent) tests at the 5% level, so we conclude that the distributions are so »normal« that we can use standard tests based on normality.

Figure 1. The means and standard deviations of the cost of ruling for the 19 countries of Table 3

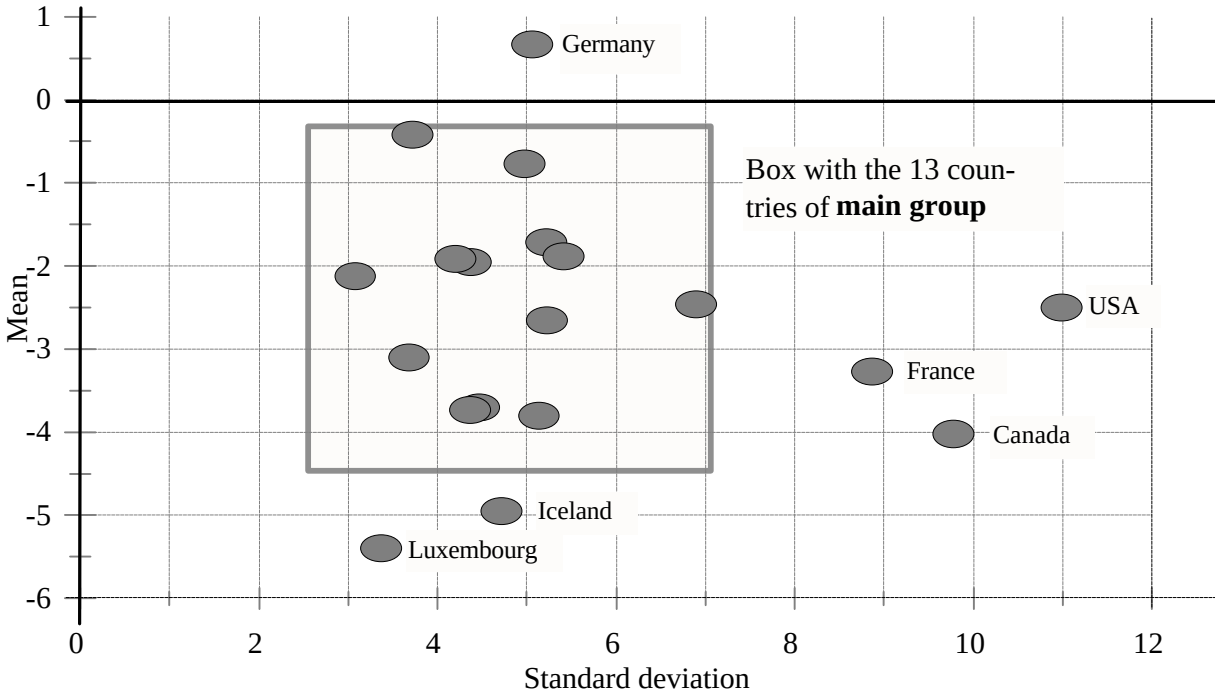


Figure 1 displays the averages and standard deviations for the 19 countries of Table 3. From the figure one gets a strong impression that the election outcome result is normally distributed with much the same mean and variance for **a main group** of countries (as is proved in Table 4). We have placed the 13 countries of the main group in a box in the middle of the picture. The figure points to some exceptions:

(e1) The average deviates in three cases. It is high (positive) in Germany and low in the two very small countries: Iceland and Luxembourg. These deviations are insignificant in Table 4.

(e2) The variance is larger in the USA, Canada and France. These deviations are significant in Table 4.

Table 4. Tests for homogeneity of mean and variance

Countries	Group	N	Same variance			Same mean		
			χ^2	df	p-value	F	df_1, df_2	p-value
13	Main group of	204	13.8	12	31%	0.87	12, 190	58%
19	All countries	282	64.7	18	0.0%	0.93	18, 262	55%

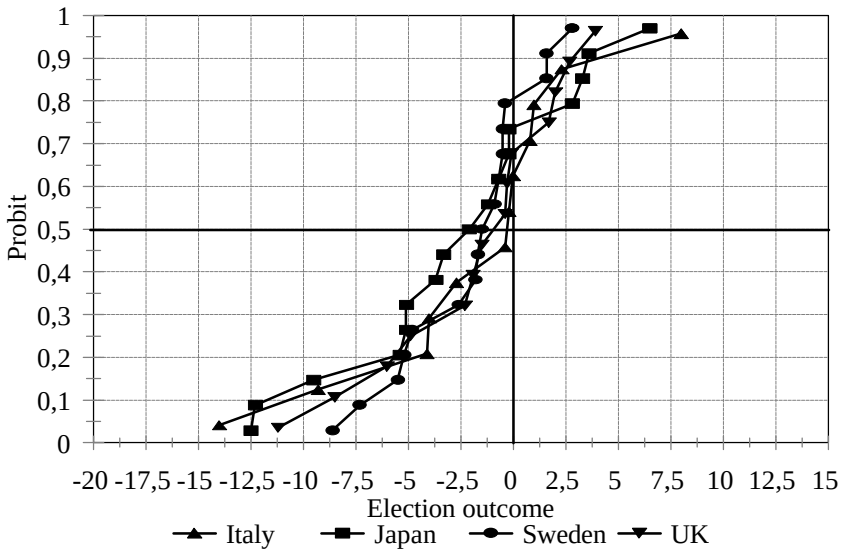
Note: The variance homogeneity test is the Bartlett test, while the mean homogeneity test is the classical F-test. Strictly speaking one can not test for mean homogeneity when variance homogeneity is rejected. Note from the right hand column in Table 3 that we can not reject normality in any of the country-samples, though non-normality is found when all samples are merged.

Table 4 performs the standard test for homogeneity of the county samples. For the 13 countries in the main group we cannot reject that the observations are from the same distribution - in fact, the two p-values are so close to 50% as one could hope for. The two tests are quite powerful with more than 200 observations, so it is an amazing result considering that the group contains such countries as different as Sweden, Japan, UK, and the Netherlands.

It is also interesting that we cannot reject that the means are the same, even when including all 19 countries. So the three countries with deviating means do not deviate significantly from the rest. However, the three countries with high variance deviate too much. Even including *one* makes the test reject variance homogeneity at the 1% level.

We have thus demonstrated the empirical *cost-of-ruling* result given already in Table 2 above. These are remarkable results, when considering the differences between the countries in size, in election systems, party systems, etc. Clearly, we are dealing with *very basic facts*.

Figure 2. Typical cases four specimens: Italy, Japan, Sweden and UK



II.2 The distribution of election outcomes

To further study the distributions of the election results, we have analysed the distributions of the 19 country-sets, and the joint distribution of all 282 election results graphically by probit diagrams.

Figure 2 shows 4 typical cases for the countries in the main group. They are chosen to be the most »different« based on a priory knowledge. Nevertheless, the probit curves for the four countries intersect many times. It is no wonder that the tests in Table 4 point to no difference in the 4 distributions.

Figure 3. The three countries with large and small averages: Iceland Luxembourg and Germany

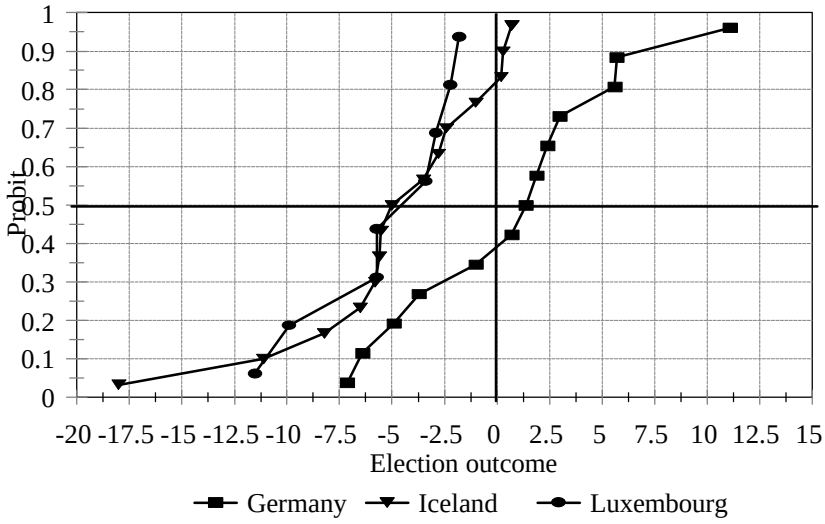
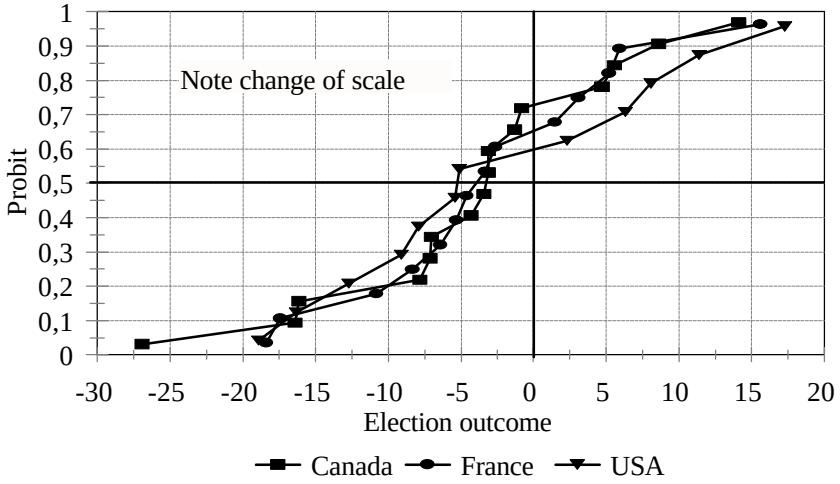


Figure 3 shows the three countries with the most deviant averages (e1). It is clear that the variance (slope) of the 3 country-lines are the same as the one of the countries in the main group, however we need the tests to know that the means are no more different than they should be by random draws.

Figure 4 shows (e2) the three high variance countries (note change of scale). They appear to have the same average (that is intersection with the bold 0.5-line) as the countries in the main group. It appears that Canada has a section in the middle with the standard slope, so maybe Canada is the least deviant of the three countries - however Canada has experienced the most extreme of all 282 elections in our sample.

Figure 4. The three countries with a large variance: Canada, France and USA

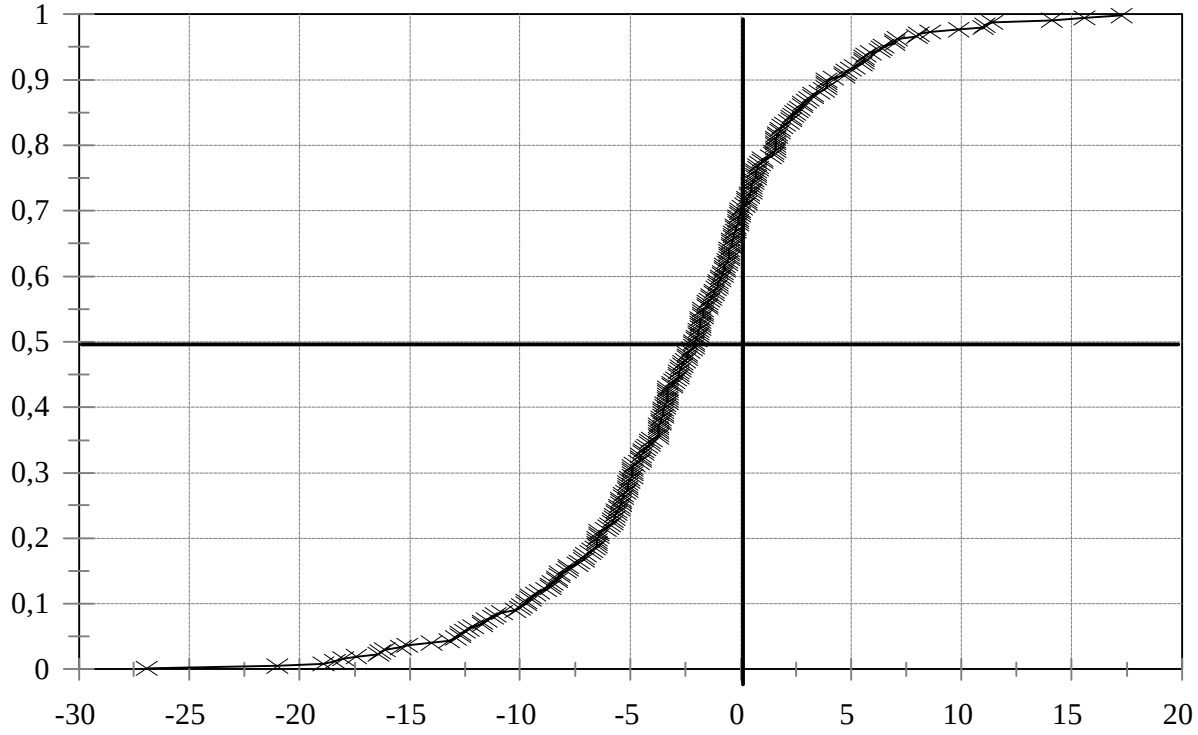


When all the 19 countries are considered, it appears that there are typically a few extreme elections in each country. This suggests that the high variance countries may only differ by having relatively many extreme elections. We have therefore merged all 282 election outcomes in one string and analysed the joint distribution, on Figure 5.

It shows why the 282 observations strongly reject normality in Table 3. The probit curve looks perfectly linear in the middle part of the distribution, ie, in the interval $C_t \in [-2¼ \pm 4]$. However, the (symmetrical) tails of the distribution show strong non-normality. In fact, the tails are *quadratically normal* as demonstrated in Paldam (1986) who interprets this observation by a *two-type theory of elections:*

(i) Most elections are *normal elections*, determined by a sum of many issues. It is hence reasonable that these elections are normally distributed following the same normal distribution. (ii) A few elections are *extreme elections,* dominated by one issue, where the outcome is quadratically normal.

Figure 5. Distribution of the 282 election outcomes



We have looked at some of the extreme elections and think that the two-type theory is basically true. However, it is not central to our main argument, so it shall not be further discussed at present.

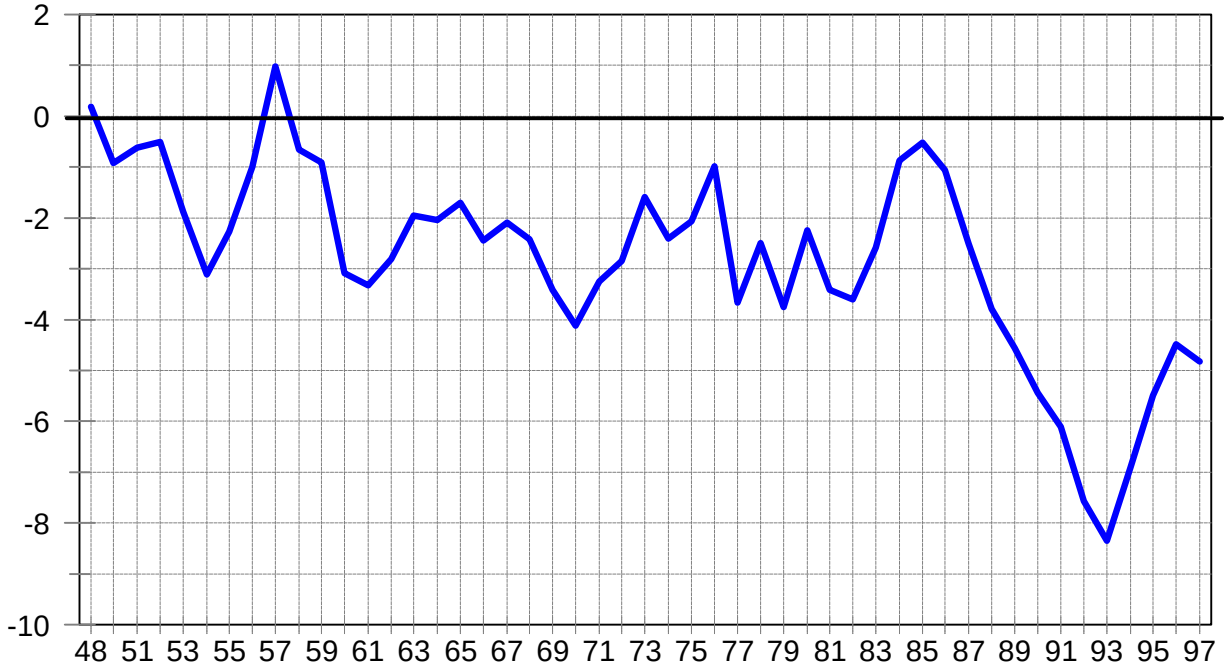
II.3 How stable is C_t over time?

Once we know that election outcomes are stable across countries, we can merge all the elections and study if they are stable over time.[8)] The average number of elections per year in the 19 countries is 6. Figure 6

8. This subsection builds upon Høst & Paldam (1990) searching for international »political right/left waves«. That is, casual observers (journalistic) often claim that voters throughout the West all turn to the left and sometimes to the right. The article makes a test for this possibility based on a merged time series for 17 countries, where the governments were classified into left and right. No systematic shifts in political orientation were found.

shows how the cross-country average $Acc(C_t)$ has evolved from 1948 to 1997. The bold line shows the 3-years moving average: $Mcc(C_t) = (Acc(C_{t-1}) + Acc(C_t) + Acc(C_{t+1}))/3$.

Figure 6. The time path of the cross-country cost of ruling (λ)



Note: Each point is averages over three years (see text) points are placed above the mid interval.

The curve seems perfectly trendless from the start till the late 1980s. Then it moves downward. While the cost-of-ruling used to be around -2%, it is now around -5%. Parts of this change appears to be due to a few spectacular losses, but the trend is visible in the data from nearly all 19 countries.

It is likely that the change is connected to the economic changes in the 1990s, but we shall not at present attempt to explain the downward shift in the cost of ruling in the last decade.

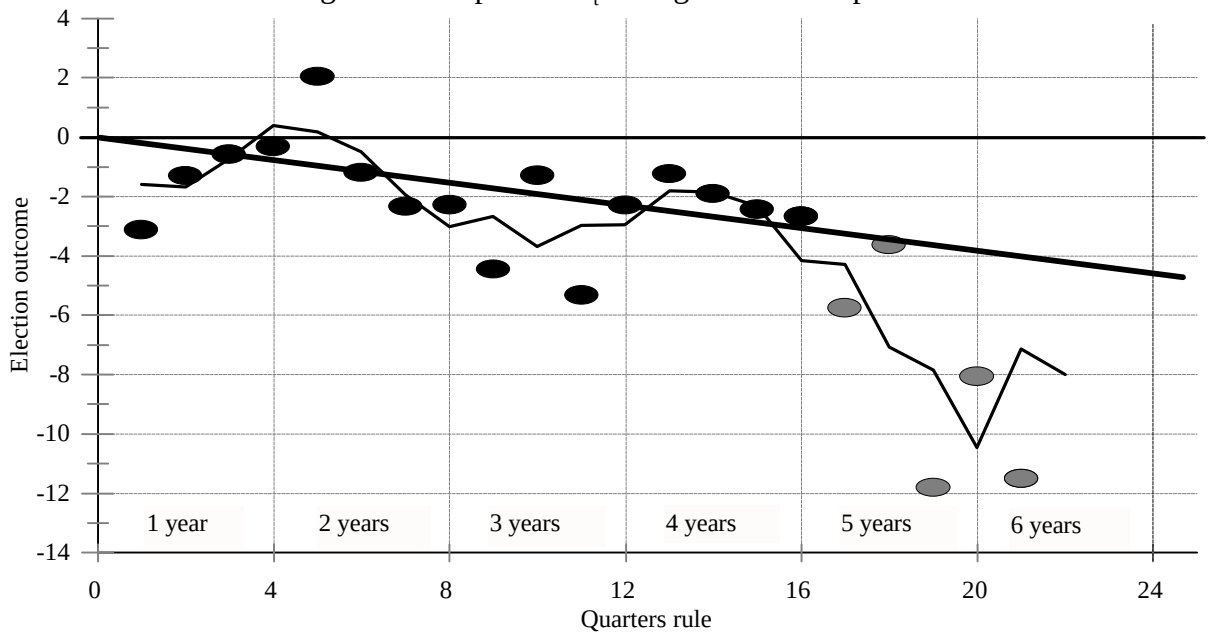
II.4 The election cycle in C_t over the election period

From Table 3 we note that a great many governments last less than a full election period. In some cases because the government acquiring power after an election has such a small majority that it calls a snap election. In other cases because the government came into power late in the election period after a resignation of the old government.

Figure 7 shows the path of C_t during the election period based upon how long governments rule before the election. The figure shows considerable variation, but there are some signs of a »honeymoon« effect for a new government. Normally it is said to be the first 100 days, but in our data it rather comes after ½ a year. Also, the few governments lasting more than 4 years - in the few countries where this is possible - have unusually large losses.

The average straight line through the points is drawn to assess the annual slope (ie the annual cost of ruling). It is about 0.75%, but a little less - about 0.66% - if we consider only »normal« elections in the countries of the main group. For a standard election period of 3½ year 0.66% per year adds up to 2¼%.

Figure 7. The path of C_t during the election period



Note: The round points are the average observations, and the solid curve is a moving average line (for three points at a time). We have also included a straight line assuming a constant loss per quarter. Note that the constitution of few countries only allows governments to rule more than four years, so the last five points to the right are based on much fewer observations than the other points.

The figure is based upon the data in Table 3, but they are further subdivided. Note that there might be a counter-causality bias. When governments have a choice, they are most likely to call an early election if they stand well at the polls. However, at the statuary limit governments have to call an election irrespectively of their standing in the polls. The counter-causality bias will thus increase C_t early in the period and decrease C_t late in the period, making the cyclicality larger.

Also, the graph is calculated including the extreme elections, so for the 3-4 years of a normal government period the average is a bit larger than in our conclusion (R1).

III Three explanations of the cost of ruling - looking for *the* deep parameter

Three theories have been made to explain the cost of ruling: (i) The coalition-of-minorities theory. (ii) The median-gap theory. (iii) The grievance asymmetry theory. We have demonstrated that λ is unusually constant. Therefore it must be explained by something that is likely to be unusually stable as well. Preferably we want to build upon the »rock« of a deep parameter in human behavior.

III.1 (i) The coalition-of-minorities theory ⇒ a constant »sucker-fraction«

The theory was sketched in a short paragraph in Mueller (1970) in the article presenting the first popularity function.[9)] To our knowledge it has never been fully developed, but has remained a loose idea.

9. The theory goes back to Downs (1957; Cpt 4.II.B). Dawns' theory is a bit different as it serves another purpose. It is thus a theory that can be developed is several directions. We shall develop it in the direction making it stand out as much as possible from the other two theories.

The idea is that an opposition party can forge a coalition of enough groups to reach a majority by giving inconsistent promises. When the opposition gains power, it has to make actual choices. Decisions have to be more consistent than Promises. Hereby more and more of the true preferences of the party is revealed. One group after the other becomes disappointed, and turns to the opposition that is busy building an alternative coalition.

There is a complex theory implied in this argument. The theory builds upon two ideas: (a) the group idea, (b) the idea that over-promises are revealed by ruling. The theory only needs (b), while (a) is an axillary idea. The group-idea (a) implies some kind of lumpiness in the loss of ruling. It generalizes across countries only if the structure of the relevant groups is the same across countries and over time. The idea (a) therefore appears far-fetched.

Idea (b) that over-promises are revealed by ruling is more substantial and complex. Four variables are needed to discuss this idea: Popularity Π, perceptions Φ, policies P and economic outcomes Z. A party has a declared policy P, but its true policy is revealed, when it actually rules. We know that people are mostly interested in outcomes. They know the outcome from the declared policies P and from experience $\underline{Z}_L$, where L is a lag, showing how recent the experience is. Popularity is a function of the perceived outcome, $\Phi(Z) = \Phi(\underline{Z}_L, P)$:

$$\Pi = \Pi(\Phi(\underline{Z}_L, P)) \qquad (2)$$

The *true policy* Z is the smallest in the sense of popularity Π, thus $\Pi(P) > \Pi(Z)$. All parties try to declare policies with large $\Pi(P)$'s, to obtain a $\Phi(Z) > Z$. The idea of election promises is that there exists an »area« Ω for P »above« Z where:

$$\text{For } P \in \Omega,\ \Pi(\Phi(\underline{Z}_L, P)) > \Pi(Z) \qquad (3)$$

Voters try to see through P to the true Z. When parties rule, $\underline{Z}_L$ converges toward Z, but when they are in opposition, $\underline{Z}$ becomes distant, and voters have only P to consider. Voters have *rational expectations* if:

$$Z^* = \Phi(\underline{Z}_L, P) = Z + \epsilon, \text{ where } \epsilon \text{ is white noise} \qquad (4)$$

The longer a party has been in the opposition, the more uncertain is the assessment ($\partial|\epsilon|/\partial L > 0$), but it is not obvious that the central assessment should change ($\partial Z^*/\partial L = 0$). The idea (b) that over-promises are revealed by ruling consequently turns into the claim of a (small) irrationality:

$$\textit{The »constant sucker-fraction« theory}: \partial Z^*/\partial L = \mu > 0 \qquad (5)$$

The constancy of λ here means that μ is the deep parameter of human behavior: *A constant fraction of all populations is gullible*. You cannot fool all the people all the time, you can only fool 2% of the people every fourth year. Note that this is almost rationality: 98% of people remains undeceived.

It is surely politically correct to assume that »naivety« is evenly distributed across all countries. However, no other finding suggests a constant »sucker-fraction« across countries and time. If this is really such an important constant, it is strange that it has not emerged before.

III.2 (ii) The median-gap theory

This theory is worked out in Paldam & Skott (1997) and Stevenson (1999). It considers a country with a

one-dimensional issue space from left to right. It has two parties Left and Right. The median voter has the position M in the issue-space. This assumption is a little - but not very - unrealistic. Nannestad (1989) analyzes the issue-space in the complex Danish party-system. Even here voters do order issues and parties on a left-right scale to a surprising extent, and parties and journalists all tend to recognize this order.

Hotelling (1929) shows that with such a set-up Left and Right come to fight over the vote of the median voter. They hence reach the same policy M - the choice of the median voter. Hereby hangs a paradox: Why would anybody vote, if the two parties have exactly the same policy? In order to be distinguishable there must be a certain *visibility gap*, γ, between the parties. Party Left, converges to policy $M-\gamma/2$, while Right converges to policy $M+\gamma/2$. The two policy-points divide the voters in three groups:[10)]

Left voters L prefer policies in the closed interval	$[-\infty, M-\gamma/2]$
Medium-gap voters Γ prefer policies in the open interval	$]M-\gamma/2, M+\gamma/2[$
Right voters R prefer policies in the closed interval	$[M+\gamma/2, \infty]$

Voters in group L can do no better than to vote for Left, and voters in group R can, likewise, only vote for Right. These voters do not get their desired policy, but they obtain a »gain γ« in their direction if their preferred party wins. If γ is large enough, they bother to vote.

The Γ-group is surely smaller than the other two groups, but the distribution is likely to be »fat« around the median, so it probably holds 5-10% of the voters - let us say 7%. The voters are more interested in outcomes than in policies, but we assume (see V.1 on policy efficiency under rational expectations) that the policies gradually change the outcomes.

The intuition of the median-gap-model is now that the average outcome is closer to the ideal of most of the centrist voters if power changes between the parties at every election. In Paldam & Skott (1997) the model is solved in a case that appears as »reasonable« as possible. It is shown that the middle third of those in the Γ-group will change at every election. As $\gamma/2-\gamma/3 = \gamma/6$ the result becomes:

Γ-voters in the interval $]M-\gamma/2, M-\gamma/6]$ should stick to Left together with the Left voters
Γ-voters in the interval $]M-\gamma/6, M+\gamma/6[$ should change at every election
Γ-voters in the interval $[M+\gamma/6, M+\gamma/2[$ should stick to Right together with the Right voters.

Hence, if Γ holds 7% of the voters, $\Gamma/3 = 2.3\%$ will change at every election from the government to the opposition. Clearly, the model can easily be calibrated to explain the observed fact. Note also that the model does demand no irrationality to work.

Here it is more difficult to see a deep parameter that is likely to generalize. The constancy of λ must mean that a constant fraction - $\Gamma/3$ - of the voters lies in the interval $]M-\gamma/6, M+\gamma/6[$. The key constancy thus boils down to $\Gamma = \Gamma(\gamma)$ being constant.[11)] We have been able to think of no reason why $\Gamma(\gamma)$ could be so constant as to produce the observed robustness in λ.

The model also explains how the cost of ruling evolves over the election period as analyzed

10. Remember that we take the groups to be measured in percent of the voters voting.

11. The exact expression making $\Gamma = \Gamma(\gamma)$ constant is complex. Roughly, γ has to decrease corresponding to the »fatness« of the distribution around M. Maybe there is a relation a bit like this, but we see no reason to believe that it can be sufficiently close to the desired as to make Γ stable.

empirically in II.4. It is possible to calibrate the model to explain a broad range of developments in λ over the period, as shown by Stevenson (1999).

III.3 (iii) The grievance-asymmetry theory

Consider the effect on the popularity of the government of a symmetrical change up and down of an economic variable. A grievance asymmetry means that the effect of the positive change is smaller than the one of the negative change. The mechanics of the grievance asymmetry, ρ, is given in the Table 5.

Most research in the VP-function disregards the possibility of a grievance asymmetry. That is, it estimates equation (1) but not (2) of the table. However, nearly all studies, which have looked at the possibility (since Mueller, 1970), have found it. Recent large scale micro-based studies (Nannestad & Paldam, 1997, and Price & Sanders, 1994) found a considerable asymmetry (see however Lewis-Beck, 1988). In the terms of Table 5 the typical finding is that $\rho = 1/3$, so the effect of an economic improvement is only 1/3 of the effect of the corresponding deterioration.

Table 5. The mechanics of the grievance asymmetry

(1) $C_t = a + \alpha E_t + ...$ is a V-function used for estimating the effect of the economic variable E_t on changes in government popularity C_t. *Normally* E is in first difference.			
Split E_t into an improvement, E_{it}, and an deterioration, E_{dt}, using z as the splitting criterion. *Normally* z = 0. $E_{it} = E_t$ if $E_t > z$ and $E_{it} = z$ if $E_t \leq z$. $E_{dt} = E_t$ if $E_t < z$ and $E_{dt} = z$ if $E_t \geq z$.			
(2) $C_t = a + \alpha_i E_{it} + \alpha_d E_{dt} + ...$ is the split version of the V-function			
α	effect of economic variable E	$\alpha = (\alpha_i + \alpha_d)/2$	provided z = 0
α_i	effect of improvement E_i	$0 < \rho < 1$	the ρ interval considered
α_d	effect of deterioration E_d	$\alpha_i = 2\alpha\rho/(1+\rho)$	α_i calculated from α and ρ
ρ	$= \alpha_i/\alpha_d$ grievance asymmetry	$\alpha_d = \alpha 2/(1+\rho)$	α_d calculated from α and ρ

Note: If E is not a first difference series and z is not zero a few trivial amendments have to be made to the formulas at the bottom right cell of the table. Note that we disregard the possibilities that $\rho < 0$ or $\rho > 1$.

When the average government rules as expected, some variables improve and some deteriorate. If the government tries to maximize the welfare of the voters and hence the V-function, the variables improving should have the same average weight in the function as the variables deteriorating. If the V-function was symmetric, the government would receive exactly the same vote as last time, but with a grievance asymmetry the government loses.

Table 6. An example showing some orders of magnitudes

The true Vote-function is: $\Delta V = 0.67[\Delta x_1 + \Delta x_2 + \Delta x_3 + \Delta x_4]$, so that $\alpha = 2/3$. The x'es are the economic variables
The grievance asymmetry is $\rho = 1/3$: $\alpha = 2/3$ splits into $\alpha_i = 0.3$ for an improvement and $\alpha_d = -1$ for a deterioration
The two first variables improve 1 percentage points and the last two deteriorate correspondingly: The effect is: $\Delta V = +0.3[1\% + 1\%] - 1[-1\% - 1\%] = 2.6\%$

Note: The VP-function in this table is not calibrated as per equation (1). When so calibrated λ will appear as the constant. However, with the grievance asymmetry integrated the formal theory becomes a bit complicated.

The true V-function has proved elusive, but some orders of magnitudes have been found allowing us to make a few »guesstimates«. Table 6 gives an example assuming a simple linear Vote-function, with reasonable orders of magnitudes. It appears that it can produce an average cost of ruling effect very much as observed. So the grievance asymmetry theory can easily be operationalized and calibrated to explain the observed fact of the cost of ruling. However, it predicts that the path of λ over the election period is linear, so here it is less flexible than the median-gap model.

The main problem with this model is that the robustness of the empirical cost of ruling depends upon the V-function having some basic robust properties. It does not matter if the coefficients change, but their sum has to stay reasonable stable. The mechanism is robust to country-size, party-system, etc.

To turn the stylized fact that a grievance asymmetry exists into a theory, we have to explain it in a way that is sufficiently close to the bone to be believable. In the next section we shall argue that the grievance asymmetry is the logical consequence of the well known - and theoretically well integrated - fact that the average voter has a certain *loss aversion*. Section IV will argue that there is lot of evidence and theory pointing to loss aversion as a *deep parameter* in human behavior. We have therefore explained the cost of ruling by something so basic that it is reasonable to imagine that it is independent of the concrete institutions of the countries.

III.4 Summary of the three theories

Our discussion so far has shown that all three theories have weaknesses and strengths. In our opinion both (i) and (ii) suffer from the main problem that the »parameter« necessary to create the empirically observed stability of λ seems to be too weak a reed to carry such a burden. Only (iii) builds upon a suitable deep parameter. Furthermore (iii) is linked to a complex of other theories and findings.

Table 7. Strengths and weaknesses of the three theories

Theory	(i) Coalition of minorities	(ii) Median-gap	(iii) Grievance asymmetry
Deep parameter	Constant sucker fraction	$\Gamma(\gamma)$ is constant	Constant loss aversion
Suitability	Unconfirmed	Unconfirmed, unlikely?	Fine candidate
Other strengths	Election promises common	Consistency, elegance	Links to other theories
Other weakness	Demands (small) irrationality Under-theorized	Needs pre RE-economics & One dimensional issue space	Needs stable VP-function
Exclusivity	Might work with (ii) or (iii)	Not (iii)	Not (ii)

Finally, the bottom row of the Table previews results to be discussed. It will be shown that theories (ii) and (iii) are mutually exclusive, while (i) may be true alongside either (ii) or (iii).

IV Economics: the grievance asymmetry and loss/risk aversion complex

One of the controversies in the VP-function theory deals with the prospective/retrospective voting issue. Do people react to past losses and gains or to expected future ones? Large parallel discussions deal with *loss aversion* (for past events) versus *risk aversion* (for expected future ones) - though most of the writers fail to see the connection. Table 8 defines a relevant terminology as regards risk aversion.

Table 8. The logic of a risk aversion

Agent A receives an income flow, y(t), where the average $a = \eta(y) \approx Avr(y)$ and the variance $v = s^2 = \eta(y - \eta(y))^2 \approx Var(y_t)$. The agent obtains utility $U_A(y_t)$ from the flow.
We consider two marginal utilities $U_a = \partial U_A/\partial a$ and $U_v = \partial U_A/\partial v$.
$U_a > 0$. Always true, at least in the short to medium run.
$U_v < 0$. *Risk aversion.* Normal situation with a trade-off between a and v. $U_v = 0$. *Risk neutrality*. People care about a only. $U_v > 0$. *Risk loving*. People are willing to pay for risk. Known to afflict a small minority.

IV.1 Loss aversion or risk aversion - general

There seem to be (at least) three literatures: (L1) - (L3) dealing with the issues of loss and risk aversion:

(L1) *The experimental literature* looks at *loss aversion*, by comparing peoples reaction to gains and losses in various situations. See here the survey by Kahneman (1994) and for alternative evidence Dunn (1996). Here large asymmetries are found, much in line with our results.

An interesting consequence of these results is that peoples assessments of a change from situation A to another situation B comes to depend upon the path followed by the movement from A to B - a property known as »framing«. It is not only the result that matters, but the »variability« of the way by which the result was reached also matters.[12)]

When we now turn from the past to the future it is known that the average human has risk aversion as regards most of his income.[13)] They are willing to pay some Avr(y) to insurance companies and in taxes for getting a smaller Var(y) - that is to get »security«. In the same vein, we know that many people prefer to work in the public sector where Avr(y) is smaller, but more secure - that is, Var(y) is smaller. It appears that this is the forward looking version of the framing result. The value of the (expected) outcome depends crucially of the »variability« of the way by which it is reached.

The empirical literature on risk aversion falls into at least two fractions with little connection and embarrassingly different results.[14)] They are contrasted in the classical article by Mehra & Prescott (1986):

12. It has been argued that loss aversion goes against basic assumptions about rationality, and it would therefore (perhaps?) be better if we could base our findings upon the related (forward looking) concept of risk aversion.

13. In passing we also note that the developed world has plenty of financial institutions that make a fine living from pooling risk. People are willing to pay something for having the financial risk they run on their pension funds (and other savings) reduced.

14. There is also a literature dealing with the main deviation from risk aversion: Many people like to run risks with a small fraction of their income, so all (?) countries have lotteries (with very negative sums) where people can run a high risk for a small part of their income. Many of the most famous business people have had a period of their life

(L2) *The growth theory literature* defines risk aversion as a curvature coefficient for the utility function. It can be estimated indirectly by calibrations experiments with long run growth models. The main results found are that the risk aversion is small, even though it is very significant. See Lucas (1987) for a discussion.

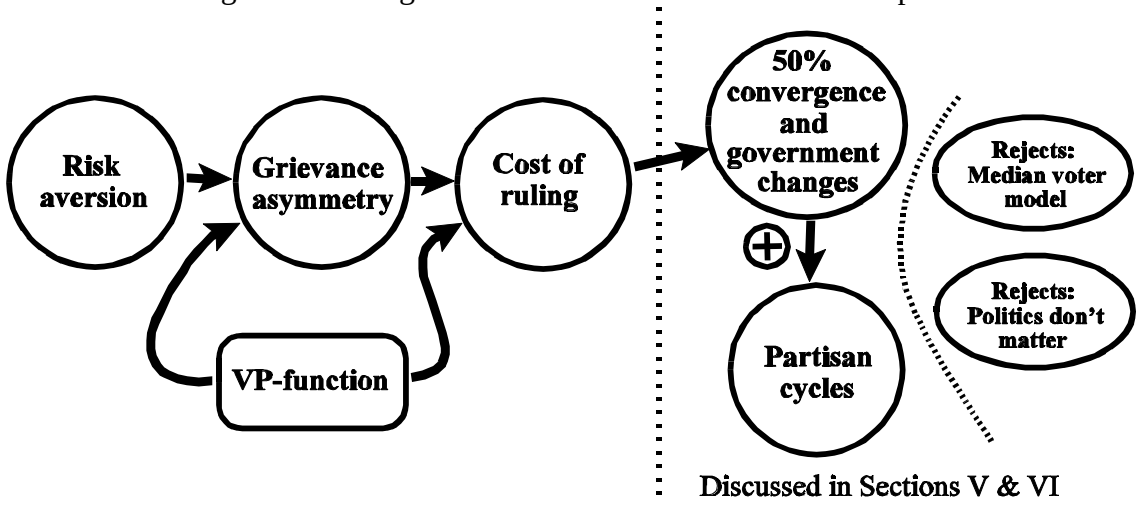
(L3) In *the financial literature* it is well known that the average yield on (risky) equity shares has been found to consistently exceed the yield on (secure) government bonds, by perhaps 50% in real terms, so here a rather large risk premium appears, much in line with our results. See Kocherlakota (1996) for a new survey.

We note that two of the literatures (L1) and (L3) reach empirical results very much in line with the implied asymmetries results, while (L2) poses a problem.

IV.2 The grievance asymmetry and loss aversion

The literature on VP-functions has (as mentioned) tried to determine if voters are *retrospective* or *prospective*. We know of about 50 studies - including several of our own - which have found data allowing them to try distinguish (see Nannestad & Paldam (1994) and Lewis-Beck & Paldam (1999), where 10 of the 18 studies look at this problem). Most of these attempts have concluded that voters are retrospective, but the difference is typically small, as voters form largely static expectations. If this is the case there is no difference between risk and loss aversion.

Figure 8. The logical structure of the loss-aversion complex



We are hence dealing with a theory having the logical structure given in Figure 8, where for the time being we disregard the part to the right of the dotted line. A VP-function with loss aversion causes a grievance asymmetry, and a grievance asymmetry causes a cost of ruling. The cost of ruling becomes stable given that the VP-function is sufficiently stable. Note that the logic of this whole theoretical structure does not depend upon the election system. Also, the top-part of the model (the three round boxes) does not depend upon

where they played at a high stakes to build up their »business«, but they have later consolidated their holdings. People, who throughout their life love risk are known as *compulsive gamblers.* It is a well known mental problem afflicting a small minority.

the party-structure.

The only weak part of the complex is the VP-function (the rectangular box). It is dubious that it is sufficiently stable to give the necessary stability in λ. However, the theory does not demand that the VP-functions are very stable. If the reader goes through the above argument, it is clear that the theory demands that the amount of economic voting is approximately constant. In the terms of equation (1a) of Subsection I.1 the F^e-term should explain a constant fraction of the variance.

Note that all arrows go towards the right on the figure. We have not drawn arrows the other way. As we have seen, one may explain the cost of ruling by other explanations than the grievance asymmetry, and many VP-functions are without grievance asymmetry. However, if we observe a grievance asymmetry, this must be a clear indication of loss aversion.

IV.3 Returning to the evidence

Given that the above theory is true, we conclude that the grievance asymmetry grows with economic variability. This may explain that λ is larger in very small countries. That is, we obtain the following result for the cost of ruling λ:

$$\partial\lambda/\partial \mathrm{Var}(\text{economy}) > 0 \qquad (6)$$

The main reason why we observe a constant cost of ruling is that the variance in the economy is much the same across the developed economies. If we calculate the variability of the main macroeconomic indicators that have been found to work in the VP-function there is actually very little difference. However, we have encountered three pieces of evidence above.

First, we have seen that very small countries may have higher λ's than other countries. We know that they are also more volatile. Second, as demonstrated in II.3 we do have periods of larger variability throughout our country-group and as shown on Figure 6 λ does rise when variability rises. Thirdly, we have quoted evidence, in I.2 that λ is (much) higher in countries - as the Latin American ones - where economic variability is (much) higher. Both pieces of evidence support equation (6). All three pieces of evidence corroborate the loss-aversion theory.

V Political economy: explaining partisan cycles

It has often been claimed that there is a political business cycle (PBC). Different authors have pointed to different cycles. The two main types are: *(α) election cycles* generated by governments manipulating the economy to maximize reelection chances, and *(β) partisan cycles* generated by changing governments pursuing different goals. Paldam (1997) surveys the many theoretical claims and empirical studies and concludes that even when the empirical evidence is somewhat underwhelming, it is most supportive for the Partisan model of the PBC. In fact, the support for the election cycle is rather flimsy.

V.1 The conditions for getting partisan cycles

Partisan cycles occur if the three conditions listed in Table 9 are fulfilled:

Table 9. The three conditions for Partisan Cycles to occur

(a)	Policies of the parties - when ruling - are influenced by party ideologies. That is, different governments systematically pursue different goals and hence different policies
(b)	Different policies lead to different outcomes (policy efficiency)
(c)	Governments change. This happens once there is a cost of ruling

Here (a) is explicitly rejects the median voter model, so we shall return to this point in Section VI. For now we shall concentrate on (b) and (c).

(b) immediately takes us to the core of the big discussion about RE (rational expectations) that was central to macroeconomics from the mid-to-late 1970s and for almost two decades: are economic policies efficient. The big - seemingly paradoxical - claim of the RE-school was that given all agents had perfectly rational expectations, all predictable policies become ineffective.

(i) In pre-RE-theory policies were taken to be effective, so that in Hibbs' partisan-cycle theory the different policies led to different trends in the policy-interesting variables. (ii) In RE-theory polices can only have *transitory* effects on economic outcomes, so that in Alesina's partisan cycle theory the different goals lead to post election blips in the policy-interesting variables.[15)]

(iii) A great deal of post-RE economic theories is now available. A main finding is that policies do have non-transitory effects. This is now causing the emergence of hybrid partisan cycles looking like a mixture of Hibbs' and Alesinas' model.

V.2 The change of government condition (c)

Item (c) on the list is where the cost of ruling comes in. Once there is a cost of ruling everybody knows that governments will change frequently. This is therefore a key condition for partisan cycles to occur. And, it replaces the more tortuous theories that have been proposed.

The cost of ruling also acts as an effective device hindering governments in pursuing (α) election cycles. Golen & Poterba (1980) have tried to calculate the maximum gain governments can obtain from pursuing the path that maximize reelection chances. It appears small relative to the cost of ruling. Hence once governments recognize the size of λ, the better course for a new government is simply to pursue its ideological goals.

Given that governments pursue ideological goals and there is a cost of ruling one is likely to get something looking very much like (irregular) partisan cycles. Under these circumstances one should not observe the »politics doesn't matter result« as some authors claim to have found. Ie, one should not see that policy outcomes are the same under parties of different political observation.

15. The Hibbs model was first described in Hibbs (1977) as reprinted in Hibbs (1987). The Alesina model is presented in a whole set of papers since 1987, all surveyed in Alesina & Roubini (1997). Many other writers have participated in the development, recent survey are Paldam (1997) and Frey (1997), containing also a reprint of the key papers in the PBC literature.

VI Politics: the median voter complex

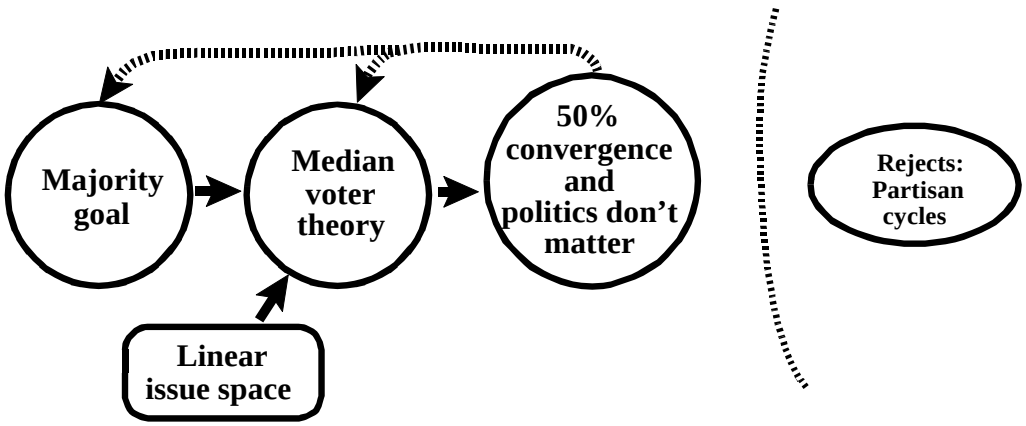
Given the cost of ruling any government party must decrease. In a two-party/two-party-block system the governing party must fall to below 50%,[16] and then the opposition party becomes the government and starts to fall. That is, the government and the opposition must both converge to steady state vote-shares of 50%.

Note that this convergence result is independent of the two mechanisms normally used to account for it. It happens irrespective of the median voter mechanism and the minimum winning coalition result. However, if we explain the cost of ruling by (ii) the median-gap theory, then obviously we are back into the median voter theory, though with a few interesting twists.

VI.1 The static median-voter

Figure 9 shows the good old median voter theory. It is a static theory showing the influence of the wish to be reelected on policy-making in a two-party country. Given the minimum-winning coalition theory, the two parties which both want to win and not to be too large end up fighting for the median voter

Figure 9. The logical structure of the original median voter model



The strict conditions for obtaining the median voter result are: (a) the majority goal and (b) a one dimensional issue space. The result can also be reached if the conditions are relaxed a little, but not very much. The median-voter model produces two observable results: (M1) The party-system converges to two parties having 50% of the vote each, and (M2) since the two parties both come to adopt the policy preferred by the median voter, they come to have the very same policy. Note that the two results (M1) & (M2) both emerge from exactly the same mechanism.

The logical structure of the model is very simple as shown on Figure 9. It is sometimes alleged that one actually observes both (M1) and (M2). This observation is then taken as a proof that the theory is confirmed, as drawn. But the conclusion does only follow as a necessary condition of the observation. It

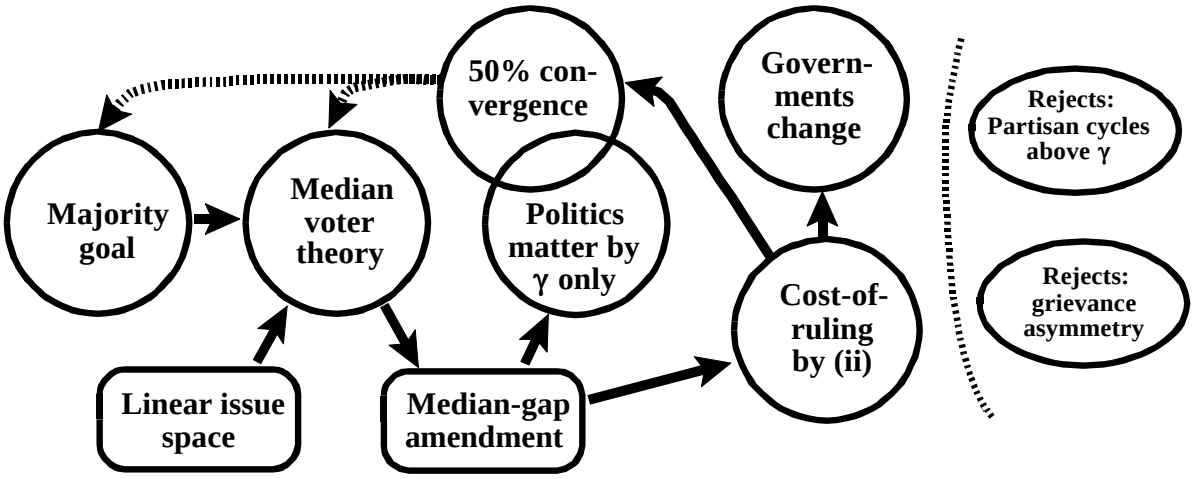
16. Most election system has a small (or large) dis-proportionality in the system of representations (Z%), so that the party favored by the system needs only (50-Z)% to rule and the least favored party needs (50+Z)% to rule they converge to these points.

is not a sufficient condition. Note that the theory explicitly rejects that partisan cycles occur. Furthermore no explanation of the cost of ruling is provided. Also, it is not explained why governments change. The theory is static.

VI.2 The median-voter complex with the median-gap amendment

Figure 10 shows the full median-voter complex: The majority goal is still taken to be the joint goal of the parties. This leads to the median voter theorem as before; but we now amend the theory with the median-gap theory from II.2. The policies of the parties differ by the (small) »visibility gap« of γ around the position of the median voter. This introduces some dynamics and allows us to account for the cost of ruling.

Figure 10. The logical structure of the full median voter complex



We still reach the two observable results: (M1) the 50% convergence and (M2) that policies don't matter (it matters γ only), but now they are reached differently. So we have drawn them as overlapping on Figure 10. They should probably overlap even more, but for readability we have made the overlapping small.

Within the model we can take the observations looking like (M1) and (M2) as indications that the logics is coherent, but they are still not sufficient conditions, so we have made the »return-arrows« dotted as before. If this theory is true, there can be only very small partisan cycles, and no grievance asymmetry, etc. In effect, the support for the whole of the loss-aversion complex vanishes.

VI.3 The alternative explanation of the 50% convergence - back to the right-hand part of Figure 8

Note that both the loss-aversion theory of Figure 8 and the median-voter theory of 8 explain the 50% convergence, but do so in two different ways. In the median-voter theory it is basically caused by the pull from the median voter, while in the loss-aversion theory it is caused exclusively by the cost of ruling. The key theoretical problem for the median-voter complex has is that it needs a (near) linear issue space.

The median-gap theory leaves a marginal role only for politics. Policies in a two-party country can differ by γ only, while politics can be quite different in the loss-aversion model. If the reader agrees that we do observe non-negligible partisan cycles, the medium-gap theory has a problem.

We conclude that the loss-aversion explanation does have an edge. It is a little simpler and builds

upon more basic behavior.

VII Extravagant claims?

Our paper tries to make a case that a well-known effect which is normally treated as a small sideshow - often relegated to a footnote - is a strong and robust fact that ought to be on center-stage. It is generally not well known how robust the fact actually is. Few attempts have been to explain the cost of ruling, and to see how an explanation fits into a broader range of theories. Our aim has been to take a couple of steps toward integrating the cost of ruling into economic and political theory.

The reader will have noted that everything hinges crucially on the empirical result listed as (e1) that the cost of ruling is almost *constant* in all stable developed democracies. The constancy applies both across countries and over time. We have found a few small deviations from perfect constancy - most notably a large increase in the costs during the early 1990s. Also, we do not doubt that when more data are analyzed, and new techniques are trained at them, other small deviations from perfect constancy will be found. However, we are confident that the deviations from strict constancy will remain remarkably small.

We are thus dealing with an unusually strong fact. It is hence worth to contemplate how much it can explain. We have explored two complexes. (i) the *loss-aversion complex* that appears to hang very well together, and to have one deep parameter of human behavior in its center, peoples' loss/risk aversion. (ii) the *median-voter complex*. We have shown that the two complexes are largely alternative. However, the loss-aversion complex explains more, and does so in a simpler way.

Both complexes provide a coherent framework for understanding a range of political and economic phenomena. We recognize that these complexes are not fully explored, and we trust that as more researcher contemplate these issues, more findings will emerge. Maybe we have even overlooked other complexes where the fact that the cost of ruling is so robust can contribute. So we are confident that we have not made extravagant claims.

In the end we therefore want to make an even stronger claim. It builds upon the old observation that it is crucial for democracy that governments change. Without government changes, oppositions would have no legal ways to gain power. The cost of ruling is one of the underlying reasons why governments change. It therefore contributes to keeping democracy viable.

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