

## Policy Punctuations in British Political Institutions

To what extent are the activities and outputs of British political institutions subject to equilibrium or instability? The punctuated equilibrium model (Baumgartner and Jones 1993; Jones and Baumgartner 2005) implies a leptokurtic distribution of policy change, which can be measured with a kurtosis statistic.<sup>1</sup> When compared against the normal distribution, those with positive kurtosis (i.e. leptokurtosis) have a large, slender central peak to correspond to extended periods of incrementalism or stability; weak shoulders to reflect the relative lack of moderate change; and fat tails that represent the disproportionate occurrence of extreme infrequent disturbances (i.e. punctuations). Indeed, the distribution of budget changes has been shown to be leptokurtic in the United States (Baumgartner et al. 1998) and elsewhere (Baumgartner et al 2006; Breunig 2006; John and Margetts 2003; Jones et al. 2009). There is also evidence that the leptokurtosis of output distributions becomes more and more severe as the level of institutional friction increases through subsequent stages of the political system (Jones et al. 2003, p. 166; Baumgartner et al. 2009). Measurement of the normality of the distribution of change in policy, public and media agendas can therefore indicate the extent to which politics and policy-making might be characterized by incrementalism or change (see John and Jennings 2010). Further, it assists inferences about the degree of friction that exists in British political institutions and in public and media agendas. (These stochastic process methods examine the total distribution of agenda change and as a result are concerned with the general pattern of stability and change.) Friction can either be an institutional force that restrains change, inducing path dependence and creating transaction costs for change, or it can be associated with cognitive limitations of either policy-makers, media or the public, who are subject to finite capabilities of information recall and processing as well as being subject to a fair degree of 'stickiness' in their attention to particular issues as well as sudden shifts in attention once the threshold for attention change is exceeded. The expectation is, then, that

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<sup>1</sup> Kurtosis is the fourth moment around the mean (where variance and skew are the second and third moments). This is a measure of the relative 'peakedness' of a given distribution.

input, process and output series that are characterised by high levels of friction should also be highly punctuated, as indicated through a leptokurtic distribution of change over time.

In understanding the distribution of change in the political system, it is possible to distinguish socio-economic processes, government inputs, policy processes, and outputs (drawing upon Baumgartner et al. 2009). Socio-economic processes refer to 'real world' variables (which are themselves often affected by policy), such as the state of the economy or the stock market, health of the population, crime rates, migration, labour markets and so on. Government inputs refer to inputs into the political system, such as election outcomes, media, lobbying activities or large scale collective action. Policy processes refer to the activities of the various parts of the policy process such as election manifestos, coalition agreements, annual speeches of the government's legislative programme, executive orders, legislative debates and hearings. Last, outputs refer mainly to appropriations and budget outlays of government as well as other non-expenditure based measures of direct government activities. Our discussion here focuses on the more general distinction between socio-economic processes and policy, public and media agendas.

#### *Patterns of Change in Socio-Economic Processes and Policy, Public and Media Agendas*

To analyse the distribution of change, with the exception of budgetary expenditure, we use the "percentage-percentage" calculation method of the difference between agenda share in one year and the next (see Baumgartner et al. 2009, p. 610). Budgets are not treated as bounded in the same way because the numbers involved are much larger (and therefore more stable) and because the values are reported in real prices, which removes change due to inflation. Note that for the Speech from the Throne, Acts of UK Parliament, MIP and MII responses, and the media agenda of *The Times*, cases in which attention to a particular topic remains stable at zero are treated as missing to avoid over-inflation of the kurtosis scores (which could lead to false acceptance of theoretical hypotheses) due to empirical redundancy

of some topic codes under certain circumstances.<sup>2</sup> Further details of the data are reported in Appendix A2.

The distribution of year-on-year percentage change in the content of policy, public and media agendas is presented in Figure 1 and socio-economic processes (i.e. 'real world' indicators) such as elections, economic conditions, crime, the labour market and migration in Figure 2, while the kurtosis scores for each variable are reported in Table 1. If the value of the kurtosis statistic is greater than three, the distribution exhibits positive kurtosis, and can be said to be leptokurtic. In addition to calculation of the kurtosis scores for each agenda and input distribution, kurtosis is also tested for through the Shapiro-Wilk test, which considers whether the sample is drawn from a normal distribution (generating a *W* statistic for each series). The results of the Shapiro-Wilk test are consistent with the reported kurtosis scores and therefore provide validation of our measurement.

From inspection of the kurtosis scores, it is evident, first of all, that the patterns of change in all of the policy, public and media agendas are leptokurtic distributions. Further, the pattern of leptokurtosis that is observed from comparison across agendas is illuminating concerning the relationship between cognitive and institutional friction and the dynamics of policy change. For attention to major topics in governing institutions -- here the Speech from the Throne, Acts of UK Parliament and functional expenditure of central government -- the process agenda that is subject to the lowest degree of institutional friction against change (the speech) exhibits the lowest degree of punctuatedness, while the output agenda subject to the highest level of friction (spending) exhibits the highest degree of punctuatedness. Each of the findings is consistent with the distribution of percentage changes observed in Figure 1, with the distribution for budget expenditure notable for its tall, slender peak around zero, reflecting a disproportionate incidence of incrementalism, as is the media agenda, while distributions for the public agenda (MIP and MII) exhibit clustering around the mean of the distribution, though somewhat less of a pronounced peak. Indeed, it is of considerable interest that the public and

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<sup>2</sup> Thus, John and Jennings (2010) point out that the introduction of a major topic code with no empirical relevance to the agenda, for example because attention of policy-makers to a topic is rare or because it is attended to in other domains, would otherwise create a cluster of change scores equal to zero as the level of attention remained constant at zero over time.

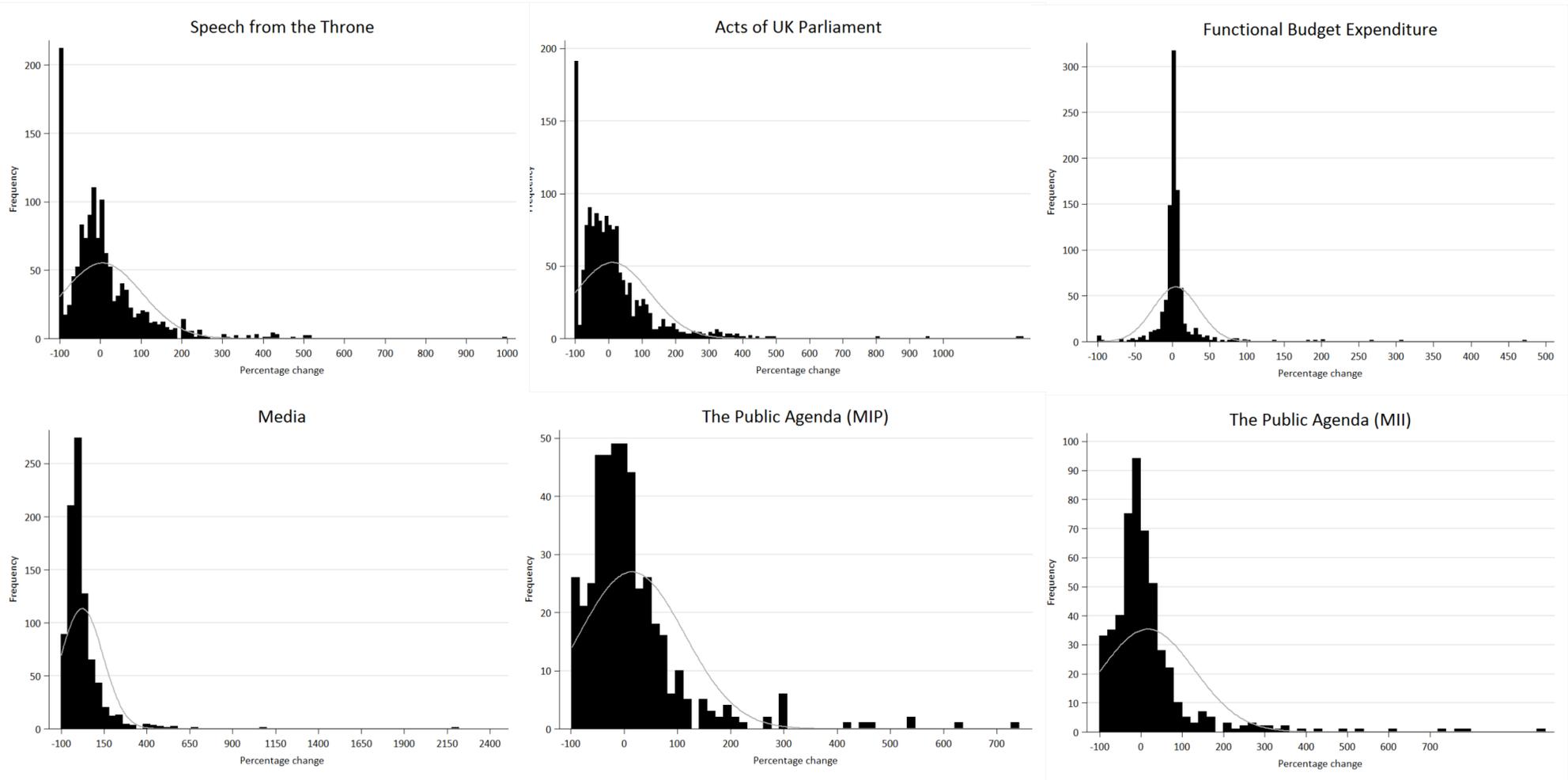
media agendas -- although not subject to institutional friction of the sort that so afflicts policy-making inside government -- exhibit high levels of leptokurtosis. This reflects the influence of cognitive friction, since both media content and public opinion are input distributions that are not subject to institutional friction, but despite this both tend to adhere to long-term periods of equilibrium, in which there is stability in the level of attention to particular topics, but subject to sudden and dramatic shifts in the agenda as new issues or problems are thrust onto it, often due to the emergence of things such as economic crises, political scandals, environmental or natural disasters, military conflictions, societal panics, outbreaks of disease, and so forth.

In summary, this evidence generated through the application of stochastic process methods points to two important findings concerning the presence of punctuations in British political institutions and the significance of the effects of cognitive and institutional friction on the distribution of change in attention over time: 1) the policy agendas of British government, constituting both policy processes (the Speech from the Throne and Acts of UK Parliament) and outputs (budgetary spending), are subject to extended periods of stability and long-term equilibrium in decision-making, interspersed with occasional large-scale punctuations in policy attention; and 2) the degree of punctuatedness that is observed in input, process and output agendas is a function either of cognitive friction (in tendency of the public, media and policy-makers to 'lock on' to certain information signals and to over-respond to them until a new cue is identified) or to institutional friction (in the transaction costs of acting in certain institutional arenas to overturn the status quo, and due to the presence of procedural rules and limits on time and resources of government).

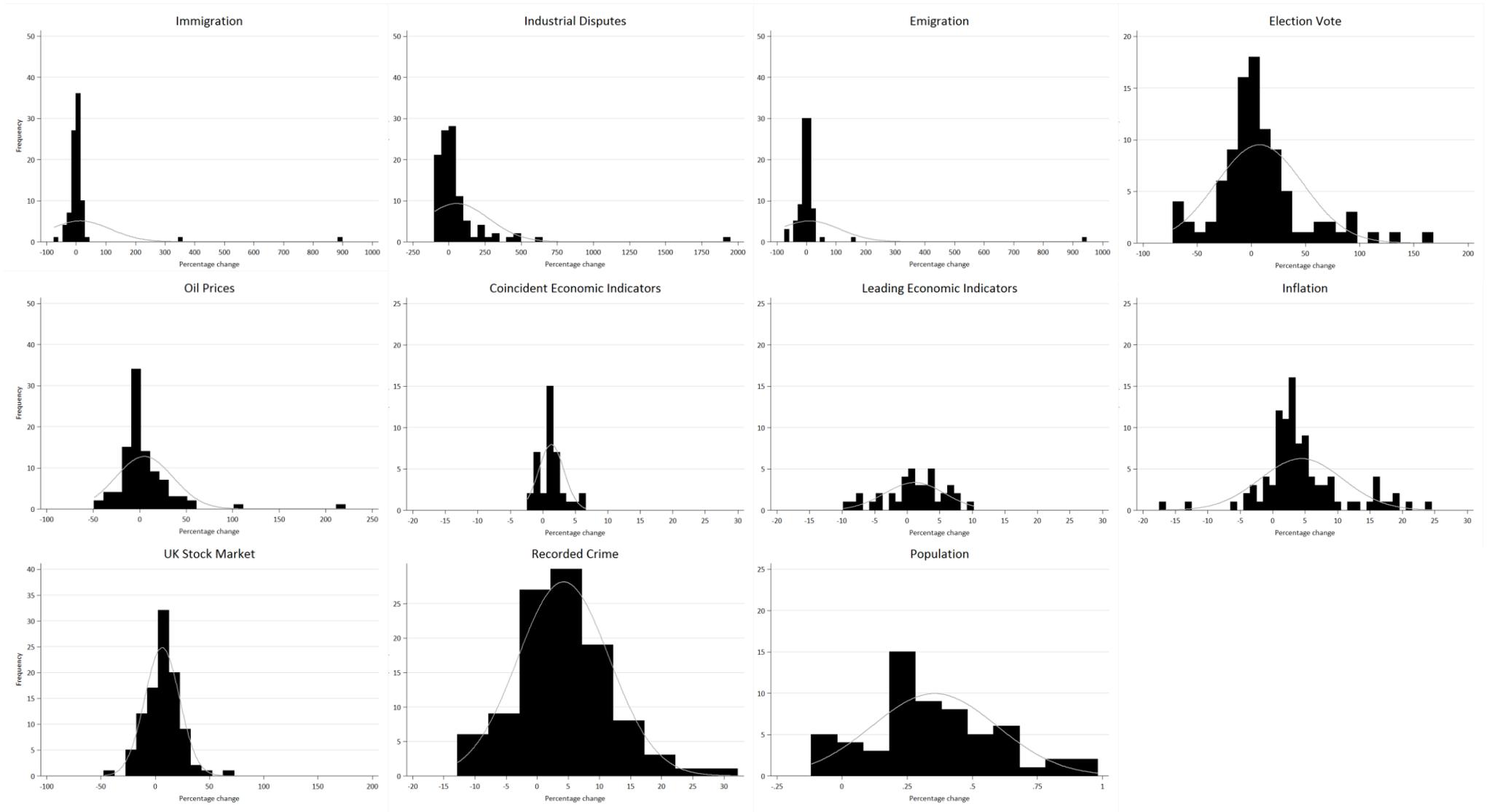
**Table 1.** Change in Attention to Major Policy Topics in Policy, Public and Media Agendas and in Socio-Economic Indicators.

<u>Variable</u>	<u>Start</u>	<u>End</u>	<u>Time Unit</u>	<u>N</u>	<u>Obs.</u>	<u>Mean</u>	<u>S.D.</u>	<u>Kurtosis</u>	<u>Shapiro-Wilk W Statistic</u>
<i>Agendas</i>									
ΔSpeech from the Throne	1911	2010	Parliamentary session	103	1347	4.59	97.23	15.62	0.871***
ΔActs of UK Parliament	1911	2008	Parliamentary session	100	1466	11.33	111.35	28.56	0.775***
ΔBudgetary expenditure	1911	2007	Year	97	917	4.85	30.65	84.29	0.476***
ΔMost important problem (MIP)	1943	2000	Year	55	443	54.08	299.25	67.76	0.333***
ΔMost important issue (MII)	1977	2010	Year	34	504	22.40	147.40	55.13	0.497***
ΔMedia (front page of <i>The Times</i> )	1960	2008	Year	49	875	22.17	122.94	125.97	0.548***
<i>Socio-Economic Indicators</i>									
ΔUK Population	1946	2006	Year	60	60	0.36	0.24	2.72	0.979
ΔLeading economic indicators	1970	2009	Year	39	39	1.13	4.65	2.72	0.965
ΔCoincident economic indicators	1970	2009	Year	39	39	1.32	1.96	3.63	0.941*
ΔNumber of recorded crimes	1911	2006	Year	94	94	4.38	7.64	3.75	0.984
ΔVote share in UK elections	1918	2010	Year	25	96	7.55	40.25	5.58	0.900***
ΔStock market	1911	2010	Year	100	100	6.40	16.07	4.49	0.979
ΔPrices (i.e. inflation rate)	1911	2010	Year	100	99	4.42	6.38	5.10	0.905***
ΔGlobal oil prices	1911	2010	Year	100	99	4.98	30.93	24.49	0.711***
ΔUnemployment rate	1911	2010	Year	100	99	13.81	99.05	40.04	0.361***
ΔNumber of industrial disputes	1911	2005	Year	95	95	52.19	0.28	48.63	0.437***
ΔImmigration	1911	2006	Year (with gaps)	88	88	12.46	103.43	62.87	0.237***
ΔOutward migration	1911	2006	Year (with gaps)	88	88	9.51	103.68	76.00	0.232***

**Figure 1.** Annual Percent Change in Policy, Public and Media Agendas



**Figure 2.** Annual Percent Change in Socio-Economic Processes



**Appendix A1.** The UK Policy Agendas Project major topic codes

1. Macroeconomics
2. Civil Rights, Minority Issues, Immigration and Civil Liberties
3. Health
4. Agriculture
5. Labour and Employment
6. Education and Culture
7. Environment
8. Energy
10. Transportation
12. Law, Crime, and Family Issues
13. Social Welfare
14. Community Development, Planning and Housing Issues
15. Banking, Finance, and Domestic Commerce
16. Defence
17. Space, Science, Technology and Communications
18. Foreign Trade
19. International Affairs and Foreign Aid
20. Government Operations
21. Public Lands, Water Management, Colonial and Territorial Issues

See [www.policyagendas.org.uk](http://www.policyagendas.org.uk) for the full codebook with sub-topics and topic descriptions.

## **Appendix A2. Data**

### *The Speech from the Throne (Policy Process)*

The Speech from the Throne<sup>3</sup> is an annual speech that presents the governing agenda of the executive for the year ahead (see John and Jennings 2010; Jennings et al. 2011). The policy content of the speech is divided into quasi-sentences,<sup>4</sup> with each quasi-sentence assigned a single topic code. Because of the timing of each speech (at the opening of the parliamentary session), the data is organized parliamentary session. This time interval is also used for the legislation (see below). To measure 'percentage-percentage change', the base measure of the agenda is the percentage of coded objects (i.e. quasi-sentences) assigned to a particular major topic, as a proportion of the total number of objects for the defined unit of time (i.e. the parliamentary session). We omit non-policy content in calculation of the agenda share. This treats the agenda space as constant through time. There is no potential for growth or inflation in the agenda unlike budgets, because this measure is bounded. Note that we also drop from our analysis three short speeches given at the temporary reopening of parliament from recess for special legislative purposes, in 1921 and 1922 concerning independence of the Irish Free State and in 1948 concerning passage of the third Parliament Act to resolve the gridlock between the House of Lords. This again avoids any over-inflation of the kurtosis scores due to inclusion of exception sessions of parliament that do not perform the standard function of law-making, which might otherwise lead to over-estimation of the degree of punctuatedness of the executive agenda of UK government.

### *Acts of Parliament (Policy Process)*

Acts of UK Parliament includes all legislation of the UK Parliament that received royal assent between 1911 and 2008. The base measure of the agenda is the percentage of coded objects

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<sup>3</sup> Otherwise known as the King's or the Queen's Speech or the Most Gracious Speech (see Jennings et al. 2011).

<sup>4</sup> A quasi-sentence (or policy statement) constitutes an expression of a single policy idea or issue (see Volkens 2002). Often this unit of analysis is identifiable from the use of punctuation, though it is possible for sentences to include multiple references to policy content (in particular those which address a series of major policy issues in a list).

(i.e. acts) assigned to a particular major topic, as a proportion of the total number of objects for the defined unit of time (i.e. the parliamentary session). As with the data for the Speech from the Throne, the special session of parliament in 1922 is also excluded from Acts.

#### *Budgetary Expenditure (Government Output)*

Budgetary data was gathered from both historical sources and the *UK Blue Book* based on the division of expenditure and reclassified according to major topic codes. For the period between 1910 and 1950 reported statistics from Peacock and Wiseman's (1961) *The Growth of Public Expenditure in the United Kingdom* were used. From 1951 to 2007 expenditure reported in the *UK Blue Book* completed the series. The measure of change is simply the percentage change in budgetary spending in a given topic, year-on-year, in real terms (i.e. adjusted for inflation).

#### *The Public Agenda (Input Series)*

The issues priorities of the public are often measured with survey instruments that ask about the 'most important problem' (MIP) facing the nation (see Wlezien 2005; Jennings and Wlezien 2011). Gallup first asked about the MIP in the UK in 1947. MIP data is not available in the UK after 2001, when Gallup ceased political operations in the UK. Since 1977, however, Ipsos-MORI has asked a similar question about the 'most important issue' facing the country. The MIP and MII categories are recoded to correspond to the Policy Agendas Project major topic codes and are normalized so that the percentage total of MIP responses is equal to one hundred (note that there is some variation over time in the degree to which both MIP and MII responses are significantly greater than one hundred).

#### *The Media Agenda (Input Series)*

The media agenda consists of a database of 21,854 front page headlines from The Times of London, sampled on every Wednesday over the 1960 to 2008 period. The base measure of the agenda is the percentage of coded objects (i.e. headlines of front page stories) assigned to a particular major topic, as a proportion of the total number of objects for the defined unit of time (i.e. the calendar year).

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### **Project Details**

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