

Economic Policy, Political Accountability and the Room to Maneuver*

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ABSTRACT

Most political scientists agree that governments retain substantial room to maneuver despite economic globalization. But these researchers assert rather than demonstrate that citizens are satisfied with economic policies and outcomes. We use a Bayesian multivariate time-series framework that allows us to analyze the dynamic relationship between popular evaluations of policymakers' performance, government policy choices and macroeconomic outcomes in Britain from 1984 to 2006. Our results do not support the room to maneuver thesis. The British government was responsive to changes in political evaluations. Citizens then rewarded the government for its reaction with higher political support. However, the impact of government policy adjustments on inflation and economic growth was negligible. Government capacity to shape macroeconomic outcomes thus was limited. The results also show that before the central Bank of England was granted independence in 1997, the government used both monetary and fiscal policy in response to changes in popular evaluations. After 1997, the political influence over monetary policy decreased significantly and fiscal policy became the main economic policy instrument of the elected government.

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1. Introduction

Most political scientists agree that governments still retain substantial room to maneuver in economically open democracies. Despite economic integration, tax rates and public sector sizes have not been converging across advanced industrialized countries. Some scholars even find a positive relationship between financial openness and government activity. From these findings, researchers conclude that economic globalization has not constrained economic policymaking as predicted by earlier, more pessimistic scholars.

These political scientists imply that citizens are satisfied with economic policies and macroeconomic outcomes. Through voting and other forms of political participation, citizens evaluate these policies and hold governments accountable for their choices. Economic policymakers therefore use this room to implement the policies that citizens desire and to generate the economic outcomes that are in the interest of the public.

This research *assumes* rather than demonstrates that citizens are satisfied with policies and outcomes. It omits channels for popular preferences to feed back into policies and outcomes, and does not explicitly analyze the connections between citizens' evaluations of economic outcomes, government policies and macroeconomic developments. Extant research only examines parts of the causal nexus between popular evaluations, policies, and macroeconomic outcomes that represent political accountability. Moreover, these studies fail to draw distinctions between short- and long-term consequences of policy choices and to provide any estimates of the magnitudes and durations of policy outcomes. Without sound estimates of these outcomes, we have no idea how much, if any, room to maneuver democratic governments actually retain.

A complete analysis of room to maneuver requires that we uncover the causal chains that connect political evaluations to policies to outcomes and then back to evaluations, as presented in Figure 1. We have to show that governments not only have the capacity to resist market forces and manage their macroeconomies, but also that publics are satisfied with the policy choices of their governments. Only if governments are able to generate distinct economic outcomes that reflect the preferences of their publics will room to maneuver exist. Room to maneuver means that governments adjust economic policies when the public becomes increasingly dissatisfied with economic policies, that the new policies have a strong and lasting effect on the macroeconomy, and that citizens, in turn, appreciate the improvement in their well being.



Figure 1: Political Accountability in Economic Policy

To establish the degree of accountability that exists in contemporary democracies, we need a new framework that accounts for the *dynamic and simultaneous* evolution of the key economic and political variables. Existing models are incomplete because they treat the polity or the economy as exogenous. Political scientists demonstrate the importance of economic factors for popular evaluations and government approval. But they ignore how the government’s reaction to changes in popular evaluations feed back into economic outcomes. Economists analyze how monetary and fiscal policy affects the macroeconomy, but make no provisions for political accountability. The political and economic literatures thus only analyze one side of the complete political economy model in Figure 1.

We develop a political economy framework that allows for endogeneity between the open economy and the macropolity. It fully accounts for the relationships between political and economic forces without imposing strong restrictions about the underlying causal mechanism, as is the case in standard political economy models. The model is interdisciplinary, combining current research from political science, political economy and new open macroeconomics to identify the model. We test our competing arguments about the existence of political accountability using Bayesian structural time series methods for monthly data from 1984 to 2006 for the United Kingdom. The British economy has been highly open to trade and financial flows and is characterized by a high degree of clarity of responsibility. It thus is a critical case because if political accountability exists anywhere, we should find it in Britain. Our analysis splits the data into two periods, 1984-1997 (a Tory period) and 1997-2006 (a Labour period) to evaluate differences in accountability due to public preferences, economic policies and central bank independence.

We find only limited evidence that accountability exists in open democracies. The British government was responsive to changes in political evaluations. For instance, when sociotropic economic expectations decrease, government debt increases which indicates higher fiscal spending. Similarly, when personal economic expectations decline, the government lowers interest rates. These policy choices fed back into popular evaluations, e.g. vote intentions. A visible link from popular evaluations to policy and back to popular evaluations existed. This accountability mechanism has only a small effect on the real economy. Although prices and output respond to fiscal and monetary policy, the impact of policy on real economic outcomes is tiny. This suggests that government capacity to shape macroeconomic outcomes in Britain was limited and popular influence over economic policy had little effects.

Our results also show that policymaking differed considerably before and after the central bank was granted independence. Fiscal policy was significantly more reactive to changes in political evaluations after 1997 when the government did not control monetary policy. As regards pre-election or “electorally induced cycles,” the results for the Tory period support Clark and Hallerberg (2000) and contradict O'Mahony (2006); under mostly flexible exchange rates and central bank dependence, there is evidence of pre-election effects in monetary policy only. Mahoney's results are partially supported by a pre-election fiscal policy effect in the Labour period. Contrary to the predictions of Clark and Hallerberg, we also find pre-electoral monetary effects in this period of flexible exchange rates and an independent central bank. Finally, we find a number of anomalies that are inconsistent with theoretical expectations. Future research will examine further these findings.

2. Policy Effectiveness and Accountability in Open Economies

2.1 Monetary Policy

Research from new open macroeconomics yields ambiguous conclusions about the room to maneuver and accountability. Dynamic stochastic general equilibrium models with market rigidities (e.g., inflexible prices, sticky wages and monopolistic competition) propose that monetary policy can have a strong effect on economic output (Galí 2003; Galí and Monacelli 2005). The extensions of these theoretical models to open economies imply that an unexpected

monetary expansion may even increase both domestic and foreign output (Obstfeld and Rogoff 1995).¹ Empirical studies show that domestic monetary contractions in fact have international effects, e.g. lead to increases in nominal and real exchange rates (Clarida and Galí 1994; Cushman and Zha 1997; Eichenbaum and Evans 1995). The effect on output is more ambiguous. While some researchers find a considerable effect of a monetary shock on domestic and foreign output (Betts and Devereux 2001; Kim 2001), others find that this effect is rather small (Cushman and Zha 1997).

Based on insights from the Mundell-Fleming model, political scientists argue that despite capital mobility, governments can use monetary policy to satisfy the demands from its constituents. When the exchange rate is flexible, monetary expansions in an open economy lead to currency depreciation. This depreciation stimulates exports that in turn benefit businesses and workers in the trade sector (Frieden, 1991). Political scientists also contend that governments in open economies with flexible exchange rates use monetary policy to create pre-election growth spurts above the natural level, but only when the central bank is not independent (Clark and Hallerberg 2000). Those governments that have not delegated monetary policy to an independent central bank thus should be able to produce macroeconomic outcomes desired by their constituents, at least in the short and medium runs.

If monetary policy is as effective as some of these results suggest, political accountability should still exist in economically open democracies. We should observe a causal chain that connects popular evaluations of economic outcomes to monetary policy choices, to macroeconomic outcomes and back to popular evaluations. None of these studies explicitly

¹ To what degree both countries benefit from the domestic monetary expansion depends on the degree of exchange rate pass-through. When pass-through is large, i.e. when producers set prices in the home currency, the exchange rate drops after a monetary expansion and shifts world demand towards domestic products. Both countries benefit from the monetary expansion, however, because the shock generally increases world demand (Obstfeld and Rogoff 1995). When pass-through is small, i.e. when producers set prices in the purchasers' currency, exchange rate depreciations do not change relative prices of domestic and foreign products, but increase the domestic currency value of revenues from exports. In such a pricing-to-market model, an unexpected domestic monetary expansion can have adverse effects on foreign welfare because it alters the foreign country's terms of trade (Betts and Devereux 2000).

analyzes this complete relationship that connotes political accountability. They assume rather than demonstrate the citizens are satisfied with economic policies and the resulting outcomes. To show that room to maneuver and therefore accountability continues to exist in open economies, it is necessary to establish that the complete connection between citizens' evaluations, policy choices and economic outcomes exists. Moreover, this has to be done for both non-electoral and electoral periods. We can not simply assume, as Clark and Hallerberg (2000: 325) do, that in non-electoral periods the preferences of the central bank and the government are identical, let alone that citizens believe in and are satisfied with the natural rate of growth.²

In a previous study, we construct a political economy model that allows for such a test (Sattler et al. 2006). We analyzed whether accountability in monetary policy existed in Britain from 1981 to 1997 before the Bank of England was granted independence. Our results did not support the room to maneuver thesis. The British government was responsive to changes in political evaluations, and its policy choices effectively fed back into popular evaluations of government policy. Hence, a visible link from popular evaluations to policy and back to popular evaluations existed. However, this accountability mechanism worked outside the real economy. The changes in monetary policy induced by shifts in popular evaluations had no impact on inflation and economic growth. Government capacity to shape macroeconomic outcomes was limited, and popular influence over monetary policy was ineffectual.

2.2 Fiscal Policy

2.2.1 Race to the Bottom

It is possible that governments primarily use fiscal rather than monetary policy to influence economic developments and welfare, a possibility that our previous work does not take into account. The propositions in the literature about room to maneuver and therefore accountability in fiscal policy are quite contradictory.

Several scholars suggest that government's room to pursue an autonomous fiscal policy is highly constrained when countries become increasingly open to trade and capital flows. In their

² Clark and Hallerberg assume that in non-electoral periods the central bank and government—and, by implication, their citizens—prefer both the natural rate of growth and zero inflation.

view, increasing capital mobility and failure of governments to coordinate economic policies inevitably decreases levels of taxation on mobile assets (e.g., Tanzi 1996). Countries with higher taxation on capital experience a capital outflow to countries with lower taxation. Tax income from capital investments then decrease dramatically when a country loses large amounts of capital. Moreover, the decreasing level of investment leads to lower economic growth, lower government receipts and hence lower public spending.

This situation leads to a 'race to the bottom' in taxation and government spending. A country can increase its tax income initially if it lowers taxes slightly below the level of the other countries that compete for capital. Mobile capital then flows to this low-taxation country, but leads to an erosion of the tax base of the other countries that experience a capital outflow. These countries then cut taxes below the level of the country with the lowest taxes to attract capital from the other countries, and so on. When countries fail to coordinate their tax policies, the result is a decrease in government receipts and lower public spending in all economically open countries.

A few recent studies take a more nuanced view, but their conclusions are similar. They find that such a race to the bottom has not occurred, but capital mobility still restricts government policy autonomy in serious ways. It prevents governments from increasing taxes in response to higher spending requirements and from lowering taxes on immobile factors, such as labor, in response to rising unemployment (Bretschger and Hettich 2002; 2005; Genschel 2002). The government thus is trapped between the demands of business and voters. Citizens demand higher government spending to cushion the adverse domestic economic and social effects of economic integration. Capital owners request lower tax rates and threaten that they will move to other countries if the government raises taxes to finance increased government spending.

This critical view suggests that accountability in fiscal policy does not exist in open democracies. On the one hand, economic globalization causes structural changes and citizens demand greater government involvement. On the other hand, constraints on fiscal policy that result from capital mobility prevent policymakers from satisfying these requests. Lower tax revenues force governments to cut social welfare expenditures, and the size of the public sector in general tends to decrease. This causal chain implies that we should not observe a fiscal policy change when citizens become increasingly dissatisfied with economic developments. Moreover, there is no empirically observable effect from fiscal policy on real domestic economic outcomes.

2.2.2 Effective Fiscal Policy

Most political science scholars today challenge this pessimistic view. Empirical studies show that despite economic integration, tax rates and public sectors sizes have not been converging across advanced industrialized countries. Although there is some indication that taxation of mobile capital decreased slightly, the extent of these changes is rather small (see also Bearce forthcoming; Swank and Steinmo 2002). Some even find a positive relationship between financial openness and tax rates (Garrett and Mitchell 2001; Quinn 1997). Similarly, researchers find no evidence that public spending is declining (Bernauer and Achini 2000) or that there are higher levels of public expenditures when international economic integration increases (Garrett 1998a; 1998b; Rodrik 1998). From these findings, political scientists conclude that governments retain a significant degree of control over economic outcomes and social welfare in an economically integrated world. This is particularly true when a single party enjoys a legislative majority and decides to delegate fiscal policy to a minister or when a coalition of parties negotiates spending targets upon its formation (Hallerberg and Von Hagen 1999).

Some models even suggest that under specific circumstances, fiscal policy is more effective in an open than in a closed economy. Frieden (1991) argues that fiscal policy is particularly effective when the economy is open and the exchange rate is fixed. In a closed economy, excessive government spending leads to higher interest rates which reduce the impact of fiscal policy on economic growth. In an open economy, however, interest rates are set globally and remain stable because international investors buy government bonds to finance increased government spending. If the exchange rate was flexible, its appreciation following this capital inflow would reduce the impact of fiscal policy on economic growth. But since the exchange rate is fixed, this is not the case. In an empirical analysis, Clark and Hallerberg (2000) find that governments with fixed exchange rates use fiscal rather than monetary policy to stimulate the economy before elections. O'Mahony (2006) revises these results and accounts for the absence of full capital mobility, fiscal effects on prices, and trade openness. Her model predicts pre-electoral cycles when exchange rates are flexible and an economy is open to trade flows.³

³ Contrary to Clark and Hallerberg (2000, Table 2), O'Mahony (2006) argues that if an economy is open to trade and capital is only partially mobile, pre-election fiscal cycles can occur regardless of whether the central bank is or is not independent.

These studies suggest that governments satisfy the demands of citizens to cushion the adverse economic outcomes in open economies. When voters are increasingly dissatisfied with macroeconomic developments, governments use fiscal policy to influence economic outcomes. Fiscal policy is an effective instrument and has a significant and sustained impact on the real economy. Citizens then observe the government's reaction and its positive effect on the economy. Political evaluations of government policy and the resulting outcomes improve. In this case, political accountability exists and works through fiscal policy.

But, insofar as political accountability is concerned, these are assertions not demonstrations. None of these models includes any equations for citizens' evaluations of macroeconomic outcomes and policies, let alone for any feedback from these evaluations to policymaking.

2.3 Institutions and the Connection Between Monetary and Fiscal Policy

As indicated in our discussion on monetary policy, central bank independence limits the government's ability to react to popular evaluations. Since most central banks in the industrialized world have been granted independence during recent decades, the accountability mechanisms, if they exist, may have changed. When a central bank is not autonomous, the government can use both fiscal and monetary policy to influence economic developments. When the government learns that citizens are dissatisfied with economic policies and outcomes, it can lower interest rates and increase government spending to stimulate the economy. Fiscal and monetary policies then are consistent and reinforce each other. The government's reaction to declines in popular evaluations effectively changes real economic outcomes. Citizens presumably observe the policy change and its effects on economic developments and reward the government with higher political support.

When technocratic central bankers control monetary policy, this possible accountability mechanism should be weaker; it may even disappear. Monetary policymakers who do not depend directly on the public support will be less responsive to political evaluations of policymaking. Although delegation of monetary policy to an independent central bank helps solve the "time-consistency problem" and hence enhances economic efficiency, the public loses control over an important policy instrument. Our previous research shows that monetary policy played a

significant role for accountability in Britain before the Bank of England was granted independence in 1997 (Sattler et al. 2006). Although the government's capacity to shape real economic outcomes was low, the Bank lowered interest rates when national economic expectations of citizens became more pessimistic. We can expect that this link between political evaluations and monetary policy weakens or breaks completely when monetary policy is insulated from public control.

Besides its effect on monetary policy, central bank independence may also reduce fiscal policy accountability. Monetary policy by a central bank exclusively focused on price stability may reduce the effectiveness of fiscal policy. When the government increases the budget deficit to satisfy the demands from voters with higher spending, the conservative central bank tightens monetary policy to fight inflationary expectations. This contractionary monetary policy reduces economic growth and thus diminishes fiscal policy effectiveness. Accountability in economic policy then is limited because the government's capacity to react to changes in political evaluations is reduced.⁴

On the positive side, unexpected monetary shocks may be more effective when a conservative central bank controls monetary policy. As our previous research shows, monetary policy was essentially ineffective in Britain before the Bank of England became independent in 1997 (Sattler et al. 2006). Monetary policy effectiveness may be greater after 1997 because central banks that are insulated from political pressure usually have a longer time horizon and therefore enjoy greater low-inflation credibility than non-independent banks (Rogoff 1985; Franzese 1999). When the monetary authority enjoys substantial monetary credibility, unexpected policy interventions are likely to be more effective. With an autonomous central bank, wage setters expect that inflation will be low in the future and set wages accordingly. An

⁴ Exemplary analyses of the connection between monetary and fiscal policy are Dixit and Lambertini (2000; 2003). Note that these studies make no provision for popular evaluation of monetary and fiscal policies (equilibria). The preferences of Dixit and Lambertini's strategic actors—the central bank and government fiscal authority—do not depend on the public's evaluations of the macroeconomy.

unexpected monetary expansion thus can have a strong effect on economic growth when wages are inflexible in the short run.⁵

Although central bank officials usually cannot be held as directly accountable as their fiscal counterparts, monetary policy by an independent central bank may better represent the interests of the public than policy by a non-independent bank. If central bankers do not focus exclusively on price stability, but also take into account the public's evaluations of monetary policy, central bank independence may increase accountability as we define it.⁶ When the citizens become dissatisfied with economic developments, central bank interventions can effectively affect the real economy. Citizens then observe these policy changes and the resulting economic outcomes and subjective economic expectations become more optimistic.

If this form of accountability exists, we should observe that monetary policy reacts to changes in subjective economic expectations, and these policy changes have a significant impact on the real economy. Other indicators of political evaluations, however, do not play a significant role in this accountability mechanism. Monetary policy should not react to changes in vote intentions or prime minister approval since these forms of evaluations are irrelevant for the independent central bank. Similarly, the elected government should get little or no credit for monetary policy choices and economic conditions since it is not responsible for them.

2.4 Competing Models of Accountability

We represent the preceding arguments as two different models of economically open democracies. The position that room to maneuver diminishes or even disappears when countries become increasingly integrated into the world economy implies that no political accountability

⁵ The expectations-enhanced Philips' curve represents the inverse relationship between growth and inflationary expectations. For a theoretical derivation of this Philips' curve from a dynamic stochastic general equilibrium model, see Galí and Monacelli (2005).

⁶ There is evidence that independent central banks are interested in citizen's evaluations of their work. After a 1997 Treasury Committee Report on Central Bank accountability, the BoE began a survey of the public's understanding of its activities and of how well it is doing in the public mind (Bank of England, Quarterly Bulletins, Summer 2001: 164-168; Summer 2003: 228-234). On the governments' central bank accountability studies see Leeper and Sterne (2002).

exists. In our “No Accountability” model, governments do not react to changes in popular evaluations of policy because the international economic constraints are too severe. When citizens are dissatisfied with economic outcomes, the government cannot lower interest rates or increase government spending to stimulate economic output because interest rates are set globally and desired public spending cannot be financed. Therefore, there is no causal connection from political evaluations to government policy and to macroeconomic outcomes. Citizens observe that the government does not have the means to change economic conditions and hence they do not base their evaluation of public authorities on macroeconomic performance. As a consequence there is no feedback from policy or macroeconomic outcomes to public opinion.

The predominant view in political science, our “Accountability” model, is that room to maneuver continues to exist in open economies. This implies that governments still can produce the macroeconomic outcomes desired by citizens. When the public is dissatisfied with macroeconomic outcomes, the government responds by adjusting fiscal and/or monetary policies to change real macroeconomic activity. The effects of these policy adjustments are strong and lasting. The public observes the policy changes and the changes effects on the macroeconomy. Government policies therefore have a persistent effect on popular evaluations both in non-electoral and pre-electoral periods because citizens benefit from the improving macroeconomic conditions. If accountability exists in open economies, we should observe a causal chain that connects popular evaluations to government policy to economic outcomes and back to evaluations. Table 1 summarizes the predictions from the two competing models.

<i>Model</i>	<i>Response in</i>	<i>Shock to</i>		
		Popular Evaluations	Government Policy	Economic Outcomes
No Accountability	Evaluations	–	No	Yes
	Policy	No	–	No
	Outcomes	No	No	–

Accountability	Evaluations	–	Yes	Yes
	Policy	Yes	–	Yes
	Outcomes	No	Yes	–

Table 1: Predictions of Competing Models of the Room to Manuever in Open Democracies

3. Research Design

3.1 The Case

The literature suggests that the room to maneuver and political accountability in economic policy has been evident in the United Kingdom. Mosley (2000: 751), for instance, argues that British elections in the 1990s were meaningful contests between parties with contending views about how Britain should exploit its room to maneuver in the world economy. The winning party therefore represents the preferences of the (plurality) majority of citizens and implements their desired economic policy. If the room to maneuver thesis holds, these policies should effectively influence economic developments and generate the outcomes that citizens prefer. Thus, a plurality or majority British citizens should be satisfied with policies and outcomes.

The British political system’s high clarity of responsibility further increases the degree of political accountability (for a discussion of clarity of responsibility in Britain, see Powell and Whitten 1993). The majority-plurality electoral system produces single-party governments that are fairly independent of other political actors. The unicameral legislature leads to a unified government and offers political opponents few opportunities to influence policy. There is no hidden bargaining during the policy formulation process as in other countries with coalition governments or strong vertical division of power. Citizens thus can assign policy choices to a single, specific political actor and hold this actor responsible for economic outcomes.

Similarly, policymakers in Britain can assess the public’s preferences more easily than governments in other countries. As the approval literature has shown, political support in systems with high clarity of responsibility depends significantly on voters’ assessment of their country’s economic performance (Anderson 2000; Powell and Whitten 1993; Whitten and Palmer 1999).

Among the major West European democracies, economic developments affect approval strongest in Britain (Lewis-Beck 1988). British governments thus can infer from political approval and evaluations of economic outcomes how citizens judge their performance. A decline in political support and pessimistic economic expectations signal to the government that citizens are dissatisfied with economic developments and prefer a policy change.

The United Kingdom therefore is a critical case and presents a natural experiment that allows us to assess whether accountability exists in open economies. If political accountability in fact existed in any economically open democracy, we should be able to observe it in the United Kingdom. And if we do not find political accountability in Britain, it is unlikely that accountability existed anywhere else.

To gauge the degree of accountability in Britain, we use multivariate time series analysis of monthly economic and political data from April 1984 to September 2006. Measures of economic openness show that by the late 1970s Britain was open to trade and capital flows. By Quinn's (2000) openness indicators, the British government had lifted nearly all restrictions to capital mobility and trade by 1979. The current and capital account openness measures reach their maximum values in 1979 and remain there until 1999 when the indicator ends. Quinn's measures also show that Britain was an open economy in relative terms. The indicator of overall openness increases from 3.5 in 1950 to the maximum value 14 in 1979. Average overall openness in OECD countries varies from 4.2 in 1950 to 9.7 in 1979 and 13.4 in 1999.⁷

Finally, as regards institutions, an analysis of British economic policy allows us to assess the impact of differing degrees of central bank independence on policymaking. During the first half of the 1990s, the incumbent Conservative Party blocked efforts to delegate monetary policy to an independent central bank. Between 1970 and 1997, the Bank of England was one of the least independent in the industrialized world (Bernhard 1998). The Bank was granted greater independence after the Labour Party's victory in the May 1997 general election (Bernhard 1998; 2002: chapter 7). We therefore can split our sample and examine how policymaking and its effects on outcomes differed under the two monetary policy regimes (before and after May 1997). At the same time, the U.K. is an exemplar of fiscal delegation (Hallerberg and Von Hagen 1999: exp. P.223). For our entire period of analysis the U.K. had strong finance ministers who took

⁷ Alternative measures, e.g. Chinn and Ito (2005), confirm that Britain was highly open to trade and financial flows during our period of analysis.

orders from prime ministers. The degree of transparency of fiscal policy making in the U.K. is quite high.⁸

3.2 The Open Political Economy Framework

To gauge the degree of accountability in Britain, we combine current research from political science and economics. Political scientists provide deep insights into the working of the polity and how economic developments influence politics and policies. Economics helps us understand how policy choices affect the macroeconomy and show which policies enhance economic welfare. But, both disciplines ignore the feedback of policies, citizen's preferences, and macroeconomic activity. They therefore are incomplete for analyzing political accountability.⁹

Economic voting models are the natural starting point for a framework that allows for endogeneity between the polity and the economy. These models show how voters *continuously* evaluate the economic outcomes of government policies and then hold policymakers accountable for them. If the economy is doing well (poorly), voters reward (punish) the government with higher (lower) political support for the governing party. The key economic variables measuring the state of the economy are unemployment, inflation, interest rates and the exchange rate (e.g. Hibbs 1982; Sanders 1991).

Recent research has increasingly focused on the role of subjective rather than objective evaluations, particularly for British political approval (Clarke et al. 2000; Clarke and Stewart 1995; Clarke et al. 1998; Sanders 1991; 2005). The literature suggests several indicators of subjective evaluations reflecting citizen's assessment of macroeconomic outcomes and government policy. These indicators include personal financial expectations (Sanders 1991; 2005), personal and national retrospections (Kiewiet and Rivers 1985); and, forward-looking assessments of economic forecasts rather than past economic outcomes (MacKuen et al. 1992). Clarke and Stewart (1995) assess these competing indicators and find that personal expectations subsume the personal retrospections, but not national expectations or national retrospections.

⁸ The U.K. ranks with France near the top of the Open Budget Index for the world's governments. See, *The Economist*, October 28, 2006, p. 114.

⁹ The only exception is Bernhard and Leblang (2006a). But their model does not include the macroeconomy.

The recent literature's shift toward subjective evaluations does not mean that objective indicators are irrelevant. Political scientists are aware that "economic forces appear to influence electors' attitudes towards the economy in two different, if complementary ways" (Sanders 1991: 238). Objective variables influence personal and national economic expectations, which then are transmitted to approval.

The new open macroeconomics literature generally refers to similar indicators reflecting objective domestic economic developments as economic voting models. Empirical models of a small open economy usually include measures of economic output, a price index, and monetary policy variables, such as short-term interest rates. The international economy is represented by foreign prices and foreign economic output. Exchange rates connect the domestic and the international economy (Cushman and Zha 1997; Eichenbaum and Evans 1995; Kim 2001). Depending on the specific research question, some studies add additional variables, such as the trade balance (Betts and Devereux 2000) or exports and imports (Cushman and Zha 1997; Kim 2001). These variables essentially reflect the key components of the dynamic stochastic general equilibrium models of small open economies (Betts and Devereux 2001; Galí and Monacelli 2005; Obstfeld and Rogoff 1995).

We use those variables that overlap in the political science and economics literature as a basis of our open political economy model. These variables include domestic output and prices, and the exchange rate. As in the open macroeconomics literature, we add an international economy that is represented by foreign output and price levels. This setup is consistent with the basic models that have been used in the open economy literature discussed above. The polity is represented by the key components of economic voting models. Personal and sociotropic economic expectations reflect how citizens subjectively assess the results from government policies. Vote intentions and prime minister approval capture how citizens evaluate overall government performance.

The policy sector that represents government policymaking includes domestic monetary and fiscal policy. Since most of these empirical open economy models focus on transmission of monetary policy, they generally neglect fiscal policy variables. The fiscal variable is important in our context because the political science literature emphasizes the role of fiscal policy for room to maneuver in open economies. To measure fiscal policy, we follow O'Mahony (2006), Clark and Hallerberg (2000), and Hallerberg and von Hagen (1999) and use an indicator of the public

sector's fiscal deficit. Such a deficit measure is appropriate for a test of the room to maneuver thesis because it captures both government expenditure and income. The discrepancy between the competing claims about room to maneuver in fiscal policy primarily arises from the studies' focus on taxes or government spending. A complete analysis of room to maneuver has to take into account both the income and the expenditure side.

Vote intentions (VI_t) capture the percentage of voters who respond that they intend to vote for the incumbent party. Prime minister approval (PM_t) measures the percentage of respondents who are satisfied with the performance of the prime minister. Subjective personal expectations (PE_t) are the difference between the proportion of people who expect that their personal financial situation will improve during the next year and the proportion of people who think that their situation will deteriorate. Subjective sociotropic expectations (SE_t) capture the difference between the proportion of people who expect that the national economic situation will improve and the proportion of people who think that the situation will worsen. To capture electoral dynamics, we use an electoral counter taking the value 1 in the month after each British general election and increasing linearly to the next general election.

We use variables from the United States as a proxy for the world economy. The exchange rate (XR_t) thus is the monthly average of the \$/£ nominal exchange rate; it corresponds to the number of U.S. Dollars per British Pound. To measure economic output, we use the monthly domestic and foreign Index of Industrial Production (IIP_t and $USIIP_t$). The domestic and foreign price levels (CPI_t and $USCPI_t$) are from the British and U.S. Consumer Price Indices. Domestic monetary and foreign monetary policies (IR_t and $USIR_t$) are the monthly average of short-term interest rates in the two countries. British fiscal policy is the level of public sector debt (G_t). This public sector debt index is based on the debt level reported by the government at the beginning of the sample period. We then construct a monthly indicator of government debt using data on the public sector net cash requirement. The net cash requirement indicates the amount that the British government borrows from domestic and foreign investors to finance the difference between public sector expenditures and receipts. For a detailed description of data sources and definitions, see Appendix I.

3.3 Empirical Model and Structural Identification

To test the competing claims about the degree of political accountability in open economies, we use Bayesian Structural Vector Autoregressive (B-SVAR) models. These are appropriate for a problem like ours where model scale, endogeneity, persistence, and specification uncertainty are present at the same time. B-SVAR models subsume more familiar models like VARs, ECMs, and VECMs allowing for sounder statistical inferences. Details of the B-SVAR model are described in Appendix II.

In a B-SVAR model our discussion of competing causal accounts of political accountability is represented by different contemporaneous and lagged relationships among the variables. The political and economic literatures imply a core set of relationships between the variables *within* the polity and the economy. The two competing causal accounts (chains)—the No Accountability and Accountability models—imply different contemporaneous relationships *across* the polity and the economy: the immediate impact of political shocks on economic variables and the immediate impact of economic shocks on political variables. Inferences about the direction, magnitude, and duration of shocks in key variables can be made with the B-SVAR models' impulse responses. These impulse responses reveal the *combined* contemporaneous and lagged relationships between the political and economic variables in the two models.

Tables 2 and 3 represent the contemporaneous relationships among the variables for the competing No Accountability and the Accountability models. Each row in the tables corresponds to an equation capturing the contemporaneous effect of the column variable on the row variable. Empty cells are restrictions that mean that the column variable is assumed to have no contemporaneous impact on the row equation. The X's represent "free parameters" meaning that the respective column variable can have an immediate impact on the row equation. The two competing causal chains imply different X's at the intersections of the policy and economy, the grey-shaded fields in the upper right and lower left of the model specifications in Tables 2 and 3.

We rely on government approval research in Britain (Clarke et al. 2000; Clarke and Stewart 1995) to identify the core political model in the lower right corner of each model in Tables 2 and 3. The literature suggests that a lower-triangularized, contemporaneous order of SE_t , PE_t , PM_t and VI_t is appropriate. The single-equation models of government approval used by researchers imply that both sociotropic and personal subjective economic expectations affect

approval and vote intentions contemporaneously (Clarke and Stewart 1995; Clarke et al. 1998).¹⁰ These models suggest that prime minister (PM) satisfaction instantaneously influences vote intentions. At the same time, PM satisfaction is weakly exogenous to vote intentions implying that there is no contemporaneous effect of VI_t on PM_t (Clarke et al. 2000; Clarke and Stewart 1995). These models also imply that citizens learn about objective economic indicators in the Production sector only with a delay (Clarke et al. 1998; Sanders 1991).¹¹

Following empirical models in macroeconomics, we divide the open economy into three sectors of equations that differ in terms of how fast they adjust to shocks in the other variables (Leeper et al. 1996). Variables in the “Information Sector” adjust to shocks instantaneously and include financial markets. These markets process new information about changes in other sectors rapidly. For both competing causal chains the Information Sector reacts instantaneously to shocks in the macropolity (Bernhard and Leblang 2006b). We do not require that policy is weakly exogenous. The “Policy Sector” represents the government reaction functions and specifies the variables to which policymakers respond immediately. Variables in the “Production Sector”, economic output and prices, adjust sluggishly to shocks in other variables.

Sector	Variable	XR_t	IR_t	$USIR_t$	G_t	CPI_t	IIP_t	$USCPI_t$	$USIIP_t$	SE_t	PE_t	PM_t	VI_t
Information	XR_t	X	X	X	X	X	X	X	X	X	X	X	X
Policy	IR_t	X	X	X	X					X	X	X	X
Policy	$USIR_t$	X		X									
Policy	G_t	X	X		X								
Production	CPI_t					X	X	X	X				

¹⁰ These models regress approval or vote intentions on the contemporaneous values of subjective expectations. Sanders (1991) uses a three month lag for personal expectations. Sanders (2005) introduces personal expectations without a lag.

¹¹ Sanders (1991) and Clarke and Stewart (1998) present models of vote intentions and government approval that include objective economic indicators that are lagged at least one period implying that there is no contemporaneous influence of the Production Sector on the political variables. This is consistent with Sims and Zha (2006) and Cushman and Zha (1997) where information about output and prices is immediately available neither to governments nor to voters. This restriction of contemporaneous relationships does not prevent voters from reacting to the real economy with a lag.

Production	IIP _t					X	X	X					
Production	USCPI _t						X	X					
Production	USIIP _t							X					
Macropolity	SE _t		X							X			
Macropolity	PE _t		X							X	X		
Macropolity	PM _t		X							X	X	X	
Macropolity	VI _t		X							X	X	X	X

Table 2: No Accountability Model

Sector	Variable	XR _t	IR _t	USIR _t	G _t	CPI _t	IIP _t	USCPI _t	USIIP _t	SE _t	PE _t	PM _t	VI _t
Information	XR _t	X	X	X	X	X	X	X	X	X	X	X	X
Policy	IR _t	X	X	X	X					X	X	X	X
Policy	USIR _t	X		X									
Policy	G _t	X	X		X					A	A	A	A
Production	CPI _t					X	X	X	X				
Production	IIP _t						X	X	X				
Production	USCPI _t							X	X				
Production	USIIP _t								X				
Macropolity	SE _t		X		A					X			
Macropolity	PE _t		X		A					X	X		
Macropolity	PM _t		X		A					X	X	X	
Macropolity	VI _t		X		A					X	X	X	X

Table 3: Accountability Model

We rely on Cushman and Zha (1997) and Sims and Zha (2006) to specify the speed of adjustment of the specific variables in the open economy. The exchange rate adjusts immediately to domestic and foreign economic variables. As these authors note, governments have immediate access to information on the exchange rate and the monetary policy of other governments. However, policymakers do observe data on output and prices with a lag and therefore they only react with a delay to shocks in those variables (Cushman and Zha 1997: 437-438; Sims and Zha 2006: 249). Open economy models are distinguished from closed economy models by variables that are likely to respond to changes in the foreign economy. Thus changes in U.S. monetary policy lead to an immediate reaction of the British monetary policy, but not the opposite. Similarly, the British Production Sector responds to the U.S. Production Sector, but not vice versa (Cushman and Zha 1997: 438).

We also include a fiscal policy variable G_t , unlike our prior analysis (Sattler et al. 2006). For monetary policy IR_t , we assume that policymakers do not have information about real economic developments within the same month. Fiscal policy therefore reacts to shocks in domestic and foreign output and prices with a delay. Unlike domestic monetary policy, fiscal policy in the domestic economy does not respond to foreign monetary policy shocks. The reaction functions for monetary and fiscal policy therefore differ because the parameter reflecting immediate domestic responses to foreign monetary shocks is unrestricted for the monetary equation, but it is assumed to be zero in the fiscal equation. We also assume that monetary and fiscal policies may react to each other instantaneously. We expect to observe little or no interaction between monetary and fiscal policy before 1997. This is when the government controlled both policy fields: monetary and fiscal policy are coordinated and hence will not be observed to respond to each other. After 1997 when the Bank of England became independent, it is possible that monetary policy reacts fiscal shocks more strongly, and vice versa. As recent research shows, the connection of IR_t and G_t may be strong when the policy preferences of the fiscal and the independent monetary authorities diverge significantly (Dixit and Lambertini 2000; 2003). The matrix of contemporaneous economic relationships is in the upper-left field of the models in Tables 2 and 3.¹²

The two competing causal accounts described in the previous section now can be represented as two distinct contemporaneous specifications, or two distinct contemporaneous causal structures in B-SVAR models. We rely on our own previous work (Sattler et al. 2006) to specify the contemporaneous relationships that denote accountability in monetary policy. This research showed that a model that allows for a) a contemporaneous reaction of monetary policy to the political variables and b) contemporaneous feedback from monetary policy to political evaluations is most appropriate. The cells representing the effect of the Macropolity on monetary policy and feedback through the Macropolity in the polity-economy intersections (grey-shaded areas) thus are unrestricted.

¹² The Cushman/Zha identification does not allow for contemporaneous responses of policy to changes in the Production sector. This allows governments to respond to shocks to output and prices. There can be a *lagged* relationship between production variables and policy where the countries respond to output and prices with a lag because this information is received later.

The identification of the polity-economy intersections in the upper right and lower left part of Table 2 represents the idea that no accountability in fiscal policy may exist in the open economy. The distinguishing feature of this model is that the fiscal authority does not react immediately to political shocks. The cells representing the influence of the Macropolity on fiscal policy in the upper right corner are blank. Similarly, there is no impact of fiscal policy on the polity, as the cells for the impact of fiscal policy on the Macropolity in the lower left corner of Table 2 are empty. The model in Table 2 thus reflects the idea that accountability in monetary policy *may* exist, but there is no accountability in fiscal policy.

The model in Table 3 modifies the identification restrictions in the polity-economy intersections of this No Accountability model. This modification represents the “Accountability Model” –the model that is necessary for Room to Maneuver – and allows the government to react immediately to political shocks. The specification in the upper right corner of Table 3 shows the modification of the matrix of contemporaneous relationships that leaves the fiscal responses to political shocks unrestricted. The Accountability model also holds that the policy choices are immediately evaluated, and feedback through the Macropolity exists. For such feedback to exist, the contemporaneous relationships denoting the Macropolity’s reaction to fiscal shocks are unrestricted in the Accountability model. The A’s in Table 3 represent these additional free parameters that are necessary to allow for such contemporaneous government reaction and feedback. The Accountability model thus has eight more free parameters than the No Accountability model in Table 2.

3.4 Estimation

Because of the change that occurred in the monetary policy regime in the U.K. in 1997, we estimated four B-SVAR models. The B-SVAR models use the No Accountability and Accountability contemporaneous identification matrices specified earlier. Each of these structural models is estimated using the monthly data series for the periods 1984:4-1997:4 and 1997:5-2006:9. We will refer to the earlier period as the “Tory” period since the Thatcher and Major governments were in power, and to the latter period as the “Labour” period since the Blair governments have been in power. The interest rates, the exchange rate and the political variables enter the model as proportions and the other economic variables enter the model in natural

logarithms. The four B-SVAR models all include six lags of the 12 endogenous variables in each equation of the models. A single exogenous variable that is a local trend for the election periods is included in each equation of the models as well. This variable counts the number of months that each government is in power and resets to zero after each British election. It allows us to gauge whether electorally induced monetary and fiscal “cycles” (Clark and Hallerberg 2000) are evident in either period.

The prior distribution for the B-SVAR model is that proposed by Sims and Zha (1998); it is consistent with the beliefs revealed by political scientists like Clarke, Stewart, and Sanders.¹³ The B-SVAR models with the Sims-Zha prior were estimated and their structural parameters were sampled using a Gibbs sampler for B-SVAR proposed by Waggoner and Zha (2003a). Details of the estimation can be found in Waggoner and Zha (2003a) , Brandt and Freeman (2006b), and Sattler, Freeman and Brandt (2006).

All of the results reported here are based on a posterior sample of 20000 draws of the model parameters after an initial burn-in of 5000 discarded draws. Analysis of the posterior densities of the parameters (via traceplots, Geweke diagnostics, etc.) indicates that the parameter draws have converged to stationary values. Earlier sensitivity analyses (for a similar model without fiscal policy) showed that the results were generally insensitive to the specification of the hyperparameters for the prior distribution for the B-SVAR model.

4. Results

4.1 Comparisons of Structural Specifications over the Tory and Labour Sub-Samples

To compare the competing Accountability and No Accountability structural models for the Labour versus Tory time periods one can first look at Bayesian posterior odds measures.

¹³ The hyperparameter values for the prior are set at the standard reference values . The values are $\lambda_0=0.6$, $\lambda_1=0.1$, $\lambda_3=1$, $\lambda_4=0.1$, $\lambda_5=0.05$, $\mu_5=5$, $\mu_6=5$. In an earlier paper, Sattler, Freeman and Brandt (2006) we conducted a sensitivity analysis using the reduced form representation of a similar model without the fiscal policy equation. This sensitivity analysis employed over 10,000 different sets of these hyperparameters and the prior employed here is among the best fitting from this sensitivity analysis (in terms of a log MDD criterion). Other hyperparameter values yield qualitatively similar inferences to those reported here. Therefore we believe that the results reported here are not sensitive to the prior we are using.

These measures compare the posterior odds that one model specification better explains the data than another. These posterior odds measures are similar to a likelihood ratio statistic.

The posterior odds of the model specifications can be computed from the differences of the log marginal data density (known also as marginal log likelihood) of the model. The log marginal data density of the model is the log probability of the sample data conditional on the model and its parameters and it measures the log posterior probability that the model explains the data. The difference of the log marginal data densities for two models is known as the log Bayes factor. This measures the weight of the evidence or posterior odds of one model versus another (Kass and Raftery 1995).

Table 4 presents the log marginal data densities and log Bayes factors for the four estimated B-SVAR models.¹⁴ The log Bayes factor values are computed by finding the difference of the No Accountability and Accountability models log marginal data density measures in each time period. The log Bayes factor values are large---31 and 46, for the pair of models in the Tory and Labour periods, respectively. These values are strong evidence that the log odds of the Accountability models are better than the log odds of the No Accountability models. This first conclusion from our Bayesian time series analysis therefore is that, for the U.K., the Accountability structural specification is superior to the No Accountability specification. Since these models differ in their contemporaneous structural specifications of the relationships among the macropolity and fiscal policy, this is strong evidence in favor of a model that allows for contemporaneous feedback between these two sets of variables. Given the strong weight of the evidence in favor of the Accountability model, the next section focuses exclusively on the dynamics of the relationships for the Accountability model over the two time periods.

Model	Sample Period	
	Tory (1984:4-1997:4)	Labour (1997:5-2006:9)
No Accountability	6886	3914
Accountability	6917	3960
Log Bayes factor	31	46

¹⁴ The log marginal data densities were estimated using a modified harmonic mean method suggested by Geweke (1999) and Gefland and Dey (1994).

Table 4: Log marginal data densities for the Four B-SVAR Models for the Tory and Labour Periods and Log Bayes Factors Comparing the Odds of the Accountability and No Accountability Models Over Each Period.

4.2 Dynamic Inferences

The dynamics of the Accountability models for the Tory versus Labour government periods can be evaluated using impulse response functions (IRFs). IRFs allow us to trace out the response of a standardized shock in each variable in each equation over time. These impulse response functions are computed from the reduced form representation of the two accountability models, one each for the Tory and Labour periods. The IRFs presented here are computed from the fitted B-SVAR models and summarized with likelihood-based error bands (Brandt and Freeman 2006b; Sims and Zha 1999). The responses are median estimates over 24 months with 68% likelihood-based error bands.¹⁵

The analysis of accountability concerns a subset of the $12 \times 12 = 144$ impulse responses for each B-SVAR model. These subsets are 1) monetary policy reactions to political evaluations (the macropolicy variables), 2) fiscal policy reactions to political evaluations, 3) public responses to monetary policy, 4) the public's responses to fiscal policy, 5) reactions of the real economy to fiscal and monetary policy shocks, and 6) reactions of the public to shocks to the real economy.

For each of these six sets of IRFs, the Tory and Labour period responses from the Accountability model will be presented together. The Tory period (1984:4-1997:4) Accountability model responses are represented with solid lines with 68% error bands and the Labour period (1997:5-2006:9) Accountability model responses are represented with dashed lines with 68% error bands. Because these are IRFs for a structural model, the shocks to each equation

¹⁵ All of the responses are based on the 20000 draws from the structural parameters of the model. These are mapped into the reduced form parameters to compute the IRFs. The likelihood-based error bands are from the eigendecomposition of each IRF shock-response. The eigendecompositions first component of each IRF shock-response combination is used to compute the width of the error bands. These first components of each response explain over 90% of the variation in the responses over 24 months. These error bands thus differ from Sattler et al. (2006) which used empirical percentiles for the error bands. Further, note that the split and shorter samples used here mean that the empirical percentile error bands would be much larger in this paper, compared to Sattler et al. (2006). This means that we need to better account for the serial correlation of the responses, which the eigendecomposition method does.

do not necessarily always have the same sign (i.e., are not positive). In B-SVAR models, the likelihood is invariant to the signs of the structural shocks, so it can be the case that a positive structural shock to one equation implies a negative structural shock to another equation (e.g., shocks to negatively correlated series will have opposite signs). For the two B-SVAR Accountability models the pattern of the signs of the shocks across the equations is not the same across the two models. While one might normalize the shocks to have similar signs, this ignores the cross equation sign patterns that are important for understanding monetary-fiscal policy interactions and accountability across the Tory and Labour regimes. Thus the discussion below takes care to explain the direction of the shocks and pattern of responses for each equation.¹⁶

Figure 1 shows the response of UK interest rates to shocks in the macropolicy variables. Since the own shock to interest rates is negative in both the Tory and Labor periods of the accountability models, these responses are the reactions to one standard deviation *declines* in sociotropic and personal expectations, prime ministerial support, and vote intentions. In both the 1984-1997 and 1997-2006 periods, a decline in sociotropic expectations leads to an increase in interest rates, while the reverse happens for personal expectations. A negative shock to or decline in prime ministerial support lowers interest rates in the Tory period but increases interest rates in the Labour period. Note that the impact in the latter period when the Bank of England is independent is about a third of the reaction seen in the earlier period. Finally, a decrease in vote intentions leads to an increase in interest rates in the Tory period, but no real change in interest rates in the later Labour period. These latter interest rate responses support the idea that as the central bank became more independent after 1997, the impacts of public approval of the government and vote intentions on interest rates diminished.

Figure 2 shows the response of our fiscal policy index to shocks in the four macropolicy variables. In the Tory (Labour) period model these shocks enter the equation negatively (positively). So the impact of a standard deviation negative shock in sociotropic expectations in the Tory period is an increase in government spending by an initial 0.15% which decays over 24

¹⁶ The signs of the diagonal $A(0)$ matrices are normalized to have the same signs in the draws from the Gibbs sampler. However, the pattern of signs used differs across the $A(0)$ matrices for the Accountability model for the Tory and Labour periods. For more detail on the sign normalization used in Gibbs sampling B-SVAR models see Waggoner and Zha (2003b). The pattern of the signs for the 12 elements of the Accountability model diagonal of the $A(0)$ matrices in the Tory (Labour) period model is +, -, -, -, -, -, -, -, -, -, -, -, - (+, -, -, +, -, -, -, -, -, -, +, +). So there is no simple sign renormalization to make the models for the two periods easily comparable.

months, while a one standard deviation positive shock in sociotropic expectations in the Labour period lowers government spending by an initial 0.4% which decays more slowly over 24 months. The conclusion from this response is that fiscal policy became more responsive to changes in sociotropic expectations after 1997, since the magnitude of the response is larger and decays more slowly. The response of fiscal policy to a negative shock in personal expectations in the Tory period is negative. For the Labour period, this response is to an *increase* or positive shock in personal expectations. Thus, the reaction of government spending reverses sign as personal expectations shocks enter the fiscal policy equation differently across the two periods. This same response pattern is seen in the fiscal policy response to prime ministerial support and vote intention shocks. Note however that the fiscal policy response to these shocks is nearly twice as large in the post-1997 period as in the pre-1997 period models. This is consistent with the idea that the government has to rely on fiscal policy to a greater extent than monetary policy in the aftermath of the Bank of England becoming independent.

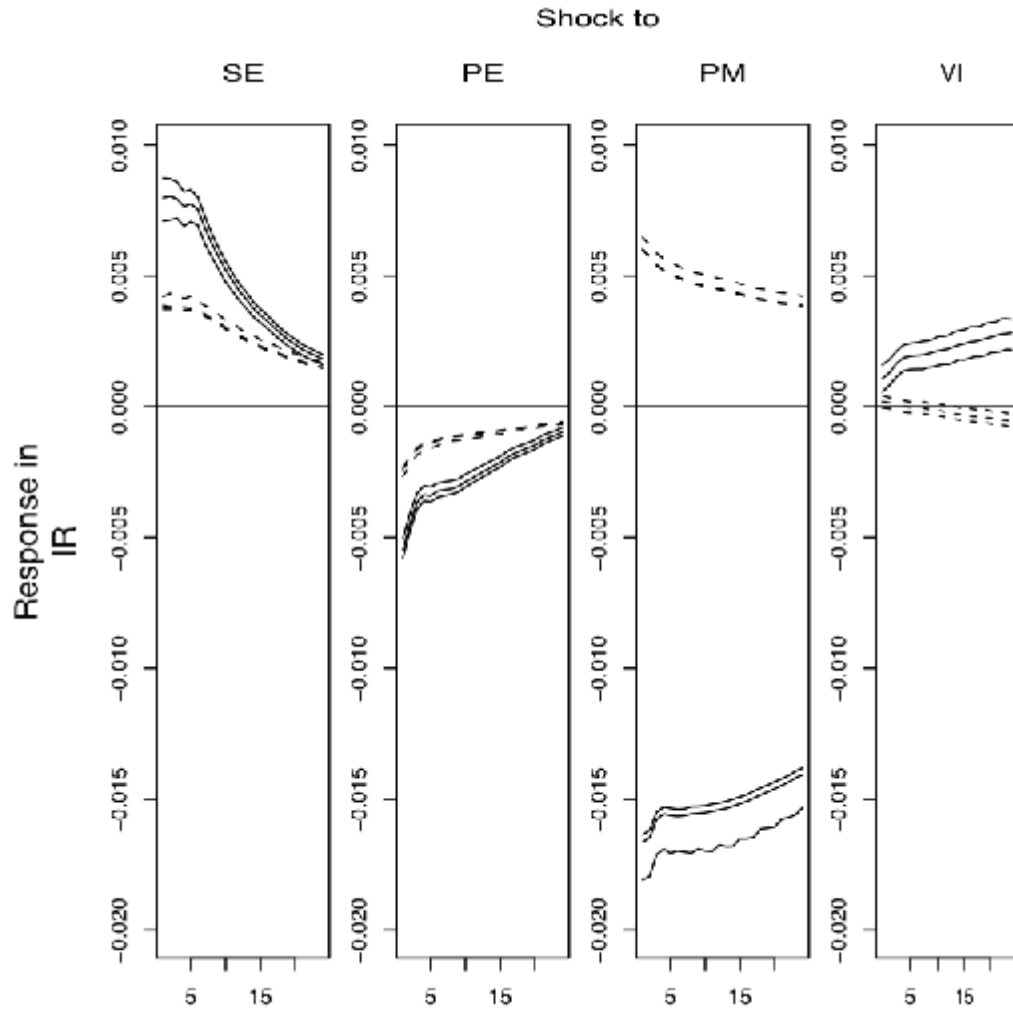


Figure 1: Response of UK interest rates to negative shocks to the macropolity variables. Solid (dashed) lines are responses for the 1984-1997 (1997-2006) period accountability model. Responses are median estimates with 68% error bands computed via Sims and Zha's (1999) eigendecomposition method.

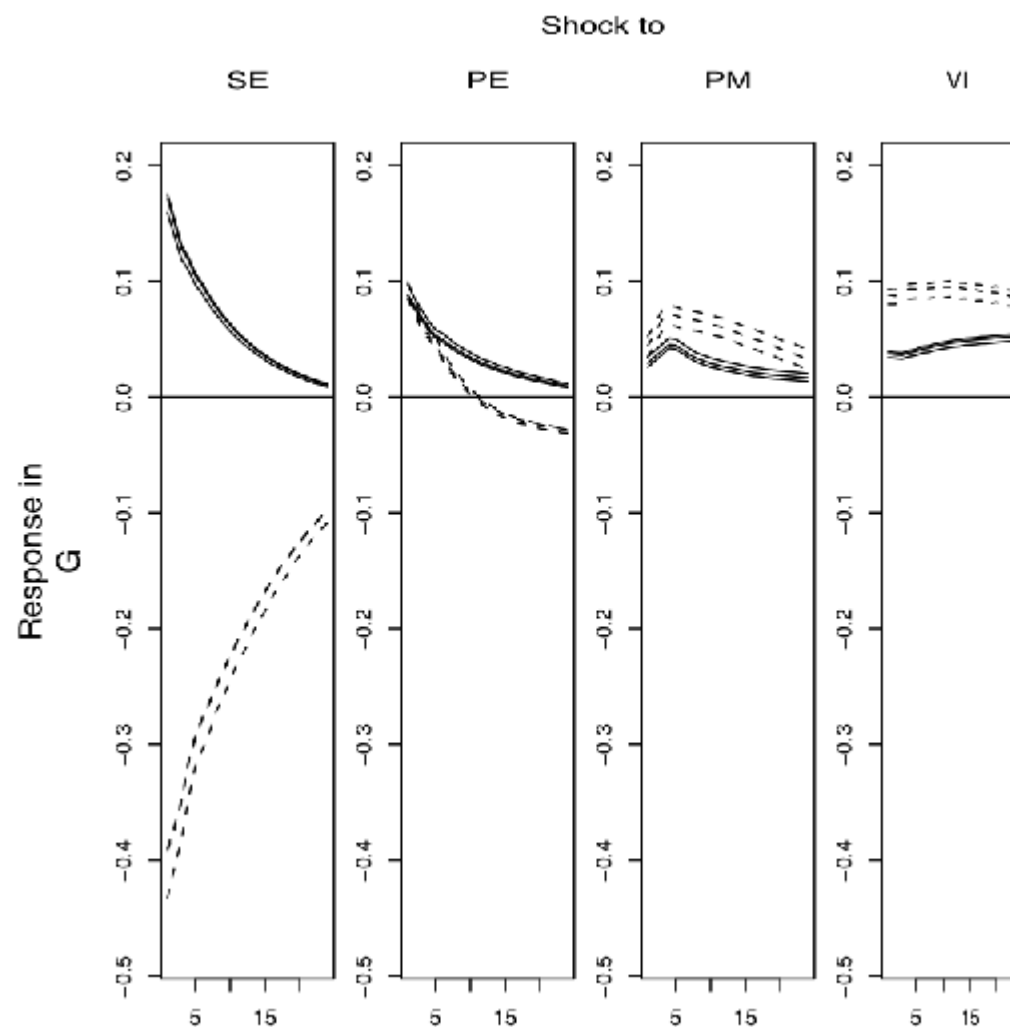


Figure 2: Response of UK public sector debt index (fiscal policy) to shocks to the macropolicy variables. Solid (dashed) lines are responses for the 1984-1997 (1997-2006) period accountability model. One standard deviation structural shocks enter the Tory (Labour) period equation with negatively (positively). Responses are median estimates with 68% error bands computed via Sims and Zha's (1999) eigendecomposition method.

Figure 3 shows the responses of the macropolity variables to policy innovations in interest rates and fiscal policy. Interest rate shocks have no or small effects on the sociotropic or personal expectations equations in either period. The policy shocks enter the prime ministerial support and vote intention equations as negative (positive) one standard deviation changes in the Tory (Labour) period. So surprise decreases in interest rates lead to higher prime ministerial support in the Tory period, but surprise increases in interest rates generate the same response in the Labour period. The Labour period prime ministerial support response is about twice as large as that seen in the earlier period. Vote intentions respond in a similar fashion: negative shocks in interest rates increase vote intentions for the government party in the Tory period. Positive shocks in interest rates *decrease* vote intentions in the Labour period. So the general relationship is the same: higher interest rates lower vote intentions for the government party, but this effect is weaker in the latter period of the data, perhaps because citizens know that elected officials enjoy less control over monetary policy. Our results also indicate that conservative governments receive more support when there are lower interest rates while liberal governments receive less support when there are higher interest rates.

The responses of the macropolity to fiscal policy shocks are shown in the second column of Figure 3. Fiscal policy shocks in both periods are negative in the sociotropic and personal expectations equations. Thus, fiscal policy contractions initially lower (increase) sociotropic expectations in the Labour (Tory) periods. These effects are both initially negative, but the Labour period sociotropic expectations response to fiscal contractions becomes positive after 10 months. The negative fiscal policy shocks to the personal expectations equation produce different initial and delayed responses. As fiscal policy contracts in the Tory period, personal expectations decline and then become positive after about 5 months. During the Labour period, the initial response is positive and increases slowly over 24 months. In the main, fiscal contraction leads eventually to higher personal expectations in the Tory period than in the Labour period with the differences emerging after 15 months.

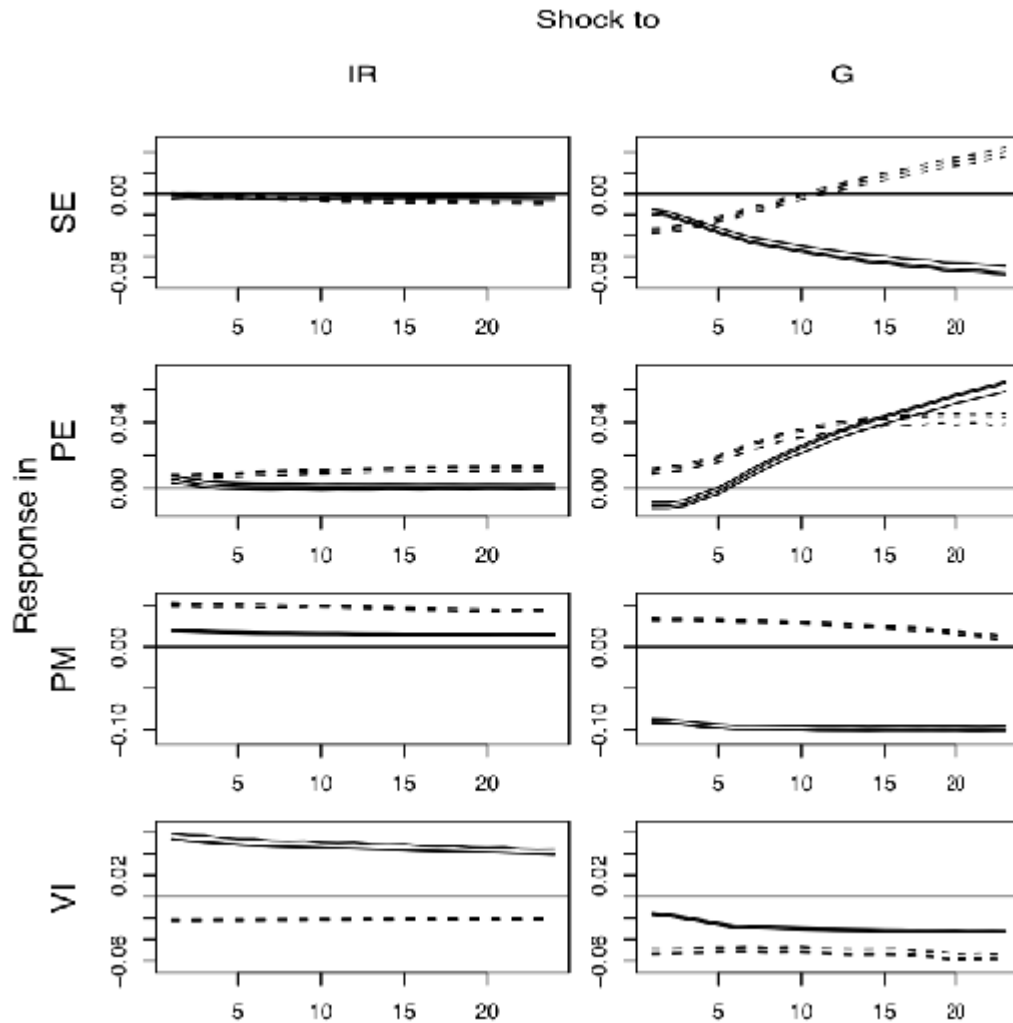


Figure 3: Responses of sociotropic expectations (SE), personal expectations (PE), prime ministerial support (PM), and vote intentions (VI) to shocks to the UK interest rate and net cash index (fiscal policy) variables. Solid (dashed) lines are responses for the 1984-1997 (1997-2006) period accountability model. One standard deviation structural shocks enter all of the Tory period equations with negatively. One standard deviation structural shocks enter the SE and PE (PM and VI) equations negatively (positively) in the Labour period. Responses are median estimates with 68% error bands computed via Sims and Zha's (1999) eigendecomposition method.

The responses of prime ministerial support and vote intentions to fiscal policy changes also are shown in Figure 3. Shocks to these two equations enter as contractions (expansions) in fiscal policy for the Tory (Labour) periods. So a surprise contraction in fiscal policy generates a decline in prime ministerial support and vote intentions in the Tory period. In the Labour period, an unexpected fiscal expansion increases prime ministerial support, but lowers vote intentions. This supports the argument that the impacts of fiscal policy are inverted in the Labour versus Tory periods, since contractions (expansions) in fiscal policy generate different signed vote intention responses.

Figure 4 shows the UK real economy responses to innovations in monetary and fiscal policy. The shocks enter the output and price equations with negative signs, so the shocks are decreases in interest rates and fiscal contractions, respectively. Although we find that policy shocks influence output and prices, these effects are tiny. A one standard deviation change in the policy variables causes a maximum change in price levels of -0.0001% for monetary and about -0.00025% for fiscal policy over a period of 24 months. The maximum change in output to the same shocks is about -0.00003% for monetary and about -0.00005% for fiscal policy over the same period. The models thus suggest that policy was largely ineffective and the governments capacity to shape real economic outcomes was limited. By design there is no instantaneous effect of interest rate cuts on prices or output. For the Tory period the decline in interest rates increases output with a lag and lasts for about eight months. This surge in output is matched by a decline in prices possibly because the surprise in output must then be absorbed by the economy. Output then begins to decline as the economy adjusts to the falling prices. After about 10 months This may be an expectational response: citizens realize that the central bank policy will spur growth and potentially lead to oversupply and thus lower prices. While interest rate cuts lead to higher output (IIP) in the Tory period model, a similar response is not seen in the Labour government period where the effects of interest rate cuts on output are virtually zero. This is consistent with the post-1997 independence of the Bank of England.

Fiscal policy contractions lead to strictly lower prices in the Tory period model, but increased prices in the Labour period model. Note that the price increases from fiscal policy contraction last over 15 months in the Labour period model. This is evidence of that the Labour fiscal policies have a different trajectory over time when compared to the Tory policies. In the main, the 24 month responses of fiscal policy show differences across the two governments.

Finally, fiscal policy contractions lead to lower production in the Tory period. However, for the Labour period model, industrial production increases for about 20 months and then declines. Comparing the responses in Figure 4 the shifts in central bank policy and fiscal policy are clear: the room to maneuver shifts from monetary policy under the Tory governments to fiscal policy under the later Labour governments. These results on fiscal policy shocks are clearly anomalous. Future work will look at possible additions to the model that address these results. Examples include allowing IIP to be contemporaneously related to G.

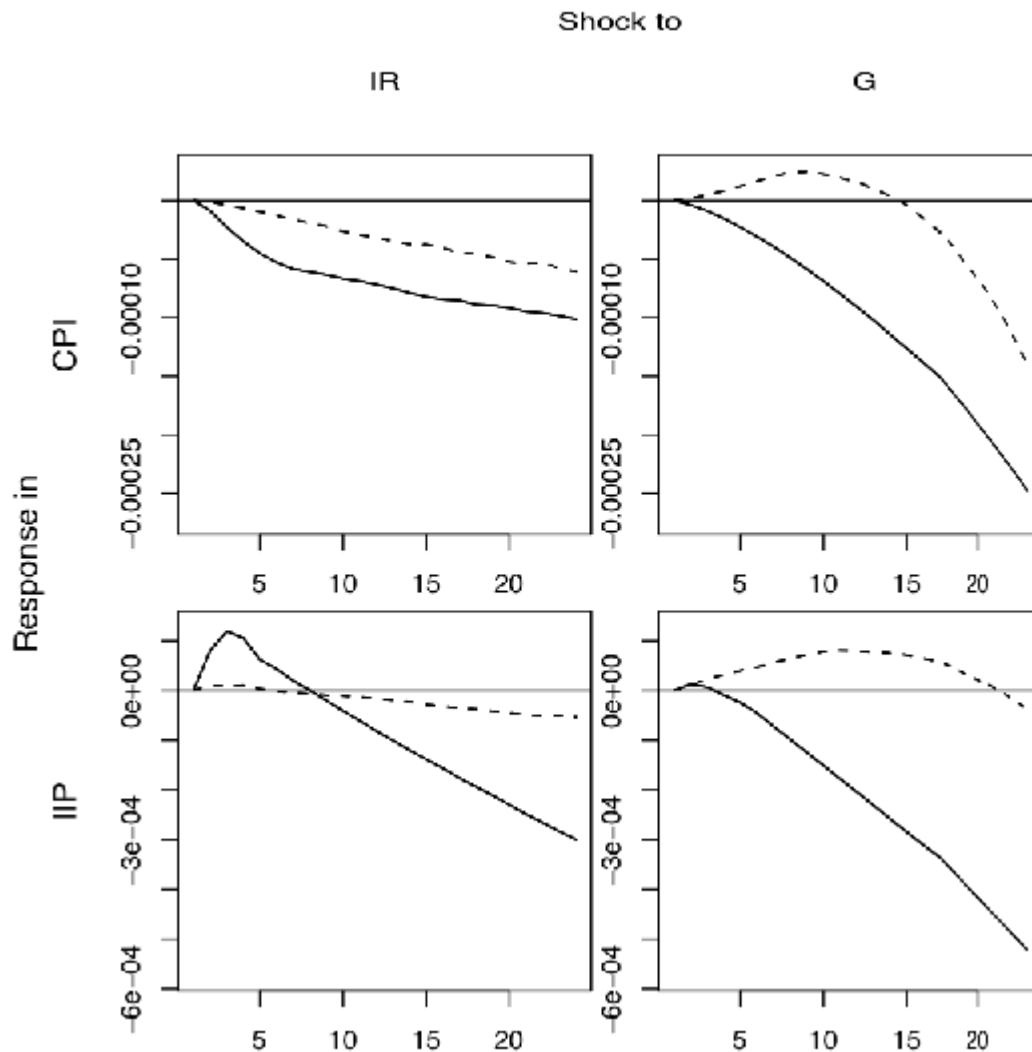


Figure 4: Response of UK real economy to shocks to the interest rate and fiscal policy variables. Solid (dashed) lines are responses for the 1984-1997 (1997-2006) period accountability model. Structural shocks enter the CPI and IIP equations with negative signs. Responses are median estimates with 68% error bands computed via Sims and Zha's (1999) eigendecomposition method.

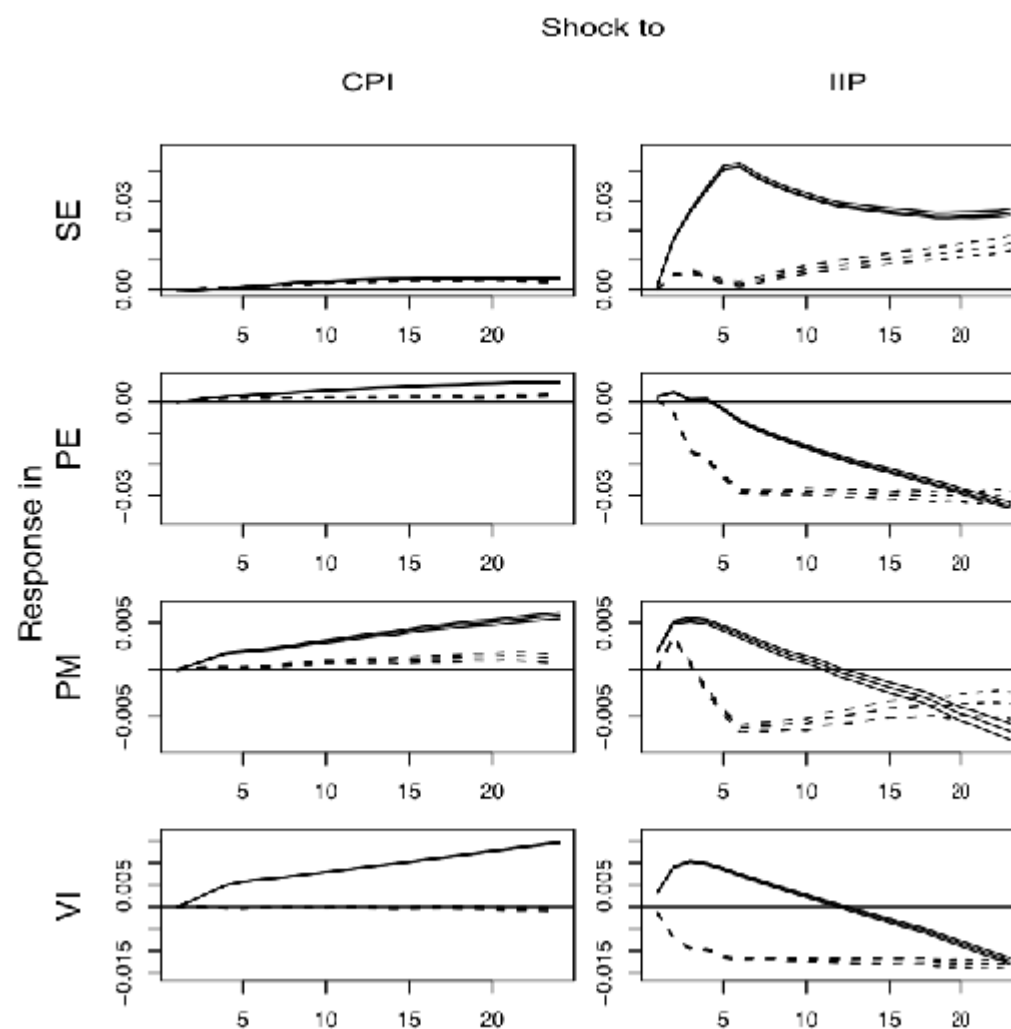


Figure 5: Responses of sociotropic expectations (SE), personal expectations (PE), prime ministerial support (PM), and vote intentions (VI) to shocks to the UK real economy. Solid (dashed) lines are responses for the 1984-1997 (1997-2006) period accountability model. One standard deviation structural shocks enter all of the Tory period equations with negatively. One standard deviation structural shocks enter the SE and PE (PM and VI) equations negatively (positively) in the Labour period. Responses are median estimates with 68% error bands computed via Sims and Zha's (1999) eigendecomposition method.

Figure 5 shows the final part of the accountability chain: the impacts of the real economy on the macropolity variables. The price (CPI) and production (IIP) shocks enter the sociotropic and personal expectations equations as deflationary impacts. Price deflation thus has very weak positive impacts on expectations over 24 months. The impacts of negative shocks in production are more complex. Declines in production generate higher sociotropic expectations. This Tory period response is nearly four times larger than the Labour period response. This makes sense if one considers that higher sociotropic expectations mean that people feel that *others* are doing better—or that as the economy contracts that people think they are worse off than others. Personal expectations decline quickly in response to the surprise drop in production. During the Tory period, the decline in personal expectations initially is small but after about 5 months drops rapidly for the next 24 months. During the Labour period model, the drop in personal expectations from a negative shock in IIP is nearly immediate and reaches its “bottom” after about 6 months. Thus, the reaction time of personal expectations differs greatly across the two governments and reflects how much more people see their personal circumstances tied to the economy in the recent Labour governments.

The prime ministerial support and vote intention equations have shocks that enter the Accountability model with different signs across the two periods. Negative (positive) shocks enter these equations in the Tory (Labour) period of the model. Thus, as prices drop in the Tory period, prime ministerial support and vote intentions rise, presumably as (Labour) voters are willing to cross-over and reward the government. In the Labour government periods, similar shocks generate tiny responses that are hardly different from zero. Thus, one sees that during the Tory period there was significant sensitivity to prices for both measures of government support.

The reactions of prime ministerial support and vote intentions to production shocks are much stronger. As production declines in the Tory period model, prime ministerial support and vote intentions are initially positive. This decays over about a year, eventually leading a slip in government support that is equal to the initial increase. Thus, short term declines in production under the Tory period model are met with a rise in government support, but this slips away as the real economy continues to falter. Thus, public evaluations of the government (versus personal and sociotropic expectations) respond to the real economy with a longer lag. The responses of the government support variables to the positive shocks or production expansions in the Labour period model have a different pattern. Initially, prime ministerial support rises, but it quickly

drops. The same negative pattern is seen in vote intentions. Industrial production increases actually hurt the Labour government support over a two-year period. This response, like those seen for the real economy is also anomalous because we would expect different signs. One might conjecture that the Labour period governments concern with globalization and reduced control over monetary policy may make the public concerned about other economic and policy issues.

The coefficients on our electoral dummy variables allow us to assess competing results about the existence of pre-electoral or “electorally induced” policy cycles. The densities for these coefficients presented in Figure 6. According to Clarke and Hallerberg (2000), because for most of the Tory period, the U.K. had a dependent central bank, capital mobility, and a flexible exchange, we should find pre-electoral monetary effects only.¹⁷ The results for the IR and G equations are consistent with this prediction; the coefficient in the interest rate equation indicates that in the run up to elections Tories lowered interest rates while they made no changes in fiscal policy. This is inconsistent with O'Mahony's (2006) new results which predicts that because of Britain's trade openness and flexible exchange rates, pre-electoral fiscal expansions should occur. In contrast the results for the Labour period are more consistent with O'Mahoney's argument; they contradict Clark and Hallerberg. The coefficient on the electoral dummy in the G equation in the period 1997-2006 is nonzero but, surprisingly, negative indicating a fiscal contraction in the run up to elections. There also is evidence of pre-electoral monetary effects—an anomalous rise in interest rates—in this period. Because the Bank of England is independent in this period of capital mobility and flexible exchange rate Clark and Hallerberg predict neither kind of effect.

¹⁷ According the Reinhard and Rogoff (2004) index, the UK had flexible exchange rates between 1984 and September 1990; relatively fixed exchanges between September 1990 and the end of 1992; and then flexible exchange rates until 2001.

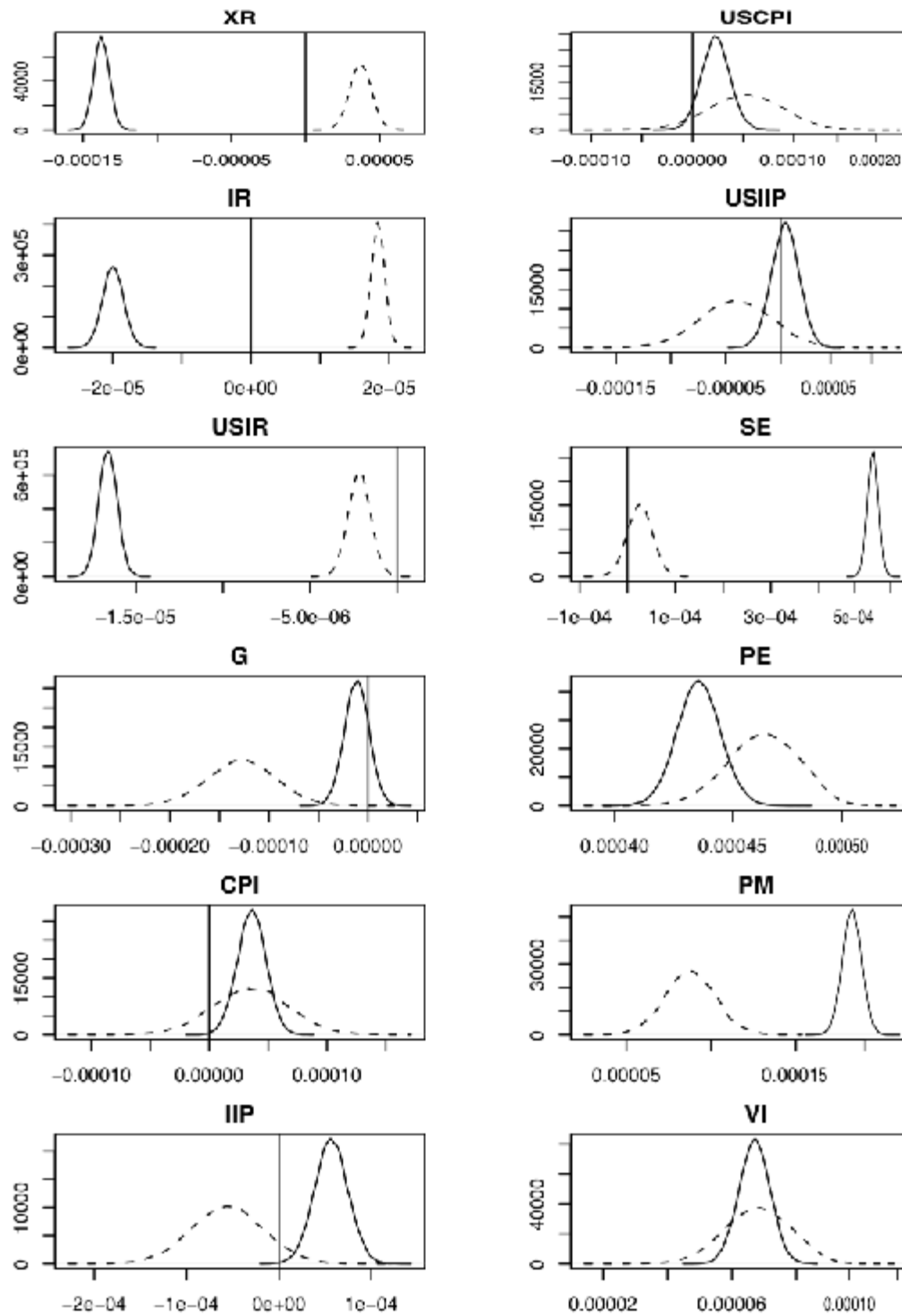


Figure 6: Reduced form election coefficient densities for the Tory and Labour period accountability models. Solid (dashed) lines are election coefficient densities for the Tory (Labour) period model.

5. Conclusion

Our results are only partially consistent with the room to maneuver thesis. We find that the British government was responsive to changes in political evaluations of policies and outcomes. The public thus can induce policy changes and exerts some influence over policymaking. Voters then react to policy changes through changes in political support for the government. But there is only little evidence that the government can effectively influence real economy outcomes. The effects of monetary and fiscal policy on economic output and prices are negligible. Therefore, the accountability mechanism largely works outside the real economy. In terms of the full relationship between the economy and the policy described in Figure 1, there is only little transmission of policy through the economy. The links from policy to the economy are weak. The reason for this main finding seems to be that the public simply does not appreciate the limited impact that economic policy has on the real economy, regardless of central bank independence.

Future research should address a number of anomalies that are inconsistent with theoretical expectations. Refinements of the structural identification schemes can help to assess the dynamic relationship of political and economic processes further. We will also continue to evaluate the impact of different priors on the estimation results. Finally, alternative measures of fiscal policy may help to better understand the use of fiscal policy instruments and economic policymaking in general.

Appendix I: Data Description and Sources

Political Variables

The political series are from different polling institutes in Britain. Vote intentions (VI_t), prime minister approval (PM_t) and subjective sociotropic expectations (SE_t) are from MORI. Vote intentions capture the percentage of voters who respond that they intend to vote for the incumbent party.¹⁸ Prime minister approval measures the percentage of respondents who are satisfied with the performance of the Prime Minister.¹⁹ Subjective sociotropic expectations capture the difference between the proportion of people who expect that the national economic situation will improve and the proportion of people who think that the situation will worsen.²⁰

Subjective personal expectations (PE_t) are the difference between the proportion of people who expect that their personal financial situation will improve during the next year and the proportion of people who think that their situation will deteriorate. The data are from the Gallup Organization (King and Wybrow 2001) until December 2002 and from YouGov for January 2003 onwards.²¹ The series has to be spliced together from different sources because Gallup stopped collect these data in 2003, but YouGov only started its survey in 2002. Generally, the YouGov series of personal expectations is 11 percentage points lower than the equivalent Gallup series. An adjustment factor of +11 is added to the YouGov series to make the data comparable (Sanders 2005: Appendix). We are grateful to Harold Clarke for providing these data.

Economic Variables

The exchange rate XR_t is from the database of the Bank of England. It is the monthly average of the \$/£ nominal exchange rate. The British Index of Industrial Production (IIP_t) is from the Office of National Statistics time series database. U.S. Index of Industrial Production ($USIIP_t$) is provided by the Federal Reserve Bank. Consumer Prices (CPI_t) are from the IMF

¹⁸ <http://www.ipsos-mori.com/polls/trends/voting-all-trends.shtml>

¹⁹ <http://www.ipsos-mori.com/polls/trends/satisfac.shtml>

²⁰ <http://www.ipsos-mori.com/polls/trends/economy.shtml>

²¹ <http://www.yougov.com>

International Financial Statistics until December 2003 and from the Office of National Statistics. U.S. Consumer Prices (USCPI_t) are from the Bureau of Labor Statistics.

Short-term interest rates (IR_t) are the Overnight Interbank Rate from the Bank of England's database. For the United States, we use the effective Federal Funds Rate (USIR_t) from the Federal Reserve Bank. To measure fiscal policy, we construct a debt index (G_t) from the monthly series on public sector net cash requirement from the Office of National Statistics, which was the main monthly fiscal indicator before 1998. As starting point, we use the debt level in March 1984 and add the monthly net cash requirements.²² This yields a monthly series of public sector debt from 1984 to 2006. To construct the index, we set January 2000 to 100 and recalculate the levels of the index using the monthly growth rates of the debt series in Pounds.

Appendix II: B-SVAR Model

The Bayesian structural vector autoregression (B-SVAR) model employed here is a multivariate time series model of the form

$$y(t)A(0) + \sum_{j=1}^p y(t-j)A(j) = Z(t)D + e(t) \quad (1)$$

for $t = 1, \dots, T$. Here, $A(0)$ is an $m \times m$ matrix that defines the contemporaneous relationships among the endogenous variables, $y(t)$ is an $1 \times m$ vector of the endogenous variables at time t , $A(j)$ are the $m \times m$ matrices of the structural coefficients for the lagged endogenous variables $y(t-j)$ at lag $t-j$, $Z(t)$ is an $1 \times k$ matrix of the exogenous variables (including a constant), D is a $k \times m$ matrix of the structural coefficients for the exogenous variables and $e(t)$ is an $1 \times m$ vector of structural shocks that are distributed $e(t) \sim N(0, I)$ where I is $m \times m$. Note that in this notation, the equations correspond to the columns, so the $A(0)$ matrix is the transpose of that presented in Tables 2 and 3.

Two sets of coefficients in it need to be distinguished. The first are the coefficients for the lagged or past values of each variable, $A(j)$, $j = 1, \dots, p$. These coefficients describe how the dynamics of past values are related to the current values of each variable. The second are the coefficients for the *contemporaneous* relationships, (the “structure”) among the variables, $A(0)$. The matrix of $A(0)$ coefficients describes how the variables are interrelated to each other in each

²² Public sector debt was collected only on a quarterly basis before 1993.

time period (thus the time “0” impact). These free parameters in these A(0) structures are defined in Tables 2 and 3

Since this is a structural model, numerical methods are needed to solve for the parameters. We employ a Bayesian prior in this estimation, detailed below.

Prior and Posterior

The prior for the A(0) and A(j) parameters is specified for (column major) vectorized $a(0) = \text{vec}(A(0))$ and $a(+) = \text{vec}(A(+))$ where A(+) is a column major stacking of the parameters A(j), $j = 1, \dots, p$:

$$p(a) = p(a(0)) \varphi(a(+), P) \quad (2)$$

where the mean parameters in the prior for $a(+)=0$, $\varphi(.,.)$ is a normal distribution, and P is the prior covariance matrix for $a(+)$.

The prior covariance of the regression parameters A(+) are scaled using the Sim-Zha prior (Sims and Zha 1999). This prior is centered on a random walk specification for the dynamics and allows the variance of parameters for the dynamics of higher order lags to decay or have smaller variance than the earlier lags in the model. Each element of the diagonal of P is the prior covariance for one of the structural parameters. These prior variances are defined by

$$p_{j,k,i} = \left(\frac{I_0 I_1}{S_k j^{I_3}} \right)^2, \quad (3)$$

the elements of P corresponding to the j'th lag of variable k in equation i. The overall prior covariances are scaled by the value of the error covariance, σ_k from univariate AR(p) regressions of each variable on its own lags. The hyperparameter λ_0 sets an overall tightness across elements of the prior on A(0), where $\Sigma = A(0)^{-1'} A(0)^{-1}$ which relates the reduced form error covariance Σ to the contemporaneous structural relationships in A(0). The hyperparameter λ_1 controls the tightness of the beliefs about the random walk prior or the standard deviation of the coefficients on first lags (since $j^{\lambda_3} = 1$ in this case). The j^{λ_3} term allows the variance of the coefficients on higher order lags to shrink as the lag length increases. The constant in the model has a separate prior variance of $(\lambda_0 \lambda_4)^2$. The exogenous variables are given a separate prior variance

proportionate to a parameter λ_5 so that the prior variance on the coefficients of any exogenous variable is $(\lambda_0\lambda_5)^2$.

The posterior density for the model parameters is formed by combining the likelihood for equation and the prior

$$\Pr(A(0), A(+)) \propto \varphi(Y|a(+), a(0)) \varphi(a(+), P) p(a(0)) \quad (4)$$

where $\varphi(Y|a(+), a(0))$ is the multivariate normal likelihood for the model in equation (1) and Y is the matrix of endogenous variables in the model. See Brandt and Freeman (2006b) for details.

Gibbs sampler

The Bayesian posterior estimates for this model are obtained by combining the prior and the posterior information. This is done in several steps as detailed in Brandt and Freeman (2006b) and Waggoner and Zha (2003a). Posterior estimates of $A(0)$ and $A(+)$ are found by a Markov chain Monte Carlo (MCMC) Gibbs sampler algorithm for the structural model. All results reported here are based on a Gibbs sampler burn-in of 5000 draws and a final posterior sample of 20000 draws. Inspection of the posterior densities and Geweke test diagnostics for the model parameters indicate that the posterior samples are converged.

Normalization and impulse responses

Details about the impulse response computations can be found in Brandt and Freeman (2006a). The responses presented here are based on the posterior sample of the B-SVAR model. The impulse responses are computed by translating the structural model into a reduced form model as described in Brandt and Freeman (2006b). The reduced form version of the model is derived from the SVAR model (equation [1]) by post-multiplying the full model by $A(0)^{-1}$.

The impulse responses depend on the estimated $A(0)$ for the B-SVAR model, since the contemporaneous reduced form error covariance and impulse responses are determined by $A(0)^{-1}$. The reported results use the likelihood preserving normalization of the $A(0)$ draws suggested by Waggoner and Zha (2003b). This normalization maps the 2^m possible modes of the posterior to

an unique $A(0)$. This normalized set of $A(0)$ draws does *not* imply the innovations are all positive shocks in the structural model since positive shocks to one equation might imply negative shocks to another equation.

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