

Political Rents in a Non-Corrupt Democracy

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Abstract

A fundamental problem in all political systems is that the people in power may extract rents to the detriment of the general public. In a democracy, electoral competition and information provided by the media may keep such rent extraction at bay. We develop a simple model where rents are decreasing in the degree of political competition and voter information. In line with our theoretical predictions, we find that both increased political competition and increased local media coverage reduce direct measures of (legal) political rents among local governments in a non-corrupt democracy (Sweden). Our findings also indicate that the two dimensions of accountability are substitutes rather than complements.

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1 Introduction

A fundamental problem in all political systems is that the politicians and political parties in power may use their positions to further their own interests, rather than the interests of the general public. Depending on the degree of accountability that politicians are facing, it is possible for them to divert public resources, rents, to their own or their party's pockets. While corruption is the most blatant example of this, the problem is by no means restricted to corrupt regimes. In fact, most theoretical treatments of political agency problems between those in power and those governed, are set in a context resembling the workings of modern, well-functioning democracies. In such models, the incentives for politicians to extract rents are shaped by factors such as the degree of electoral competition and voter information.¹ The central aspect of corruption – that bribes are illegal – is usually not considered. Rather, rent extraction is treated as legal, either by implicit or explicit assumption.²

Despite this, most empirical work on rent extraction has dealt with the determinants of corruption, not with legal rents.³ The scarce number of empirical papers dealing with more developed and less corrupt economies have, on the other hand, been using measures such as tax rates, public employment and wages, growth promoting policies, and politician quality as proxies for rents.⁴ Such variables are, however, more closely related to slack and inefficiencies than to rents, per se. In this paper, we empirically analyze the impact of political competition and media coverage on direct measures of political rents among local governments in a mature and non-corrupt democracy, namely Sweden.⁵ We also extend the theoretical analysis of political competition and voter information, mainly by allowing the two dimensions of accountability to interact.

In our simple model, rent extraction by the incumbent political party reduces the net

¹ Persson and Tabellini (2000) and Besley (2006) present and discuss several classes of political agency models.

² Recently, this has started to change. Both Ferraz and Finan (2005a) and Waisman (2006) present theoretical models where the illegality of corruption is given special attention.

³ The empirical literature on corruption is huge. See Svensson (2005) for an accessible overview.

⁴ See Besley and Case (2003), Besley et al (2005), and Besley and Preston (2006).

⁵ In 2005, Sweden got a corruption score of 9.2 (out of 10) by *Transparency International* and was ranked as the 6th least corrupt country in the world.

income of the electorate and thereby the incumbent's reelection probability. Since voters have non-policy based biases in favor of the incumbent (due to factors such as ideology or ethnicity), some level of rent extraction is possible. More fierce political competition, modelled as a higher density of swing voters, lowers the equilibrium level of rents by making voters more sensitive to the income loss. Further, a fraction of the electorate is assumed to be directly informed about the level of rents through the media and thereby suffers an additional utility loss (an interpretation is that informed voters are indignant about the incumbent's questionable moral). Naturally then, rents are lower when the share of informed voters is high. We also show that if competition is intense, rents are small and the marginal impact of being information is limited. Competition and information are, in other words, substitutes. This last result is, however, sensitive to the assumptions regarding how information affects voters, and whether competition and information are substitutes or complements is ultimately an empirical question.

The precise nature of political rents is rarely discussed in the theoretical literature. The most literal interpretation is that rents are monetary transfers in the form of public financing of political parties and excessive wages for top politicians (Persson and Tabellini, 2000 p.8). In the empirical part of the paper, we use data on precisely these variables among Swedish local governments. Using these direct and objective measures of political rents, we find that increases in both political competition and local newspaper coverage tend to reduce both types of rents substantially. Moreover, the empirical results show that the effect of increased media coverage is smaller when competition is fierce, i.e. the two dimensions of accountability work as substitutes.

It is not obvious that financial party support is a good measure of rents. After all, it is possible that voters have a preference for the public sponsoring of political parties. Three results speak against such a public-interest view. First, we find that municipalities systematically structure the party support such that it favors the financial interests of the ruling majorities at the expense of the other parties. Second, we find that there are electoral cycles in financial party support: among local governments with high competition, increases in financial party support are relatively low in elec-

tion years, a finding hard to reconcile with the public interest view.⁶ Finally, Besley and Preston (2006) find that political competition is likely to moderate party-specific policy preferences. We, on the other hand, find the same response to political competition among left- and right-wing municipalities, even though left-wing governments on average spend more on financial support to political parties.

To deepen our understanding of how political competition influences rent extraction, we analyze how municipalities respond to shocks. First, we find that positive income and public expenditure shocks result in higher rent extraction among municipalities with limited political competition, but not among those where competition is fierce. Next, we find that higher tax rates result in higher wages for politicians when competition is low, but not otherwise. This corresponds closely to Di Tella and Fisman (2004) who find that US governors receive lower wages when taxes are raised, but that this effect is smaller when political accountability is low.

Conducting a study of Swedish local governments has several advantages. Both public financial party support and politicians' wages are determined within the local budget, and are set by a simple vote in the local council. Moreover, there are no formal restrictions on the level of public financial support that the local politicians can award their parties.⁷ As Swedish municipalities all work within the same legal and institutional system, we get around many of the problems associated with cross-country studies. Still, local governments have considerable fiscal autonomy and powers of taxation, and local newspapers are an important source of information about local politics in Sweden. Therefore, we rely on close to ideal units of observation when trying to isolate the effects of political competition and mass media on rents.

Another advantage of using Swedish municipal data is that the current municipal structure was created by a major reform in the early 1970's. A new set of municipalities,

⁶ Ansolabehere et al (2003) find the degree of competition to be strongly related to campaign spending in US gubernatorial elections. Since the demand for information concerning the political alternatives is presumably higher when competition is high, a similar pattern in public financial support to parties is to be expected – if such spending is mainly due to voter demand.

⁷ This said, there are restrictions on how the public support system can be structured. These restrictions basically say that all parties represented in the local parliament must be treated in a fair and equal way. Hence, if party X is in power, it cannot decide to only give support to party X.

without a previous track record of policy making and rent extraction, was thus created. At the same time, political preferences at the local level tend to be stable over time. By aggregating electoral data from before the reform to the present jurisdictional level, we can construct a strong and credible instrument for political competition.

This paper adds to the existing literature in several ways, some mentioned above. The basic finding concerning the relation between political competition and accountability is in line with previous research. Besley and Case (2003) find that stronger political competition reduces taxes and worker compensation in US local governments. Using US state level data, Besley et al (2005) find that increased political competition leads to higher economic growth, lower taxes, less labor market regulation and higher quality politicians. Besley and Preston (2006) derive an exogenous component of political competition and find a negative impact on taxes and local government employment in the UK. Apart from using direct measures of rent extraction, our paper differs from previous research by being set in a proportional electoral system without term limits. Since voters' capacity to hold politicians accountable is generally considered to be lower in proportional than in majoritarian systems, it is interesting in its own right to study accountability in a proportional system.⁸

The fact that corruption is illegal means that the checks and balances that can keep it at bay differ from those restraining legal rents. Most importantly, the judicial system cannot interfere with legal rent extraction. Despite this, there are some results in the literature on corruption related to our study, especially regarding the interaction of various institutions. A recent paper by Ferraz and Finan (2005a) studies the determinants of corruption in Brazilian municipalities using results from audit reports as a direct measure of corruption. In accordance with our results, they find that electoral incentives reduce corruption. Interestingly, they also find that judicial presence and media coverage reduce corruption, but only when electoral incentives are weak.⁹

⁸ For theoretical treatments of the effects of constitutions, see Persson and Tabellini (2000). For empirics, see Persson and Tabellini (2003). Acemoglu (2005) offers a critical review of the latter book. Persson et al (2003) specifically investigate how the electoral system affects corruption.

⁹ In a companion paper, Ferraz and Finan (2005b) find that the voter response to exposing corruption is stronger when local radio stations are present.

While the importance of mass media for keeping the public informed about policy has long been recognized, it is not until rather recently that this role has been included in the formal literature on accountability. In an important paper, Besley and Burgess (2002) find that governments in India are more responsive to their citizens' needs when newspaper coverage and electoral accountability are high. Similarly, Strömberg (2004) finds that U.S. counties with broad radio coverage received more relief funds during the New Deal era. More related to rent extraction, Reinikka and Svensson (2005) use detailed data from a policy experiment in Uganda to document a strong negative relation between media access and local capture of public funds. The effect of local media on accountability within more developed economies has, up to date, been given less attention.¹⁰ Our contribution to this literature is to provide such an analysis within a country where the freedom of the press is guaranteed, and to investigate how media interacts with other mechanisms of accountability.

This paper is organized as follows. Section two presents the theoretical model and the empirical predictions. Section three discusses estimation issues and the data. It also provides a brief description of the Swedish political institutions relevant to this study. Section four presents the results and Section five concludes.

2 Model and empirical predictions

The concept of political rents is central in many models of political agency problems.¹¹ In short, political rents are resources being transferred from voters to politicians, i.e. rents are viewed as pure waste from the voters' perspective. The precise nature of these transfers is rarely discussed in the theoretical literature, but the most literal interpretation would be that they are monetary transfers in the form of excessive wages for politicians and public financing of political parties (Persson and Tabellini, 2000 p.

¹⁰ Several paper using cross-country data document a positive relation between free and developed media and measures of good governance (e.g. Ahrend, 2002; Brunetti and Weder, 2003; Adserà et al, 2003).

¹¹ See Persson and Tabellini (2000) and Besley (2006) for thorough treatments of several classes of political agency models.

8). In theoretical models where fully informed voters only care about actual policy outcomes, competition between the political alternatives will drive down rents to zero (e.g. Wittman, 1989).

In real life, however, voters care about non-policy related attributes of politicians and parties such as ideology, ethnicity, religion, and personal charisma, which can reduce actual competition between the political alternatives. Since voters can be willing to tolerate some personal enrichment by their favored candidates, rents can be extracted. Poor voter information about policy and rents is another possible cause of rent extraction.

In this section, we present a simple model where limited political competition gives room for rent extraction. As an additional feature of the model, we allow for a share of voters to be uninformed about the level of rents. Then, we discuss the generality of the results.

2.1 The model

In the model, voters are backward looking and decide whether to reelect an incumbent party. The incumbent party only cares about rents and about being reelected. In the first period of the model, the incumbent sets the level of rents, r , taking into account that these rents have a negative effect on the reelection probability, $P(r)$. In the next period, the election is held. This means that the incumbent chooses r such that the following expression is maximized

$$r + P(r)R. \tag{1}$$

R is the level of exogenous office rents that accrue to the party in power, which is assumed not to be affected by the current level of rent extraction.

The electorate consists of a continuum of voters, i . In line with the probabilistic voting model by Lindbeck and Weibull (1987), voters are assumed to have preferences over non-policy related aspects of the parties. The average popularity of the incumbent party, d , is uniformly distributed over $[-\frac{1}{2z}, \frac{1}{2z}]$. The higher the value of z , the more

competitive is the election since the density of swing voters is higher. Voters are backward looking and vote in favor of the incumbent if their reservation utility is above a certain threshold level.¹² The reservation utility w_i is assumed have zero mean and to be uniformly distributed on the support $[-\frac{1}{2}, \frac{1}{2}]$. Since both the individual reservation utility and the average popularity of the incumbent are uniformly distributed, we introduce uncertainty about both the bias and the identity of the median voter. Thus, the reelection probability becomes a smooth function of rent extraction.¹³

When the incumbent party takes a decision on the level of rent extraction, it knows the distributions of the reservation utility and popularity parameter but not the realized values. The voters derive utility from income, B , net of rents and also have a direct dislike for rents, βr^2 , provided that they are informed about them. We assume the disutility of rents to be convex since it is natural to assume that voters care disproportionately more about large than small rents. Further, this functional form helps rule out corner solutions.

In the electorate, an exogenously set share $M \in (0, 1)$ is informed by the local media about the level of rents. Correspondingly, $(1 - M)$ voters are uninformed. In other words, all voters' utility (informed or not) is reduced by rents, but the informed voters experience a further utility loss from rent extraction.¹⁴

An uninformed voter will vote for the incumbent party if her utility is higher than her reservation utility w_i

$$u^U = B - r + d, \tag{2}$$

and correspondingly for an informed voter

$$u^I = B - r + d - \beta r^2. \tag{3}$$

¹² The opposition party has similar preferences as the incumbent party. Thus, the only reason for voters not to reelect the incumbent is to punish rent extraction *ex post*.

¹³ This is a general feature of probabilistic voting models.

¹⁴ By assuming that M is exogenous, we abstract from the possibility that voters refrain from reading the newspaper in order not to incur the disutility from knowing about the rents.

The reelection probability for the incumbent is the probability that the share of voters voting for the incumbent is larger than $\frac{1}{2}$. Due to the distribution of the reservation utility, the reelection probability is

$$\Pr\left(\frac{1}{2} + Mu^I + (1 - M)u^U \geq \frac{1}{2}\right). \quad (4)$$

As said above, the incumbent sets r to maximize 1. By inserting 2 and 3 into 1, and taking expectations, we get the reelection probability¹⁵

$$P(r) = \frac{1}{2} + z[B - r - M\beta r^2].$$

The incumbent then maximizes 5 with respect to r

$$r + P(r)R = r + \left(\frac{1}{2} + z[B - r - M\beta r^2]\right)R. \quad (5)$$

The first-order condition gives the following optimal value of r :

$$r^* = \frac{1 - zR}{2zRM\beta}. \quad (6)$$

Since rents are non-negative, we know that $1 \geq zR$. Therefore, we can sign the derivatives with respect to the main variables of interest, z and M .

$$\begin{aligned} \frac{dr^*}{dz} &= \frac{d\left(\frac{1-zR}{2zRM\beta}\right)}{dz} = -\frac{1}{2R\beta z^2 M} < 0 \\ \frac{dr^*}{dM} &= \frac{d\left(\frac{1-zR}{2zRM\beta}\right)}{dM} = \frac{1}{2RbzM^2} (Rz - 1) < 0 \\ \frac{dr^*}{dzdM} &= \frac{d\left(-\frac{1}{2R\beta z^2 M}\right)}{dM} = \frac{1}{2R\beta z^2 M^2} > 0 \end{aligned} \quad (7)$$

¹⁵ To see **this**, notice that $P(r) = \Pr(d \geq M\beta r^2 - B + r)$.

The first derivative in 7 shows that rents are decreasing in the degree of political competition, and the second that they are decreasing in the share of informed voters. The cross-derivative shows that voter information and competition are substitutes. While the first two results are intuitive – both political competition and voter information make voters more responsive to rent extraction – the last result requires an explanation. Formally, the result is due to the convex utility costs that informed voters suffer from rents. A more intuitive explanation is that if one dimension of accountability helps keeping rents low, the marginal impact of the other dimension is reduced since the marginal disutility of rents is lowered.

2.2 Discussion

The results from the above model are sensitive to the assumptions regarding how information about rents affects voter behavior. In general, both increased competition (a higher density of swing voters) and better voter information make voters more sensitive to actual policy. Hence, it would not be surprising if the two dimensions of accountability worked as complements rather than substitutes. Indeed, it turns out that a model showing that competition and information are complements rather than substitutes is easily derived. To show this, we do not need to assume a direct disutility from being informed about rents ($-\beta r^2$ in the above model). Consider the possibility that uninformed voters take B to be their income, while informed voters are aware that their actual net income is $B - r$. To rule out corner solutions, we assume a decreasing marginal utility of income (for example, $U = \sqrt{B}$). In this setting, politicians set r to maximize the following expression

$$r + P(r)R = r + \left(\frac{1}{2} + z[(1 - M)\sqrt{B} + M\sqrt{B - r}]\right)R. \quad (8)$$

The optimal value of r is given by

$$r^* = B - \frac{1}{4}M^2R^2z^2. \quad (9)$$

Taking the derivatives and cross-derivatives of z and M shows that while both increased political competition and a larger share of informed voters decrease rents, the two dimensions of accountability now also reinforce each other, i.e. they are complements.

Empirically, we then have clear predictions regarding the direct effects of competition and voter information, but the cross-effect is ambiguous. In the empirical part of the paper, we will first analyze the effect of political competition on rents, and thereafter we move on to analyze the impact of voter information and the interaction between the two variables.

3 Empirical strategy, data and measurement issues

In this section, we first explain how we proceed in testing the predictions from Section 2, then we describe the data and finally we discuss measurement issues.

3.1 Empirical strategy

The theoretical framework suggests that higher political competition should reduce political rents. Empirically, the nature of the question makes us mainly interested in the long-term effects, as opposed to the effects of short-term changes in competition. The reason is twofold. First, factors affecting accountability do not change to any considerable extent over time so there is more variation between than within municipalities. Secondly, the impact of the changes is likely to be gradual. For example, if one party is unthreatened in one election, we do not expect accountability to change immediately. Rather, we expect local governments with a relatively stable political majority over a long period to see a different development of political rents, and/or react differently to shocks.

Our empirical strategy is to make use of both cross-sectional and panel dimensions of the data. As argued above, however, it is more suitable to use cross-sectional variation

in the data as opposed to the within unit variation (which is likely to be limited). Using cross-sectional data, the baseline regression model takes the form:

$$\begin{aligned} \textit{Political Rents}_i = & \alpha + \beta_1 \textit{Political competition}_i + \beta_2 \textit{Voter information}_i \quad (10) \\ & + \gamma \textit{Controls}_i + \epsilon_i, \end{aligned}$$

where *Political Rents_i* is our measure of rent extraction by local government *i*, α is a constant, and *Political competition_i* is our measure of political competition. The model also makes predictions concerning the impact of voter information on political rents. Therefore, we introduce the variable *Voter information_i*, proxied by local newspaper coverage, as a measure of municipal level information of political rent extraction. *Controls_i* is a vector of control variables such as population size, income per capita; the share of the population with higher education, and local government expenditure as a share of income. ϵ_i is the usual i.i.d. error term. A thorough discussion of the choice of proxies and data is provided in the next section.

To analyze the within municipal determinants of rent extraction, we make use of panel data that allows us to control for municipal level fixed effects (μ_i) and fixed time effects (λ_t). The estimating equation in this case is:

$$\begin{aligned} \textit{Political Rents}_{it} = & \mu_i + \lambda_t + \beta_1 \textit{Political competition}_{it} + \quad (11) \\ & \beta_2 \textit{Voter information}_{it} + \gamma \textit{Controls}_{it} + \epsilon_{it}. \end{aligned}$$

Motivated by theory, we also introduce an interaction term between *Political competition* and *Voter information* in some of the panel specifications. The sign of this interaction term will tell us if the two dimensions of accountability are substitutes or complements.

To widen our understanding of the impact of political competition on rent extraction, we also analyze if political competition is an important determinant in how rent extraction responds to various shocks. Empirically, we then interact our measure of political competition with municipal per capita income, public expenditures, and tax rates in a fixed effects setting such as 11.

Naturally, endogeneity is a major concern in a study like this. Theory tells us that rents will be pushed up when political competition is low, which in turn affects the reelection probability. Since political competition can only be measured after rent extraction has taken place, the underlying degree of political competition will be lower than measured political competition. For this reason, we expect the coefficient β_1 to be biased towards zero. Another possibility (not based on our theoretical model) is that political rents are used to preserve the political structure. If this is the case, we would tend to exaggerate the effects of competition on rents. Theory also predicts that voter information will have an effect on measured political competition. For these reasons, we instrument for political competition using political conditions prior to the municipal reform described in Section 3 (details on instrumentation follow below).

Although the question of reverse causality is less severe for local newspaper coverage, it would be desirable to find an instrument for coverage. Our major concern is that an omitted variable, such as the general knowledge level, affects both coverage and political rents. To limit this problem, we include other variables that should pick up this effect.

3.2 The Institutional Environment

Our main units of analysis are Swedish municipalities, but to some extent we also make use of Swedish counties. Before we turn to how we measure the different components highlighted in the model, a description of the institutional environment is in place. The Swedish political system consists of three levels of government: central government, counties and municipalities. The present municipal structure was created in the early 1970's when a major municipal reform led to a reduction in the number of municipalities from about 1000 to 278. One of the main motivations behind the reform was to create more efficient administrative units, which was important since the municipalities were to handle much of the rapidly growing public service provision. The reform also aimed at maintaining local democracy and local self-government. For these purposes, it was important that the municipalities were sufficiently large to have a stable tax base and

the capacity to implement policy. Originally, the amalgamation of municipalities was meant to be voluntary, but since the process was slow, the national parliament in 1969 decided to force the new structure onto the municipalities. In the reform process, a unified type of municipalities with clearly defined responsibilities replaced the three types of municipalities that previously existed.¹⁶ The fact that the current municipal structure did not exist before 1970 will later on be used when creating instruments for political competition.

As mentioned in the Introduction, Swedish local governments have the constitutional right of self-governance, which makes them interesting units of research when studying effects of government on policy. The local governments set their own income taxes and they decide on their own budget. The fact that the autonomy from central government is not just formal has been shown in several empirical studies on the effects of local government on policy (e.g. Pettersson-Lidbom 2001, 2003). Moreover, governance of local governments is of real importance in the Swedish system since total spending in 2003 was 17 percent of GDP at the municipal level and 8 percent of GDP at the county level.

Today the major areas of responsibility of the municipalities are schooling, day care and elderly care, while the main responsibility of the counties is health and medical care.¹⁷ The primary focus of this study is local public financial support to political parties. In 1970, local governments were given the legal right to dedicate resources from the local budget to the parties represented in the elected council. Public financial support to the political parties has since then increased over time in both municipalities and counties. In 2003, the municipalities spent around 300 million and the counties around 200 million Swedish kronor (a total of about 55 million Euros) on party support. While these sums are trivial compared to total expenditures (or GDP), local party support is an important source of revenue for the parties. In fact, more than half of the

¹⁶ For a thorough discussion of the motivation behind the reform, see SOU (1961). Gustafsson (1980) has analyzed the reform from a political science perspective.

¹⁷ During the last 30 years, the responsibility for some services has changed. Since 1992, for example, elderly care is the responsibility of the municipality instead of the counties. The responsibility for primary and secondary schooling shifted from the central government to the municipalities in 1991.

total revenues come from local public support from municipalities and counties (*Svenska Dagbladet*, 2004).¹⁸

The public financial support to political parties is decided by the elected representatives themselves in the budget, after a vote in the local council. Thus, it is, in effect, the ruling majority that decides on the size of the monetary support to parties. Initially, the only restriction on the construction of the support was that all parties represented in the council should be included. Since 1992, there is an additional requirement that parties should be treated equally.¹⁹ An interesting feature of the system is that all parties receive the support – not only the winning coalition. Most municipalities have a sharing rule that includes a base (per party) and a variable (per seat) financial support, although the relative levels differ substantially. We will also study the wages paid to politicians in municipalities. Wages are also determined by the local council and are part of the municipality budget.

Some words on the political system are of relevance here. Sweden has a parliamentary system with proportional representation. As is common in this type of system, a number of parties are represented in the elected assemblies. Although there are several parties, there is a quite clear dividing line between left-wing and right-wing parties leading to a fairly stable two-bloc system. The Social Democrats, the Left Party and the Green Party are considered to constitute the left-wing coalition.²⁰ The right-wing coalition consists of the Conservatives, the Liberals, the Centre Party, the Christian

¹⁸ Party financing in Sweden is surprisingly untransparent. According to the estimates in *Svenska Dagbladet* (2004), another 250 million SEK of party revenues are public party support decided by the national parliament. Other contributions (including membership fees) add up to 230 million SEK.

¹⁹ What "equally" means is not defined. In effect, it means that two parties with equal representation in the local parliament receive the same level of support. The actual sharing rules differ substantially between municipalities.

²⁰ The Green Party entered the national parliament after the election in 1988. While this party has claimed to stand independent from both the left- and the right-wing blocs, they are best classified as left wing. The Green Party has, for example, only once supported a right-wing coalition in any of the counties. Further, in a detailed survey of municipal majorities after the 1994 election, it was found that they were four times more likely to support a left-wing coalition than a right-wing coalition (Kommunaktuellt, 1995). In addition, after the elections in 1998 and 2002, they have been part of the left-wing coalition supporting the Social Democratic minority government in the national parliament. Finally, ever since they entered the political arena in 1982, voters in general have placed the Green Party on the left-side of the political spectrum, and the voters for the Green Party have placed themselves on the same side as well (Holmberg and Oscarsson, 2004; Tables 5.1 and 5.2).

Democrats, and New Democracy (only in the 1992-1995 period). Nationally active parties traditionally play an important role in Swedish politics and there are few local parties of importance at the county and municipality level.

Swedish newspapers are of a highly local nature. In what might be an exception to some other parts of the world, local newspapers usually cover local politics on a regular basis. While a few papers (*Dagens Nyheter* and *Svenska Dagbladet*) are being read nationally, they have very limited coverage outside the Stockholm (the capital) region.²¹ Printed media is important for getting access to information about politics and policy in Sweden. According to surveys of the Swedish electorate, voters reading the local newspapers are generally, but not surprisingly, much better informed than other voters.²²

3.3 Data and measurement issues

The number of municipalities has grown from 278 in 1974 to 290 in 2004. In our data set, there is a maximum of 265 municipalities since we drop **those** that have split or merged over the years. The main sources of data are the *Swedish Association of Local Authorities and Regions* and *Statistics Sweden*. As for counties, there are 20 such today, 18 of which have existed throughout our sample period. The remaining two were created in 1997-1998 through the amalgamation of five different counties. For a detailed description of the data sample and sources for the individual variables, see Data Appendix and Appendix Table A.1, respectively.

3.3.1 Measures of rents

As a measure of political rents, we will use the per capita local public financial support to political parties, *Party Support*. As argued in the Introduction, this variable is close to a literal interpretation of “rents” in the theoretical literature. The major drawback of this variable is that it does not capture all political rents, while the main advantage

²¹ These two papers also cover local politics in the Stockholm area but not in the rest of the country.

²² Holmberg and Oscarsson (2004, Table 9.5).

is that measurement problems are limited. Another concern may be that financial party support might be viewed as something voters actually demand. The reason for this would be informational – voters want all parties to have the means to provide information about their policies and conduct informative election campaigns. However, it is reasonable to expect the demand for such information to be especially high when competition between the political alternatives is fierce – if voters have no intention of changing the party for which they vote, they do not need to become informed about the alternatives.²³ This would lead us to find a positive effect of political competition on party support. In section 4.2, we address this concern and show results consistent with the view that Party Support should indeed be viewed as a measure of rents. Municipal level data on Party Support is available for every post election year from 1974 to 2003.²⁴

Our second measure of political rents is the wage paid to the highest ranking full-time employed politician. We make use of two sources to construct this variable, one from 1974-1989 which only reports the level of wages, and one from 1990-1999 which also reports the age and gender of the politician. Although wages are also determined by the local council and are monetary transfers from tax payers to politicians, we do not regard them to be as good a measure of political rent as party support. The reason is that voters may want to pay their politicians high wages in order to give them incentives to act in the interest of the electorate. Moreover, wages may affect candidate selection and thereby affect policy.²⁵ Thus, the motive for high wages may not be rent extraction but reflect the electorate’s demand for high quality performance. In a study of US gubernatorial wages, however, Di Tella and Fisman (2004) find support for the idea that wages are partly determined by rent extraction motives. If this is also the case among Swedish municipalities, our measures of accountability should affect wages in the same fashion as they affect party support.

²³ Ansolabehere et al (2003) find that the degree of both inter- and intra party competition is strongly related to campaign spending in US gubernatorial elections.

²⁴ In the mid-1990’s, the authority responsible for gathering these data was changed. Due to this change, data was misreported in some municipalities. Because of this misreporting, we drop 11 municipalities, leaving us with 254 municipalities in 2003. See more details in the Data Appendix.

²⁵ For a discussion of the effect of pay on politicians, see Besley (2004).

Table 1 show summary statistics for all variables we use in the study. Notice that all values are deflated into 2000 years prices. Over the period, average financial party support was almost 32 Swedish kronor per capita with a large variation both across municipalities and over time. In 2003, the municipality with the lowest level of financial party support, Söderköping, only spent 8 kronor per capita on party support, whereas Haparanda with the highest spending allocated 121 kronor per capita to party support. As can be seen in the third row of Table 1, there is also substantial variation in our second proxy for rents, politicians' wages. For the full list of the level of party support in 2003 (in current prices) for all municipalities included in the study see Table A2. Table A3 in appendix lists the 10 municipalities with lowest respectively highest levels of public party support per capita 2003 in current prices.

TABLE 1 HERE

3.3.2 Measuring political competition

Several different measures of political competition have been used by other researchers.²⁶ Here, we follow much of the literature and use the absolute difference between the left-wing and the right-wing bloc. *Political competition* is defined as 1 minus the absolute difference between blocs. The main drawback of this measure is that there are no watertight locks between the political blocs as we define them. In some municipalities, parties form coalitions across the traditional right- and left-wing boundaries of Swedish politics, which introduces some noise to this measure (see Section 3.2 for a discussion of the Swedish party structure). Another problem that has already been mentioned is that there is relatively little time-variation in this, as well as in other, measures of political competition.

The absolute value of the difference between the political blocs is easy to calculate

²⁶ Besley and Case (2003) provide a comprehensive survey of measures of political competition. In their study of the effect of political competition on policy in US states, they use a measure based on the distance from 0.5 in the fraction of seats held by one party. Dahlberg and Mörk (2006) use the absolute distance between the left-wing and right-wing blocs, and a measure of party fragmentation in a study of bureaucrats' wages in Swedish local governments.

and a good measure of swing voters, provided that the distribution of ideological preferences is symmetric, single peaked, and that there are just two parties competing for power. Since these assumptions do not necessarily hold, we use the cut point density measure, *cutpoint density*, derived by Johansson (2003) to check the robustness of the main results.²⁷ Johansson estimates the number of swing voters using factor analysis and a kernel density estimator on data from the large scale Swedish election surveys conducted in connection with the 1991 and 1994 elections. Using the attitudes conveyed by responses concerning the voters' feelings towards political parties and politicians, a distribution of preferences at the constituency level is derived.²⁸ The actual position of each municipality is then derived using the municipal level election results for the previous election.²⁹ These variables overlap with the rest of the data for the time periods 1992 and 1995.

3.3.3 Instrumentation

As discussed above, endogeneity may be an issue when using a measure of political competition such as ours. To instrument for political competition, we make use of the fact that the current municipal structure did not exist prior to the major municipal reform in the early 1970's, described in Section 3.2. Hence, instruments based on election results and economic conditions prior to this reform should reflect underlying political sympathies rather than opinions based on actual local policy making after the municipal reform. At the same time, the geographical pattern of political sympathies is quite constant over time. Therefore, we use the absolute difference between the political blocs in the election for *national* (rather than local) parliament in 1968. The election results are aggregated to the current municipal level to create the instrument *polcomp68*.

That the instrument is valid can be further motivated by the fact that local governments were not given the right to hand out party support until 1970. Hence, the

²⁷ We are grateful to Eva Mörk (previously Johansson) for sharing her data with us.

²⁸ There are 28 constituencies in Sweden. Each municipality belongs to one of these.

²⁹ See Johansson (2003) for details concerning the construction.

election results from the 1960's can hardly be endogenous to subsequent rent extraction. Moreover, it should be noted that we use the election results for the national parliament, as opposed to the local council, to create the instrument *polcomp68*. This should further ensure that it captures underlying political preferences, rather than opinions based on actual local policy making.

3.3.4 Media

According to the model, voter information about rents is important for rent extraction. Our proxy for voter information about local politics is the household coverage ratio of local newspapers. The Swedish local media markets are naturally connected to the municipal structure. While a number of newspapers have coverage in several municipalities, most people within a municipality tend to read one or a couple of local newspapers.

Data describing coverage and political color of all local newspapers is provided by *Tidningsstatistik AB*. This company gathers detailed newspaper data to facilitate the sale of advertisements across Sweden. Using this data, we derive the variable *coverage* as the sum of household coverage (percent of households buying the paper) of local newspapers that have a coverage of at least 10 percent and are published at least twice a week.

3.3.5 Control variables

Further, to isolate the effects, we control for a number of other factors. *Population* is the log of population, included to capture effects such as economies of scale in running a political party. *Income* is the log of income per capita, included to account for the amount of possible rent extraction, and for differences in voter preferences. *Public exp* is the local government expenditure as a share of the local tax base. This is included since the possibilities for parties to extract rents are likely to be larger when the public sector is large. In some specifications, we use *tax rate* instead. *Leftwing* is defined as the left-wing vote share. This is included to account for differences in the relative

dislike of rents among voters, and to account for differences in party attitudes towards the extraction of a particular rent. To rule out that the media coverage variable picks up the effects from having a more well educated population, we also include the share of inhabitants with higher education, *high edu*. This variable is only available from 1985 and onwards and is therefore not included in all specifications. When studying the determinants of politicians' wages, we also include a dummy, *gender*, which takes on the value of one if the politician is a woman and two age variables *age* and *age*². Finally, all variables are deflated into 2000 year prices.

4 Empirical results

Our main empirical predictions are that high political competition will tend to reduce public financial support for political parties and politicians' wages. Further, we expect high local media coverage to reduce these rents. Finally, our model suggests that there may be an interesting interaction effect between these variables. As can be seen in Table 2, there is a correlation of -0.20 between public financial support for political parties and our main variable measuring political competition, *political competition*. The correlation between public financial support and *cutpoint density* is -0.25. Between politicians' wages and *political competition* the correlation is close to zero, while it is -0.15 for *cutpoint density*.

For local newspaper coverage, the correlation is about -0.25 for both party support and wages. Thus, the raw correlations point in the direction indicated by theory. The correlation between *political competition* and most other explanatory variables is quite low, indicating that *political competition* is unlikely to proxy for some other important variable. This low correlation is no coincidence: competition is low when either left- or right wing parties are strong. Since municipalities with different political attitudes differ in many dimensions, these differences tend to average out over municipalities with different levels of political competition.

The instrument *polcomp68* is strongly correlated with the measures of political com-

petition. The relation between *coverage* and other variables is more surprising, especially the negative correlation between media coverage and both income per capita and the share of people with a high education.

TABLE 2 HERE

We start by analyzing the relation between political competition and financial party support. A section discussing whether financial support to political parties should really be viewed as rents is then included. Next, we move on to investigate the relation between political accountability and politicians' wages. Finally, we analyze whether municipalities with different degrees of political competition respond differently to shocks when extracting rents.

4.1 Political accountability and financial party support

In Table 3, we see that the prediction regarding the relation between political competition and financial party support finds substantial support in the data.

In the first column, using the variable *political competition* to measure political competition, we find a highly significant negative effect of competition on party support, using cross-sectional data from 2003.³⁰ A coefficient of -17.6 means that by increasing *political competition* by one standard deviation, rents are reduced by 2.5 Swedish kronor per inhabitant, or 8 percent as compared to the mean level of rents. By moving from the lowest to the highest value of political competition in our sample, rents are reduced by 12.8 kronor per inhabitant (40 percent compared to mean rents).

In column two, we instrument for political competition by using political competition in the 1968 parliamentary election (*polcomp68*). The F-test (564.31) from the first-stage regression indicates that the instrument is very strong. Consistent with our theoretical prediction that the OLS estimates are biased towards zero, we find that the size of the

³⁰ Note that we use the average value of *political competition* throughout the sample period in these specifications. We believe this to be a better measure of the underlying degree of competition than the contemporaneous value. Using the value for 2003 does not change the results to any substantial degree, however.

effect of political competition is somewhat larger when using IV. This indicates that rents are indeed pushed up in such a way that measured political competition is higher than the underlying degree of competition. Thus, the political parties appear to be ready to lose some votes to gain higher rents.

The other explanatory variables in columns one and two basically have the expected signs. A higher share of public expenditures and a higher income per capita are both associated with higher rents. This could be due to the fact that the absolute size of the public budget is increasing in both these variables. A higher share of left-wing votes is also associated with higher rents, which could either indicate that left-wing voters are less reluctant to give public financial support to political parties, or that left-wing parties are more inclined to extract this type of rent. A large share of well educated inhabitants reduces rents. An explanation could be that well educated voters are better at monitoring the political process. Population size seems to be unimportant for rents according to these regressions.

In columns three and four, we use our other measure of political competition, *cutpoint density*, for the year 1995.³¹ The pattern from regressions one and two repeats itself: while the OLS estimates are highly significant, the point estimates are larger when using IV. The size of the effect is somewhat larger compared to *political competition*: a one standard deviation increase in the independent variable implies a decrease in party support by between 3.4 (OLS) and 5.8 (IV) Swedish kronor for *cutpoint density* (i.e. between 10 and 19 percent compared to the sample mean).

While our instrument is likely to be valid regarding direct reverse causality from rents to political competition, we cannot rule out that the results suffer from an omitted variable bias. There is no ideal solution to this problem in a cross-sectional setting, but we can investigate if the estimated coefficients are sensitive to the inclusion of other control variables. We have included additional demographic variables that could be related to party support: Population density can affect the cost of informing voters and running a party, the share of the population under 15 and the share of the population

³¹ *Political competition* is also highly significant for 1995.

older than 65 can influence the voters' incentive to monitor the political process since these groups are the most dependent on the services provided by municipalities. As a large parliament may increase the costs for the political parties, we also include the total number of seats in the local parliament. Despite the fact that these variables capture major structural differences between municipalities, the estimated impact of political competition is unaffected by their inclusion.³²

TABLE 3 HERE

In the next two columns of Table 3, we exploit the panel dimension of the data and introduce municipal and time fixed effects to control for unobserved heterogeneity. For the variable *political competition*, used in column 5, we have a long panel. In this setting, we use the political competition measure for every year in the sample, rather than the average over the whole period as in columns 1 and 2. While the point estimate of *political competition* remains negative, it is not statistically significant at conventional levels. As discussed earlier, the time variation in this variable is limited which means that we should not be too surprised that it is hard to identify the effect in a panel setting. For our other measure of political competition, *cutpoint density*, data is only available for two time periods, 1992 and 1995. Keeping this limitation in mind, the results show that an increase in the density of swing voters is significantly associated with a reduction in rent extraction, even after controlling for municipal fixed effects.

Another approach to take unobserved heterogeneity into account is to consider long-term changes in the dependent variable. By holding the initial values of financial party support constant, we effectively control for all factors affecting the initial level of party support. In the final column of Table 3, we see that the percentage change in financial party support between 1974-2003 is significantly lower when competition is high (we use the average level of political competition between 1974-2003). The effect is large:

³² For example, adding these additional control variables to specification (2) yields the estimated coefficients (and standard errors in parenthesis) on political competition, -20.39** (9.80), and on the added control variables: population density, -1.61 (1.05); age 0-15, -2.05* (1.24); age 65+, -1.35* (0.76); and seats -0.13 (0.19).

increasing the average level of political competition by one standard deviation would result in a 15 percentage point lower increase in the dependent variable. Since the average increase is 89 percent, this is a substantial effect.

4.1.1 Adding media

In this section, the effects of mass media coverage, and the interaction between media coverage and political competition, are added to the analysis.

In the firsts two columns of Table 4, local newspaper coverage is added to the basic OLS and IV cross-sectional specifications. The point estimate is negative and statistically significant, indicating that local media does indeed play a role in reducing political rent extraction. A coefficient of about -0.14 means that by increasing media coverage by one standard deviation, rents are reduced by 2.2 kronor. The point estimate of *political competition* is somewhat increased by the inclusion of *coverage*.

TABLE 4 HERE

In column three, we run a panel regression including municipal and time period fixed effects. The impact of media coverage is still negative and highly statistically significant after taking the fixed effects into account. As discussed above, there is little time variation in political competition. Therefore, it is hardly surprising that the point estimate on *political competition* is not statistically significant in this specification.

In the last two columns, an interaction term between *coverage* and *political competition* is included in the panel regression. This interaction is positive, suggesting that the impact of media coverage on rents is reduced when political competition is fierce. In other words, the two dimensions of accountability appear to be substitutes rather than complements.³³ Interestingly, the effect of political competition is negative and significant in the last column.

We have also analyzed other dimensions of media coverage, such as the political color of the major newspaper, the presence of more than one local newspaper, and the

³³ For the interaction term, we use the time-period average of *Political competition*.

concentration of the local newspaper market.³⁴ None of these variables turn out to have a significant effect on the level of rents. In order to save space, these results are not presented.

In short, the results in this section show that both political competition and media coverage reduce rents, and that the two variables are substitutes.

4.2 Is public financial party support really rents?

The results in the previous section are consistent with theories linking political rents to political competition. However, it is not obvious that public financial party support is a good measure of rents. After all, it is possible that voters have a preference for the public sponsoring of political parties. In this section, we provide evidence that excessive public financial support to political parties is best viewed as rents. At the same time, we will present further results on the effects of competition on the structure of public support and the timing of changes in this variable. First, we show that the construction of public support to parties also depends on the party structure in the municipality. Specifically, it does so in a way consistent with the view that the ruling majority furthers its own interest at the expense of the other parties. Thereafter, we show that the timing of increases in financial party support is inconsistent with a public interest view of those financial transfers. Finally, we show that the response to high competition is similar in municipalities dominated by left- and right-wing parties, indicating that the results cannot be explained by differences in preferences across voters.

4.2.1 The structure of financial party support

The municipality does not only decide on the size of public financial support to parties, but also on the algorithm, or sharing rule, determining how much each party in the municipality will receive. Thus, there are incentives to construct the sharing rule in such a way that it benefits the party in power at the expense of the other parties in

³⁴ The impact of the media market structure on monitoring efficiency and potential reporting biases is discussed in Djankov et al (2003), Mullainathan and Shleifer (2005), and Besley and Prat (2006).

the local council. Most municipalities give the party support in two parts: a base sum to each party and a variable part depending on the number of seats the party has in the local council. Our hypothesis is thus that if parties benefit themselves, we should see larger support per seat, relative to the base sum per party, in municipalities where there is a dominant large party and/or a concentrated party structure.

In order to study if this is the case, we have collected data on the exact construction of party support in the municipalities 2003. See appendix Table A2 for a complete list of municipalities and the level of base party support and party support per seat in the local council. From this data, we construct the variable *base/seats* as the base sum per party, divided by the sum per seat. 207 out of 290 municipalities in Sweden responded to our survey. As can be seen in Table 1, there is substantial variation in the structure of party support across municipalities. To measure the party structure, we construct the dummy variable *own majority* that takes the value if one if a single party has a majority of the seats in the local council, and *herfindahl*, which is the Herfindahl index of parties in the local council.

The hypothesis is that both our measures of a concentrated party structure should have negative effects on the *base/seats* variable. In the first two columns of Table 5, we see that both *herfindahl* and *own majority* indeed have the predicted effects on the structure of party support. The effects are highly statistically significant at the one-percent level.³⁵

It is not obvious which, if any, control variables should be included when estimating the determinants of the sharing rule. In columns 3 and 4, we include the total number of seats in the council, the number of parties represented in the council, income per capita, the size of the population and population density. The main results are, however, unaffected by the inclusion of these control variables.

TABLE 5 HERE

³⁵ The result remains the same if we exclude all municipalities (14) where the structure of party support is not best represented by a linear function of seats in the council. See text under appendix Table A2 for a detailed description of the coding of survey over party support into a base sum per party and a sum per seat in the council.

The result that large parties tend to benefit themselves at the expense of the other parties in the local council is difficult to reconcile with the view that **voters'** preferences lie behind public party support.

4.2.2 Electoral cycles in financial support

As mentioned before, Ansolabehere et al (2003) find that the degree of both inter- and intra party competition is strongly related to campaign spending in US gubernatorial elections. A similar pattern in public financial support to parties can be expected if such spending is mainly due to voter demands for information. Further, given that the value of information concerning the political alternatives is especially high during election years, we would expect financial party support to be relatively high during those years in municipalities where competition is high.

An alternative hypothesis, pursued in this paper, is that public party support should be viewed as a rent. Theoretically, political competition affects political rents by making politicians more sensitive to voter demands. If voters display short-sightedness, it is likely that political competition does not only affect the level of political rents, but also the timing of rent extraction. In particular, we expect rent extraction to be relatively low close to elections in regions where political competition is high.

In order to test these hypotheses, we estimate the following relationship:

$$\begin{aligned} Party\ Support_{it} = & \mu_i + \zeta Party\ Support_{it-1} + \beta_1 Election\ year_{it} \\ & + \beta_2 (Political\ competition_i \times Election\ year_{it}) + \gamma Controls_{it} + \epsilon_{it}. \end{aligned} \tag{12}$$

In effect, this is a difference-in-difference (DID) specification testing if the difference between regions with high and low competition is different during election years relative to other years. If the interaction coefficient β_2 is negative, this means that the change in rent extraction during election years is relatively low when competition is strong. This would be consistent with the rent-extraction hypothesis, but not with a public interest explanation of public party financing.

Since we need annual data to perform this exercise, we can only test the relationship among counties. In the appendix, we verify that the basic relation between political competition and rent extraction is also valid among counties. Even though the number of observations is low, the results in Table A.2 are surprisingly similar to the results for municipalities presented in Table 3.³⁶ In other words, political competition appears to limit rent extraction in exactly the same way both among counties and municipalities. Since Swedish counties and municipalities are separate units of political administration, this is a strong robustness check on the basic results for political competition.

TABLE 6 HERE

In Table 6, the results from running the above DID-specification, with and without time dummies, are presented. Among counties with strong political competition, the increases in public financial support are indeed relatively low during election years. Once more, the empirical evidence thus supports the rent-extraction hypothesis rather than a public interest story of these transfers.

4.2.3 Financial support in left- and right wing municipalities

Besley and Preston (2006) show both theoretically and empirically that political competition tends to moderate party-specific policy preferences. Briefly put, they show that while left-wing governments increase spending more than right-wing ones, they do so less when competition is high. The reverse pattern can be observed among right-wing governments. Thus, competition tends to result in policy convergence between the political alternatives.

As can be seen in Tables 3 and 4, the share of left-wing voters in a municipality is positively related to financial support to political parties. This result is consistent with left-wing voters having a relatively strong preference for such support. Therefore, we use the same intuition as Besley and Preston and run separate regressions for municipalities

³⁶ Since there is no natural connection between county boundaries and local media markets, we have not included media variables in the county- level regressions.

that have been run by left- and right-wing majorities throughout the sample period.³⁷ If the level of financial support were determined by party-specific voter preferences, we would expect high competition to reduce such support in left- wing municipalities, but to *increase* it in right-wing ones. Table 7 shows this not to be the case. Rather, high competition tends to reduce financial support in both left- and right-wing municipalities. That the point estimates are not highly statistically significant is not surprising since we are now studying a small sample of municipalities with very low political competition to begin with.

TABLE 7 HERE

These results go against the view that financial support to political parties is determined by party-specific voter preferences that are moderated by political competition.

4.3 Accountability and wages

So far, the focus has been on the financial party support with which local governments reward the political parties represented in the local council. Now we turn to another proxy for political rents: politicians' wages. The first column in Table 8 presents the results when estimating the effect of political competition on the wage paid to the chairman of the executive board 1999. The results are in line with the evidence presented earlier and suggest that municipalities with low political competition and low newspaper coverage are associated with higher wages. As shown in column two, the result is not due to endogeneity of political competition. To gauge the size of the effect, suppose that the absolute difference between blocs were to increase by one standard deviation (about 15 percent). Then, wages would increase by 2.8 percent.³⁸ If

³⁷ Municipalities are classified as right- (left-) wing if the parties that make up the right- (left-) wing bloc have had more than 50 percent of the votes in all elections during the time period.

³⁸ The results are similar when we use the *cutpoint density* for the year 1995 as a measure of political competition. In the OLS (IV) specification, the point estimate is -2.7 (-5.8). This amounts to a two (four) percent decrease in wages from a one-standard deviation increase in political competition.

newspaper coverage were to increase by one standard deviation, political support would decrease by 2 percent.

TABLE 8 HERE

As for the control variables, there are several reasons to expect a positive effect of income on politicians' wages. One reason, discussed earlier in the paper, is that it is easier to extract rents if there are more resources to extract. Another is that politicians may be rewarded for performance. In this case, they get higher pay if they act to increase local income. This reason is stressed in Di Tella and Fisman (2004) in their study of the determinants of gubernatorial wages in the US. Finally, high income may increase the politicians' reservation wage and thereby increase wages. As could be expected, larger population and thus greater responsibility increase wages. The local tax rate, on the other hand, has no impact on wages. Di Tella and Fisman (2004) find a negative effect of the tax rate and argue that it can be explained with a reward-for-performance motive.³⁹ Interestingly, the share of left-wing votes has no effect on wages. This should be compared to the strong positive effect of this variable on the level of financial party support. An odd result is that the average white-collar worker wage, *priv wage*, has an unexpected negative effect on wages and income per capita has no effect on wages.⁴⁰ We have no satisfying explanation for this.

The next three columns show the results when making use of panel data. As when studying party support, the effect of political competition is not statistically significant in the panel, but the point estimate is negative. There is no effect of media coverage either, but when we include the interaction effect (in column 4), the direct effect of media turns negative and significant. The interaction term is positive and significant, showing that the two dimensions of accountability work as substitutes. When instrumenting for political competition, the estimated coefficients do not change to any considerable

³⁹ Since the tax rate has been used earlier in the literature, we use tax rate instead of expenditure share. Including expenditure share in the regressions does not change the result and the estimate is often insignificant.

⁴⁰ The negative effect of *priv wage* is not due to multicollinearity with income per capita as the negative sign remains when excluding income.

extent, but they lose their statistical significance.

4.4 Political competition and the response to shocks

A possibility, touched upon before, is that the pattern of rent extraction differs among municipalities with different degrees of political competition. We have already seen that increases in financial party support are relatively high during election years in counties with low political competition. In this section, this issue is further analyzed by allowing for interaction effects between political competition and various economic shocks. For this purpose, we make use of the longest available series of public financial party support and wage data that we have available.⁴¹

In the first column of Table 9, we include an interaction term between the time period average of *Political competition* and income per capita in a specification using both municipal and time period fixed effects. In the second column, the same test is performed while instrumenting for the interaction term using *Polcomp68*. Although the direct effect on rents by an increase in income per capita is positive, we find that the interaction effect is negative. The same pattern is found in the next two columns where we interact *political competition* with the public expenditure share. These results indicate that when the absolute size of the public budget increases, the political parties can increase rent extraction. However, when competition between the political blocs is fierce, the scope for rent extraction is reduced. In all these specifications, the coefficient on media coverage is negative and statistically significant.

TABLE 9 HERE

In the next four columns, the same tests are performed using politicians' wages to measure rent extraction. Rather than using the public expenditure share, we use the

⁴¹ This means that we have merged the two series of wage data available, and that we cannot control for the age and gender of the highest paid politician in the wage regressions. The results are strikingly similar when we use the period that allows us to control for these variables (available upon request). Further, it means that we cannot use the cutpoint density measures of political competition.

municipal tax rate in these specifications.⁴² This is motivated by Di Tella and Fisman (2004) who find that US governors are “punished” with lower wages for raising taxes. They further find this effect to be particularly strong when electoral accountability is low. The results for wages are similar to those in columns one to four. On average, a higher income per capita and a higher tax rate are both associated with higher wages. This association is, however, weaker in municipalities where political competition is high. In fact, the point estimates indicate that when *Political competition* is higher than 0.6 (OLS) or 0.66 (IV), politicians are indeed punished with lower wages for raising the tax rate. It should also be mentioned that *coverage* is not significant in the wage regressions.

5 Conclusion

This paper exploits data on public financial support to political parties and politicians’ wages among Swedish local governments to analyze the relation between political accountability and political rent extraction in a non-corrupt democracy. In line with the predictions of political agency models, we find that both increased political competition and increased local media coverage reduce the level of rents. Further, the two dimensions of accountability appear to be substitutes rather than complements. Thus, this paper presents the first direct evidence of which we are aware supporting the theoretically long-discussed link between electoral biases that limits political competition and (legal) political rent extraction.

By exploiting the fact that the present municipal structure in Sweden was created by a major reform in the early 1970’s, we are able to construct a credible instrument for the degree of political competition. This is important since theory predicts that underlying political competition drives up rents which, in turn, results in increased (measured) competition. Using the IV-estimates, our results indicate that moving from the lowest to the highest within sample degree of political competition would cut public party

⁴² The results for these interaction effects are similar when using the expenditure share.

support by approximately 40 percent, and reduce the highest paid politician's wage by 20 percent. The effect of media coverage is substantial on financial party support, but rather modest on wages.⁴³

Some caveats regarding the interpretation of our results merit further discussion. The Swedish party structure is highly centralized. For this reason, parties at the central level can choose to strategically spend more of their resources in regions where the share of swing voters is high, i.e. where the degree of competition is high. Such behavior could then reduce the local parties' demand for local public party financing which, in turn, would generate the pattern we observe in the data. However, the results showing that the sharing rule for local party financing depends on the local party structure in a way consistent with local rent extraction suggests that this is not the mechanism at work.⁴⁴ Further, high wages of local politicians cannot be explained by parties behaving strategically at the central level.

Regarding information, it is possible that high local media coverage reduces the need for parties to spend resources informing voters about policies, thereby reducing the demand for local public party support. At the level of aggregation where we are working, we cannot distinguish between these mechanisms. However, the finding that information and competition appear to be substitutes rather than complements is interesting regardless of the precise nature of the mechanism behind the direct results for newspaper coverage.

Another issue is the relationship between voter information and political competition. In the theoretical and empirical analysis, we have assumed that voter information and political competition are independently determined. Even if there is no correlation between the two variables in our data, it could, however, be the case that they are jointly determined. For example, swing voters may have greater incentive to get informed and thus political competition affects how large share of the electorate that

⁴³ A one standard deviation increase in media coverage is associated with approximately seven percent lower financial party support and two percent lower wages.

⁴⁴ Since political parties in Sweden do not disclose their financial statements or any details regarding their spending patterns, it is not possible to directly analyze this mechanism.

will be informed. There is definitely scope for further research to study the possible joint determinance of these factors.

A natural extension to this work would be to investigate the potentially positive effects of limited political competition along other policy dimensions. It could be that low competition results in some rent extraction, but that the overall effects are positive, for example by increasing the time horizon of the politicians in power. Previous studies on political competition (Besley and Burgess, 2002; Besley and Case, 2003; Besley et al, 2005; Besley and Preston, 2006) indicate that increased political competition is likely to have positive effects on the quality of policy. Ferraz and Finan (2005a), on the other hand, find a positive relation between policy quality and corruption. What is true in the Swedish context is still an open question.

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Data appendix

The main units of observation are Swedish municipalities. Out of a total of 290 municipalities (in 2003), we drop some observations for the following reasons.

Municipalities that have split or merged since 1974:

Codes 117, 127, 128, 140, 181, 187, 300, 330, 461, 480, 488, 583, 584, 1229, 1263, 1300, 1443, 1445, 1470, 1490, 1814, 1880, 2403, 2417, 2425, 2460, 2463

Municipalities dropped in the post-1995 period due to misreported values of public party support.

Codes 120, 123, 183, 509, 1419, 2184, 2401, 2404, 2409, 2521, 2584

Municipalities dropped in the pre-1995 period due to misreported values of public party support:

Codes 2401, 2409, 2584

Table A1. Data description and sources

| Variable | Description | Source |
|-----------------------|--|--|
| Party support | Public financial party support per capita (years 1974, 1977, 1980, 1983, 1986, 1989, 1992, 1995, 1999, 2003). | SALAR(1) for 1974-1995. SKL 1999-2003. |
| Wage | Monthly salary paid to the highest ranking full-time employed politician (years 1974, 1977, 1980, 1983, 1986, 1989, 1992, 1995, 1999). Thousands of Swedish kronor. | SALAR(1) 1974-1989, KA 1990-1999. |
| Base/seat | The ratio between base (per party) public party support and per seat public party support. | OWN |
| Political competition | One minus the absolute difference between the vote share of the left-wing (Social Democrats, the Left Party (former Communists), the Green Party) and the right-wing (the Conservatives, the Liberals, the Centre Party, the Christian Democrats, and New Democracy) parties. We use both the average over 1974-2003 and for individual years, depending on specification. | SS |
| Cutpoint density | Cutpoint density measure of swing voters (years 1992 and 1995). See text for definition. | EJ (2003) |
| Polcomp68 | Absolute difference between the vote share of the left-wing and the right-wing parties in the 1968 national election. | SSD |
| Coverage | Sum of household coverage of local newspapers (percent of households that read a particular paper) that have a coverage of at least 10 percent and are published at least twice a week. | TS |
| Income | Taxable income per capita. | SS |
| Population | Population size. | SS |
| Pop density | Population density. | SS |
| Public exp | Total public expenditure as a share of total municipal taxable income. | SALAR(2) |
| Tax rate | Municipal tax rate. | SS |
| High edu | The share of the population with at least some post-secondary education (available from 1985). | SS |
| Leftwing | Vote share of left-wing parties | SS |
| Seats | Number of seats in the municipal assembly. | SS |
| Herfindahl | Herfindahl index of parties in the local assembly. | SS |
| Own majority | Dummy taking the value of one if a single party holds more than 50% of the seats in the municipal assembly. | SS |
| Parties | Number of parties in municipal assembly. | SS |
| Age 0-15 | Share of population ages 0-15. | SS |
| Age 65+ | Share of population ages 65 and above. | SS |
| Woman | Dummy that takes the value of 1 if the chairman of the executive committee is a woman. | KA |
| Age | Age of the chairman of the executive committee. | KA |
| Private wage | Average wage for white collar workers in the private sector. | CSE |

SALAR is the *Swedish Association of Local Authorities and Regions*: (1) “Kommunalt förtröendevalda och deras arvoden” (1974-2000), (2) “Årsboken för Sveriges kommuner” (1976-2006); SS is *Statistics Sweden*, downloaded from “Statistikdatabasen” <http://www.ssd.scb.se/>; SKL is downloaded from www.webor.se; SSD is *Svensk Samhällsvetenskaplig Datatjänst*, dataset number 0148; KA is *KommunAktuellt* (various issues 1980-2000); CES is the *Confederation of Swedish Enterprise*, confidential wage data, accessed by personal contact; TS is *Tidningsstatistik AB*, “TS-boken” (1974-2003); OWN is from a survey conducted by the authors in June-September 2006. For more information about how the data is coded see under Table A3; EJ (2003) is Johansson (2003).

Table A2. List of all municipalities and their levels of party support per capita, base support per party and support per seat in local council

| <i>Municipality</i> | <i>Party support per capita</i> | <i>Base support per party¹</i> | <i>Support per seat</i> | <i>Population</i> |
|---------------------|---------------------------------|---|-------------------------|-------------------|
| Ale | 63 | 15000 | 29529 | 25835 |
| Alingsås | 24 | 11580 | 1930 | 35327 |
| Alvesta | 27 | | | 18930 |
| Aneby | 25 | 3448 | 2030 | 6631 |
| Arboga | 47 | | | 13574 |
| Arjeplog | 117 | 0 | 12419 | 3291 |
| Arvidsjaur | 88 | 15000 | 17055 | 7017 |
| Arvika | 20 | | | 26262 |
| Askersund | 45 | 5286 | 12886 | 11449 |
| Avesta | 47 | 11580 | 23160 | 22296 |
| Bengtstors | 15 | 2550 | 1785 | 10516 |
| Berg | 22 | 4000 | 2600 | 7949 |
| Bjuv | 36 | | | 13674 |
| Boden | 92 | 79590 | 29215 | 28268 |
| Bollnäs | 59 | 19300 | 25090 | 26210 |
| Borgholm | 16 | | | 11162 |
| Borlänge | 43 | | | 47049 |
| Boxholm | 18 | 3000 | 2000 | 5291 |
| Bromölla | 47 | 17000 | 11000 | 12022 |
| Bräcke | 60 | 4257 | 9812 | 7406 |
| Burlöv | 27 | 7720 | 7720 | 15326 |
| Båstad | 26 | 12000 | 4700 | 14009 |
| Dals-Ed | 19 | 2000 | 2000 | 5044 |
| Danderyd | 48 | 50000 | 25000 | 29755 |
| Degerfors | 48 | 3000 | 11500 | 10306 |
| Eda | 26 | 3309 | 5084 | 8670 |
| Ekerö | 42 | 4000 | 18000 | 22936 |
| Eksjö | 28 | 13000 | 8000 | 16761 |
| Emmaboda | 35 | 10000 | 6630 | 9690 |
| Enköping | 31 | 20000 | 20000 | 37647 |
| Eskilstuna | 30 | 37900 | 37900 | 90089 |
| Eslöv | 37 | 22500 | 18500 | 28985 |
| Fagersta | 46 | | | 12325 |
| Falkenberg | 50 | | | 38896 |
| Falköping | 38 | 12000 | 19308 | 30896 |
| Falun | 26 | | | 54841 |
| Filipstad | 38 | 6121 | 10422 | 11178 |
| Finspång | 35 | 10000 | 12000 | 21208 |
| Flen | 32 | 10000 | 10000 | 16520 |
| Forshaga | 22 | 5191 | 5191 | 11474 |
| Gagnef | 33 | 7560 | 7560 | 10008 |
| Gislaved | 25 | 13818 | 12784 | 29976 |
| Gnosjö | 29 | 7122 | 3070 | 9997 |
| Gotland | 86 | | 47033 | 57381 |
| Grums | 29 | 10000 | 6500 | 9312 |

| | | | | |
|---------------|-----|--------|--------|--------|
| Grästorps | 18 | 2000 | 3000 | 5848 |
| Gullspång | 21 | 5000 | 2000 | 5765 |
| Gällivare | 56 | 11580 | 16984 | 19420 |
| Gävle | 37 | 37900 | 37900 | 91276 |
| Göteborg | 38 | 231600 | 193000 | 474921 |
| Götene | 45 | 3000 | 9096 | 12983 |
| Habo | 23 | 4821 | 4564 | 9584 |
| Hagfors | 36 | 16333 | 9561 | 13797 |
| Hallsberg | 51 | 11029 | 15440 | 15651 |
| Hallstahammar | 50 | 10856 | 17370 | 14986 |
| Halmstad | 49 | 42300 | 54811 | 86585 |
| Hammarö | 30 | 6100 | 12400 | 14237 |
| Haninge | 32 | 14500 | 32482 | 70902 |
| Haparanda | 121 | 38600 | 19300 | 10334 |
| Heby | 38 | 3215 | 12599 | 13725 |
| Hedemora | 50 | 18950 | 15463 | 15584 |
| Helsingborg | 59 | | | 119406 |
| Herrljunga | 17 | 3000 | 3500 | 9486 |
| Hjo | 39 | 5500 | 5032 | 8845 |
| Hofors | 48 | 4000 | 14668 | 10372 |
| Huddinge | 25 | 29000 | 24000 | 86457 |
| Hultsfred | 23 | 11923 | 5376 | 14893 |
| Hylte | 59 | 0 | 11000 | 10401 |
| Hällefors | 56 | 15000 | 11580 | 7794 |
| Härjedalen | 70 | 5338 | 12810 | 11289 |
| Härnösand | 44 | 30000 | 14750 | 25193 |
| Härryda | 17 | 8000 | 9600 | 30844 |
| Hässleholm | 44 | 37900 | 30320 | 48536 |
| Håbo | 34 | 5000 | 9000 | 17864 |
| Höganäs | 28 | | | 22790 |
| Högsby | 30 | 5781 | 3384 | 6300 |
| Hörby | 22 | 6000 | 6000 | 13949 |
| Höör | 22 | 16000 | 4000 | 14169 |
| Jokkmokk | 85 | 10000 | 11500 | 5782 |
| Jönköping | 40 | 54000 | 54000 | 118581 |
| Kalix | 49 | 17370 | 17370 | 17805 |
| Kalmar | 25 | 0 | 24723 | 60066 |
| Karlsborg | 30 | 3000 | 5685 | 6967 |
| Karlshamn | 32 | 30759 | 14475 | 30739 |
| Karlskoga | 74 | 68000 | 34000 | 30600 |
| Karlskrona | 55 | 45100 | 39600 | 60676 |
| Karlstad | 31 | 35370 | 29432 | 80934 |
| Katrineholm | 41 | 10000 | 28425 | 32381 |
| Kil | 13 | 7000 | 3000 | 11892 |
| Kinda | 19 | | | 10014 |
| Klippan | 32 | 15000 | 10000 | 15745 |
| Kramfors | 54 | 9650 | 26592 | 20711 |
| Kristianstad | 33 | | | 74951 |
| Kristinehamn | 38 | 32141 | 13439 | 23963 |
| Krokom | 24 | 6360 | 8175 | 14005 |

| | | | | |
|--------------|----|--------|--------|--------|
| Kumla | 68 | | | 19105 |
| Kungsbacka | 31 | | | 66573 |
| Kungsör | 42 | 9000 | 6500 | 8222 |
| Kungälv | 15 | 11400 | 8300 | 37912 |
| Kävlinge | 42 | 20000 | 20000 | 25191 |
| Köping | 45 | 6848 | 21243 | 24647 |
| Laholm | 43 | 16850 | 16850 | 22750 |
| Landskrona | 44 | | | 38475 |
| Laxå | 48 | 8455 | 8455 | 6471 |
| Leksand | 34 | 6000 | 9650 | 15301 |
| Lerum | 39 | 10808 | 25476 | 35558 |
| Lessebo | 39 | | | 8255 |
| Lidingö | 32 | 50000 | 14000 | 41192 |
| Lidköping | 30 | 23786 | 18500 | 36941 |
| Lilla Edet | 23 | 10000 | 7500 | 13010 |
| Lindesberg | 29 | 10000 | 13500 | 23492 |
| Linköping | 27 | | | 135066 |
| Ljungby | 30 | | | 26943 |
| Ljusdal | 49 | 7580 | 18154 | 19776 |
| Ljusnarsberg | 67 | | | 5482 |
| Lomma | 19 | 5790 | 6176 | 18167 |
| Ludvika | 62 | | | 25975 |
| Luleå | 37 | 38600 | 38600 | 72139 |
| Lund | 34 | 135100 | 38600 | 100402 |
| Lycksele | 44 | 27000 | 8805 | 12884 |
| Lysekil | 25 | 5000 | 8000 | 14801 |
| Malmö | 46 | 193000 | 173700 | 265481 |
| Malung | 34 | 8000 | 7500 | 10593 |
| Malå | 37 | | | 3553 |
| Mariestad | 30 | 9100 | 11390 | 23743 |
| Mark | 33 | 38600 | 19300 | 33015 |
| Markaryd | 37 | | | 9615 |
| Mellerud | 32 | 5597 | 4246 | 9807 |
| Mjölby | 50 | | | 25153 |
| Mora | 37 | | | 20024 |
| Mullsjö | 36 | | | 7124 |
| Munkedal | 14 | 3500 | 3500 | 10434 |
| Munkfors | 42 | 3860 | 5018 | 4086 |
| Mölnadal | 24 | 51467 | 12867 | 57079 |
| Mönsterås | 27 | 5034 | 6343 | 13220 |
| Mörbylånga | 19 | 5486 | 4209 | 13430 |
| Nacka | 50 | | | 76624 |
| Nora | 28 | 8428 | 6743 | 10515 |
| Norberg | 28 | 12000 | 3000 | 5876 |
| Nordanstig | 36 | 12000 | 5000 | 10021 |
| Norrköping | 24 | 75000 | 25764 | 123303 |
| Norrtälje | 47 | 60000 | 34740 | 53702 |
| Nybro | 29 | 10000 | 8800 | 19871 |
| Nynäshamn | 57 | 0 | 23000 | 24528 |
| Nässjö | 45 | | | 29341 |

| | | | | |
|-----------------|----|--------|--------|--------|
| Ockelbo | 87 | | | 6101 |
| Olofström | 49 | 5000 | 13000 | 13637 |
| Orsa | 49 | 19000 | 8000 | 7015 |
| Orust | 23 | | | 15113 |
| Osby | 33 | 2274 | 9780 | 12637 |
| Oskarshamn | 25 | | | 26161 |
| Ovanåker | 44 | 10000 | 11300 | 12193 |
| Oxelösund | 41 | 7550 | 13152 | 11183 |
| Partille | 30 | | | 33088 |
| Perstorp | 41 | | | 6789 |
| Piteå | 67 | 38600 | 40530 | 40531 |
| Ragunda | 27 | | | 6079 |
| Ronneby | 38 | 18110 | 18850 | 28472 |
| Rättvik | 23 | | | 10898 |
| Sala | 40 | 0 | 12000 | 21663 |
| Sandviken | 52 | 9650 | 32810 | 36765 |
| Sigtuna | 71 | 2215 | 25500 | 35771 |
| Simrishamn | 24 | 5911 | 965 | 19406 |
| Sjöbo | 20 | 5000 | 6200 | 17027 |
| Skara | 35 | | | 18311 |
| Skellefteå | 46 | | | 71813 |
| Skinnskatteberg | 41 | 10000 | 4000 | 4785 |
| Skurup | 19 | 5000 | 4097 | 13949 |
| Skövde | 23 | 19300 | 18257 | 49405 |
| Smedjebacken | 43 | | | 11157 |
| Sollefteå | 66 | | | 21384 |
| Sollentuna | 69 | 100000 | 20000 | 58515 |
| Solna | 76 | 100000 | 60000 | 57585 |
| Sorsele | 20 | 0 | 2000 | 3046 |
| Sotenäs | 20 | 3088 | 4029 | 9467 |
| Staffanstorp | 16 | 13101 | 5580 | 20110 |
| Stenungsund | 32 | 18175 | 14185 | 21755 |
| Stockholm | 28 | 300000 | 171652 | 758148 |
| Storfors | 68 | 3411 | 8300 | 4605 |
| Storuman | 31 | 5000 | 4000 | 6679 |
| Strängnäs | 25 | 93625 | 6114 | 30015 |
| Strömstad | 32 | 7720 | 6330 | 11218 |
| Strömsund | 51 | 7000 | 13000 | 13371 |
| Sundsvall | 51 | 42240 | 45132 | 93252 |
| Sunne | 27 | 11250 | 6000 | 13573 |
| Surahammar | 48 | 10000 | 8400 | 10207 |
| Svalöv | 28 | | | 12705 |
| Svenljunga | 16 | 1000 | 4025 | 10529 |
| Säffle | 22 | | | 16289 |
| Säter | 25 | 7000 | 6500 | 11043 |
| Sävsjö | 24 | 6000 | 5000 | 10975 |
| Söderhamn | 36 | 28950 | 13510 | 27250 |
| Söderköping | 8 | 1500 | 1422 | 14009 |
| Sölvesborg | 70 | 19708 | 19708 | 16351 |
| Tanum | 22 | 5000 | 5000 | 12210 |

| | | | | |
|--------------|----|-------|-------|--------|
| Tibro | 32 | 10422 | 9352 | 10624 |
| Tidaholm | 36 | 18950 | 7012 | 12585 |
| Tierp | 55 | 7720 | 22002 | 20088 |
| Timrå | 87 | 14957 | 29122 | 17784 |
| Tingsryd | 35 | 8000 | 8000 | 13175 |
| Tomelilla | 25 | 10000 | 5769 | 12447 |
| Torsby | 47 | 14219 | 7283 | 13404 |
| Torsås | 12 | 2196 | 2125 | 7293 |
| Tranemo | 25 | 9543 | 6362 | 11988 |
| Tranås | 29 | 10991 | 10991 | 17718 |
| Trelleborg | 36 | | 23688 | 38759 |
| Trollhättan | 43 | 28654 | 33654 | 52937 |
| Tyresö | 56 | | | 39720 |
| Täby | 30 | 24750 | 19800 | 60198 |
| Töreboda | 17 | 1500 | 3500 | 9426 |
| Uddevalla | 22 | 16212 | 17370 | 49683 |
| Ulricehamn | 40 | 11370 | 11370 | 22299 |
| Umeå | 34 | 51172 | 46631 | 106525 |
| Upplands | | | | |
| Väsby | 37 | 35000 | 21000 | 37444 |
| Upplands-Bro | 35 | | | 21162 |
| Uppsala | 18 | 0 | 38600 | 179673 |
| Uppvidinge | 43 | | | 9580 |
| Vaggeryd | 42 | 10000 | 10000 | 12603 |
| Valdemarsvik | 16 | 5000 | 2400 | 8230 |
| Vallentuna | 18 | 15000 | 9000 | 25905 |
| Vansbro | 35 | 0 | 5000 | 7235 |
| Varberg | 45 | 16700 | 36400 | 53346 |
| Vellinge | 16 | 0 | 9650 | 31087 |
| Vetlanda | 20 | | | 26428 |
| Vilhelmina | 85 | 50000 | 10000 | 7655 |
| Vimmerby | 24 | 4126 | 6822 | 15628 |
| Vingåker | 39 | 20000 | 14175 | 9181 |
| Vänersborg | 29 | 38600 | 5790 | 37025 |
| Värnamo | 31 | 9996 | 14700 | 32252 |
| Västervik | 20 | 15500 | 9500 | 36913 |
| Västerås | 29 | | | 128902 |
| Växjö | 43 | | | 75036 |
| Vårgårda | 15 | 3000 | 3100 | 10668 |
| Ydre | 32 | 5000 | 2200 | 4004 |
| Ystad | 20 | 7462 | 7462 | 26383 |
| Älmhult | 49 | 15214 | 12316 | 15444 |
| Älvdalen | 53 | 7000 | 8000 | 7617 |
| Älvkarleby | 47 | | | 8970 |
| Älvsbyn | 68 | 23160 | 11580 | 8835 |
| Ängelholm | 29 | | | 37706 |
| Åmål | 37 | 2000 | 9548 | 12829 |
| Ånge | 62 | 15000 | 15000 | 10948 |
| Åre | 42 | 6986 | 8982 | 9692 |
| Årjäng | 29 | 10000 | 4500 | 9743 |
| Åstorp | 41 | 10000 | 15000 | 13150 |

| | | | | |
|--------------|----|-------|-------|-------|
| Åtvidaberg | 53 | | | 11887 |
| Öckerö | 26 | 13510 | 5790 | 11981 |
| Örkelljunga | 42 | | | 9419 |
| Örnsköldsvik | 28 | 12308 | 23002 | 55047 |
| Östersund | 39 | 46320 | 34740 | 58156 |
| Östhammar | 57 | | 11960 | 21827 |
| Östra Göinge | 27 | | | 14087 |
| Överkalix | 49 | | | 4058 |
| Övertorneå | 78 | 19300 | 7720 | 5391 |

¹Most municipalities have a formula for party support consisting of a base sum per party and a sum per seat in the local council. These municipalities are easy to code into our framework. Some municipalities, however, have different base sums per party for different spans of seats. For example, in Lomma municipality parties with less the 10 seats get 5790 krona and municipalities with more then 10 seats get 11580 krona in base support. In these cases we have used the smallest sum, i.e. the sum parties with less then 10 seats as a measure of the base support.

Notice that since the data for party support per capita is from Statistics Sweden and the data on base party support and party support per seat is from our own survey sent out to the municipalities, the levels may not be exactly comparable. Reasons could be, for example, that the structure of party support is non-linear and the coding of the bas sums and sums per seat do not capture all party support, or that municipalities may have phasing out rules implying that parties get support depending on the number of seats in 2002. Values are in 2003 years prices.

Table A3. List of the 10 municipalities with lowest and highest level of party support per capita 2003.

| <i>Municipality</i> | <i>Party support per capita</i> | <i>Base support per party</i> | <i>Support per seat</i> | <i>Population</i> |
|---|---------------------------------|-------------------------------|-------------------------|-------------------|
| Municipalities with lowest level of party support per capita | | | | |
| Söderköping | 8 | 1500 | 1422 | 14009 |
| Torsås | 12 | 2196 | 2125 | 7293 |
| Kil | 13 | 7000 | 3000 | 11892 |
| Munkedal | 14 | 3500 | 3500 | 10434 |
| Bengtsfors | 15 | 2550 | 1785 | 10516 |
| Kungälv | 15 | 11400 | 8300 | 37912 |
| Vårgårda | 15 | 3000 | 3100 | 10668 |
| Valdemarsvik | 16 | 5000 | 2400 | 8230 |
| Vellinge | 16 | 0 | 9650 | 31087 |
| Svenljunga | 16 | 1000 | 4025 | 10529 |
| Municipalities with highest level of party support per capita | | | | |
| Övertorneå | 78 | 19300 | 7720 | 5391 |
| Vilhelmina | 85 | 50000 | 10000 | 7655 |
| Jokkmokk | 85 | 10000 | 11500 | 5782 |
| Gotland | 86 | | 47033 | 57381 |
| Ockelbo | 87 | | | 6101 |
| Timrå | 87 | 14957 | 29122 | 17784 |
| Arvidsjaur | 88 | 15000 | 17055 | 7017 |
| Boden | 92 | 79590 | 29215 | 28268 |
| Arjeplog | 117 | 0 | 12419 | 3291 |
| Haparanda | 121 | 38600 | 19300 | 10334 |

Table A4. Basic results for political competition among counties

| | (1) | (2) | (3) | (4) |
|-----------------------|--|---------------------|--|--------------------|
| | <i>Public financial support to political parties (per cap)</i> | | <i>Δ Public financial support to political parties (per cap)</i> | |
| | OLS | IV | OLS | IV |
| | 2003 | 2003 | 1977-2003 | 1977-2003 |
| Political competition | -19.47 (12.64) | -27.37** (10.78) | -2.30 (1.36) | -3.01** (1.21) |
| Income | -14.541 (10.23) | -16.55* (9.51) | -1.07 (1.84) | -1.14 (1.42) |
| Population | -0.80 (1.591) | -0.56 (1.42) | -1.15 (1.28) | -1.26 (1.07) |
| Public exp | -1.11 (0.99) | -0.94 (0.84) | -0.46 (1.41) | -0.29 (1.13) |
| Leftwing | 55.237*** (16.46) | 47.26*** (15.63) | 1.77 (3.29) | 0.90 (2.86) |
| Party support (1977) | | | -0.14*** (0.040) | -0.14*** (0.03) |
| F-test | | 51.7 | | 38.9 |
| Observations | 20 | 20 | 18 | 18 |
| R-squared | 0.70 | | 0.78 | |

The dependent variable in columns (1)-(2) is public financial party support per capita, and in (3)-(4) it is the percentage change in public financial party support between 1977-2003. In (3)-(4), public expenditure share, income per capita, and population are all expressed as changes between 1977-2003. Political competition and Leftwing in (3)-(4) are the average values of the respective variable between 1977-2003. The instrument is the difference between the political blocs in the 1960 national elections (polcomp68). F-test reports the F-statistic on the instrument from the first-stage regression. Robust standard-values in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Constant not reported.

Table 1. Summary statistics

| variable | N | mean | sd | min | max |
|----------------------------------|------|-----------|-----------|----------|----------|
| <u>Municipalities</u> | | | | | |
| Party support | 2537 | 31.73 | 14.44 | 4.35 | 115.23 |
| Δ Party support 1974-2003 | 251 | 0.89 | 0.93 | -0.59 | 4.83 |
| Wage | 1748 | 27.83 | 5.812 | 13.81 | 71.22 |
| Base/seats | 207 | 1.39 | 1.49 | 0 | 15.31 |
| Political competition | 2537 | 0.81 | 0.14 | 0.27 | 1 |
| Political competition (avg) | 254 | 0.81 | 0.12 | 0.39 | 0.96 |
| Cutpoint density | 492 | 0.03 | 0.01 | 0.01 | 0.05 |
| Herfindahl | 254 | 0.25 | 0.05 | 0.18 | 0.48 |
| Own majority | 254 | 0.13 | 0.34 | 0 | 1 |
| Polcomp68 | 2510 | 0.20 | 0.15 | 0.00 | 0.64 |
| Coverage | 2524 | 86.14 | 19.77 | 19.07 | 178 |
| Income | 2537 | 0.91 | 0.21 | 0.42 | 2.46 |
| Population | 2537 | 30221.50 | 56016.85 | 3046 | 758148 |
| Pop density | 2537 | 106.52 | 339.25 | 0.25 | 4047.99 |
| Public exp | 2537 | 39.54 | 7.40 | 18.21 | 88.23 |
| Tax rate | 2537 | 17.61 | 2.86 | 10.10 | 32.75 |
| High edu | 1523 | 0.11 | 0.05 | 0.04 | 0.43 |
| Leftwing | 2537 | 0.50 | 0.12 | 0.13 | 0.83 |
| Seats | 254 | 46.30 | 11.65 | 31 | 101 |
| Parties | 254 | 7.14 | 0.83 | 5 | 8 |
| Age 0-15 | 2537 | 20.90 | 2.62 | 12.71 | 36.37 |
| Age 65+ | 2537 | 17.99 | 4.01 | 3.27 | 27.24 |
| Woman | 2022 | 0.12 | 0.32 | 0 | 1 |
| Age | 1771 | 50.81 | 7.74 | 25 | 71 |
| Private wage | 2282 | 19379.84 | 1906.34 | 13809.69 | 32762.08 |
| <u>Counties</u> | | | | | |
| Party support | 606 | 19.54 | 4.94 | 8.82 | 37.47 |
| Δ Party support 1977-2003 | 18 | 0.78 | 0.52 | -0.16 | 2.22 |
| Political competition | 611 | 0.87 | 0.09 | 0.59 | 0.99 |
| Income | 629 | 95.91 | 15.52 | 73.78 | 160.56 |
| Population | 629 | 353793.70 | 319136.50 | 127645 | 1860872 |
| Public exp | 627 | 17.52 | 2.55 | 12.22 | 29.12 |
| Leftwing | 611 | 0.53 | 0.07 | 0.38 | 0.69 |

For municipalities, see Table A1 for sources and definitions. For counties, the following sources are used: *Party support* and *Public exp* are from Svenska kommunförbundet "Statistisk årsbok för landsting" (1976-2005); *Political competition*, *Income*, *Population*, and *Leftwing* are from Statistics Sweden "Statistikdatabasen" <http://www.ssd.scb.se/>.

Table 2. Correlations between main variables of interest

| | Party support | Δ Party support | Wage | Pol comp | Cutp-density | Polcomp68 | Coverage | Income | Pop | Pop density | Public exp | Tax rate | High edu | Leftwing |
|--------------|---------------|-----------------|-------|----------|--------------|-----------|----------|--------|------|-------------|------------|----------|----------|----------|
| Δ Party supp | -0.54 | | | | | | | | | | | | | |
| Wage | 0.13 | -0.23 | | | | | | | | | | | | |
| Pol comp | -0.20 | -0.16 | 0.00 | | | | | | | | | | | |
| Cutpoint den | -0.25 | Na | -0.15 | 0.69 | | | | | | | | | | |
| Polcomp68 | 0.16 | 0.15 | -0.12 | -0.73 | -0.39 | | | | | | | | | |
| Coverage | -0.25 | 0.22 | -0.26 | -0.02 | 0.07 | 0.10 | | | | | | | | |
| Income | 0.26 | -0.10 | 0.59 | -0.08 | -0.18 | -0.04 | -0.46 | | | | | | | |
| Population | 0.00 | -0.11 | 0.45 | 0.16 | 0.02 | -0.19 | -0.14 | 0.24 | | | | | | |
| Pop density | 0.04 | -0.08 | 0.42 | 0.05 | -0.05 | -0.10 | -0.20 | 0.38 | 0.69 | | | | | |
| Public exp | 0.17 | -0.04 | -0.16 | 0.08 | 0.04 | -0.01 | 0.18 | -0.27 | 0.05 | -0.13 | | | | |
| Tax rate | 0.29 | 0.10 | 0.11 | -0.00 | 0.04 | 0.00 | -0.29 | 0.51 | 0.10 | -0.06 | 0.34 | | | |
| High edu | -0.03 | Na | 0.64 | 0.02 | -0.08 | -0.22 | -0.29 | 0.80 | 0.42 | 0.47 | -0.34 | 0.15 | | |
| Leftwing | 0.46 | -0.10 | -0.02 | -0.19 | -0.15 | 0.18 | -0.12 | 0.03 | 0.03 | -0.09 | 0.19 | 0.23 | -0.21 | |
| Private wage | 0.16 | -0.13 | 0.41 | -0.07 | -0.11 | 0.04 | -0.32 | 0.54 | 0.15 | 0.25 | -0.23 | 0.20 | 0.47 | 0.15 |

Correlations for municipal level variables.

Table 3. Main results for political competition

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|-----------------------|---|---------------------|------------------------|-----------------------|---------------------|-----------------------|------------------------|
| | <i>Public financial support to political parties (per capita)</i> | | | | | | Δ party support |
| | OLS | IV | OLS | IV | OLS-FE | OLS-FE | IV |
| | 2003 | 2003 | 1995 | 1995 | 1974-2003 | 1992-1995 | 1974-2003 |
| Political competition | -17.56** (7.81) | -19.40** (9.60) | | | -2.83 (2.38) | | -1.12** (0.52) |
| Cut point density | | | -493.65*** (148.29) | -845.71** (345.35) | | -132.76*** (47.61) | |
| Public exp | 1.10*** (0.33) | 1.12*** (0.33) | 0.11 (0.20) | 0.01 (0.21) | 0.09** (0.05) | -0.17 (0.13) | 0.18 (0.25) |
| Income | 55.95*** (15.70) | 57.41*** (15.30) | 34.38*** (12.43) | 28.75** (13.78) | -8.74* (5.13) | -6.89 (27.91) | -0.24 (0.46) |
| Population | 2.54 (1.62) | 2.47 (1.66) | -0.58 (1.56) | -0.08 (1.53) | -10.97*** (2.98) | -4.36 (26.48) | -0.06 (0.30) |
| Leftwing | 44.65*** (7.70) | 45.12*** (7.98) | 45.20*** (9.08) | 37.09*** (11.47) | 8.13 (5.40) | -0.71 (15.44) | 0.90 (0.61) |
| High edu. | -49.77* (26.29) | -50.43* (25.98) | -36.17 (30.41) | -41.78 (31.31) | | 39.68 (108.84) | |
| Party support (1974) | | | | | | | -0.05*** (0.01) |
| Mun effects | | | | | Yes | Yes | |
| Time effects | | | | | Yes | Yes | |
| F-test | | 564.31 | | 45.64 | | | 546.34 |
| Observations | 254 | 251 | 246 | 244 | 2537 | 492 | 249 |
| R-squared | 0.28 | | 0.35 | | 0.75 | 0.94 | |

The dependent variable in columns (1)-(7) is public financial party support per capita, and in (8) it is the percentage change in public party financial support 1974-1995. In columns (1)-(3) and (8), political competition is the average value 1974-2003. In (8) public exp, income per capita and population are the change 1974-2003 and leftwing is the average over the period. F-test reports the F-statistic on the instrument from the first-stage regression. The instrument for *political competition* and *cutpoint density* is *polcomp68*. Robust standard errors reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Constant not presented.

Table 4. Adding media and interactions

| | (1) | (2) | (3) | (4) | (5) |
|---------------------------|---------------------|---|---------------------|---------------------|---------------------|
| | | <i>Public financial support to political party (per capita)</i> | | | |
| | OLS | IV | OLS-FE | OLS-FE | IV-FE |
| | 2003 | 2003 | 1974-2003 | 1974-2003 | 1974-2003 |
| Coverage | -0.14* (0.07) | -0.14* (0.07) | -0.08*** (0.02) | -0.26*** (0.10) | -0.30*** (0.10) |
| Political competition | -20.79*** (7.92) | -23.37** (9.61) | -3.33 (2.38) | -3.50 (2.40) | -3.93* (2.30) |
| Political comp × coverage | | | | 0.22** (0.11) | 0.27** (0.12) |
| Public exp | 1.12*** (0.33) | 1.14*** (0.33) | 0.08* (0.05) | 0.07 (0.05) | 0.07* (0.04) |
| Income | 50.20*** (15.68) | 51.13*** (15.09) | -7.47 (5.13) | -8.64* (5.15) | -8.67* (4.92) |
| Population | 2.46 (1.62) | 2.44 (1.67) | -13.06*** (2.97) | -12.30*** (3.00) | -12.39*** (2.88) |
| Leftwing | 44.08*** (7.78) | 44.40*** (8.09) | 6.50 (5.43) | 6.73 (5.44) | 7.34 (5.21) |
| High edu | -44.60* (25.57) | -44.96* (25.13) | | | |
| Mun effects | | | Yes | Yes | Yes |
| Time effects | | | Yes | Yes | Yes |
| F-test | | 542.09 | | | 6560.48 |
| Observations | 254 | 251 | 2524 | 2524 | 2498 |
| R-squared | 0.29 | | 0.75 | 0.75 | |

The dependent variable is public financial party support per capita. In columns (1) and (2), political competition is the average value 1974-2003. The interaction in (4) and (5) is the average political competition 1974-2003 × coverage. F-test reports the F-statistic on the instrument from the first-stage regression. The instrument for *political competition* is *polcomp68*. Robust standard errors are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Constant not presented.

Table 5. The structure of financial party support

| | (1) | (2) | (3) | (4) |
|--------------|--------------------|---------------------|--------------------|-------------------|
| | | <i>Base/mandate</i> | | |
| | OLS | OLS | OLS | OLS |
| | 2003 | 2003 | 2003 | 2003 |
| Herfindahl | -5.60*** (2.02) | | -6.15*** (1.98) | |
| Own majority | | -0.46*** (0.17) | | -0.41** (0.18) |
| Seats | | | 0.00 (0.02) | 0.00 (0.02) |
| Parties | | | 0.01 (0.11) | 0.10 (0.12) |
| Income | | | 2.19* (1.21) | 1.72 (1.14) |
| Population | | | -0.13 (0.24) | -0.08 (0.24) |
| Pop density | | | 0.03 (0.09) | 0.05 (0.09) |
| Observations | 207 | 207 | 207 | 207 |
| R-squared | 0.03 | 0.01 | 0.06 | 0.04 |

Dependent variable is the financial per party support (base) divided with the per seat financial support (seat). Robust standard errors are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Constant not presented.

Table 6 - Election cycles in party support (counties)

| | (1) | (2) |
|------------------------------|--|-----------|
| | <i>Public financial support to political party</i> | |
| | <i>(per capita) in t</i> | |
| | OLS-FE | OLS-FE |
| | 1977-2003 | 1977-2003 |
| Election year | -5.69*** | -4.84** |
| × pol competition | (1.98) | (2.11) |
| Election year | 5.16*** | |
| | (1.78) | |
| Population | -6.19** | -9.09*** |
| | (2.55) | (3.15) |
| Income | 2.78*** | 1.65 |
| | (0.94) | (6.13) |
| Public exp | -0.01 | -0.14 |
| | (0.04) | (0.11) |
| Party support (<i>t</i> -1) | 0.74*** | 0.70*** |
| | (0.04) | (0.04) |
| County effects | Yes | Yes |
| Time effects | | Yes |
| Observations | 573 | 573 |
| R-squared | 0.88 | 0.89 |

The dependent variable is public financial party support per capita set in time period *t*. The unit of analysis is counties. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 7. Right-wing and left-wing municipalities

| | (1) | (2) | (3) | (4) |
|-----------------------|---|-----------------------|-------------------|-----------------------|
| | <i>Public financial support to political parties (per capita)</i> | | | |
| | Rightwing | | Leftwing | |
| | IV | IV | IV | IV |
| | 2003 | 1995 | 2003 | 1995 |
| Political competition | -15.89 (20.39) | | -39.02 (33.74) | |
| Cut point density | | -1,232.77 (923.96) | | -1510.33* (881.62) |
| Coverage | -0.03 (0.05) | -0.06 (0.06) | -0.18 (0.12) | -0.28** (0.12) |
| Public exp | 0.35 (0.37) | 0.64 (0.52) | 1.32** (0.53) | -0.53 (0.68) |
| Income | 17.57 (18.85) | 19.80 (30.96) | 43.27 (60.05) | 5.57 (61.86) |
| Population | 5.53* (3.20) | 4.15 (3.39) | 0.23 (4.61) | -4.57 (3.65) |
| High edu | -29.45 (41.31) | -40.72 (74.75) | 31.66 (96.84) | 82.60 (134.05) |
| F-test | 30.62 | 6.16 | 54.91 | 15.02 |
| Observations | 41 | 41 | 68 | 68 |

The dependent variable is public financial party support per capita. In the sample of municipalities used in (1)-(2), the right-wing bloc has had more than 50 percent of the votes in all election 1974-2003. Equivalent but left wing in (3)-(4). F-test reports the F-statistic on the instrument from the first-stage regression. The instrument for *political competition* and *cutpoint density* is *polcomp68*. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 8. Wages

| | (1) | (2) | (3) | (4) | (5) |
|---------------------------------|---|-------------------|-----------------|------------------|-----------------|
| | <i>Wage of highest paid politician (ln)</i> | | | | |
| | OLS | IV | OLS-FE | OLS-FE | IV-FE |
| | 1999 | 1999 | 1974-1999 | 1974-1999 | 1974-1999 |
| Political competition | -0.23*** (0.09) | -0.21** (0.09) | -0.02 (0.03) | -0.03 (0.03) | -0.02 (0.03) |
| Coverage/1000 | -1.25** (0.47) | -1.23** (0.47) | 0.06 (0.25) | -2.22* (1.34) | -1.23 (1.30) |
| Pol competition × Coverage/1000 | | | | 2.82* (1.65) | 1.57 (1.63) |
| Woman | -0.03 (0.02) | -0.02 (0.02) | | | |
| Age | 0.01 (0.01) | 0.01 (0.01) | | | |
| Age ² | -0.00 (0.00) | -0.00 (0.00) | | | |
| Tax rate | -0.01 (0.01) | -0.01 (0.01) | -0.01 (0.00) | -0.01 (0.00) | -0.01 (0.00) |
| Private wage | -0.24** (0.10) | -0.23** (0.10) | -0.06 (0.06) | -0.06 (0.06) | -0.06 (0.05) |
| Income | 0.24* (0.14) | 0.27* (0.14) | 0.16* (0.10) | 0.15 (0.10) | 0.15* (0.09) |
| Population | 0.10*** (0.02) | 0.10*** (0.02) | 0.06 (0.05) | 0.08 (0.05) | 0.06 (0.05) |
| Leftwing | 0.10 (0.10) | 0.11 (0.09) | -0.11 (0.08) | -0.11 (0.08) | -0.11 (0.07) |
| High edu | 0.51 (0.33) | 0.46 (0.32) | | | |
| Mun effects | | | Yes | Yes | Yes |
| Time effects | | | Yes | Yes | Yes |
| F-test | | 558.83 | | | 6263.50 |
| Observations | 257 | 254 | 2197 | 2197 | 2174 |
| R-squared | 0.53 | | 0.77 | 0.77 | |

The dependent variable is the (log of) the wage paid to the highest paid politician in each municipality. In (1) and (2) political competition is the average values over the period 1974-1999. Also the interactions in (4) and (5) use the average value of the political competition variable. F-test reports the F-statistic on the instrument from the first-stage regression. Instrument for *political competition* and *cut point density* is *polcomp68*. Robust standard errors reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Constant not presented.

Table 9. Response to shocks

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|-----------------------|---|---------------------|---------------------|---------------------|---|--------------------|---------------------|--------------------|
| | <i>Public financial support to political parties (per capita)</i> | | | | <i>Wage of highest paid politician (ln)</i> | | | |
| | OLS-FE 1974-2003 | IV-FE 1974-2003 | OLS-FE 1974-2003 | IV-FE 1974-2003 | OLS-FE 1974-1999 | IV-FE 1974-1999 | OLS-FE 1974-1999 | IV-FE 1974-1999 |
| Pol comp × income | -23.43*** (8.25) | -42.77*** (9.84) | | | -0.49*** (0.15) | -0.46*** (0.17) | | |
| Pol comp × public exp | | | -0.84*** (0.32) | -0.76** (0.35) | | | | |
| Pol comp × tax rate | | | | | | | -0.03*** (0.01) | -0.03*** (0.01) |
| Coverage | -0.08*** (0.02) | -0.08*** (0.02) | -0.08*** (0.02) | -0.08*** (0.02) | 0.05 (0.25) | 0.04 (0.24) | 0.05 (0.25) | 0.02 (0.24) |
| Income | 9.04 (7.83) | 22.97*** (8.55) | -6.30 (5.00) | -6.24 (4.78) | 0.52*** (0.14) | 0.50*** (0.14) | 0.13 (0.09) | 0.12 (0.09) |
| Public exp | 0.06 (0.05) | 0.05 (0.04) | 0.77*** (0.28) | 0.70** (0.30) | | | | |
| Tax rate | | | | | -0.01* (0.00) | -0.01* (0.00) | 0.01* (0.01) | 0.02** (0.01) |
| Population | -12.11*** (2.95) | -11.34*** (2.86) | -13.56*** (2.95) | -13.76*** (2.83) | 0.09* (0.05) | 0.08 (0.05) | 0.10* (0.05) | 0.10* (0.05) |
| Leftwing | 7.77 (5.45) | 9.08* (5.22) | 7.25 (5.42) | 7.75 (5.17) | -0.09 (0.08) | -0.09 (0.07) | -0.09 (0.08) | -0.09 (0.07) |
| Private wage | | | | | -0.07 (0.06) | -0.07 (0.05) | -0.06 (0.06) | -0.07 (0.05) |
| Mun effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Time effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| F-test | | 4072.42 | | 7435.29 | | 3629.98 | | 5825.99 |
| Observations | 2524 | 2498 | 2524 | 2498 | 2197 | 2174 | 2197 | 2174 |
| R-squared | 0.75 | | 0.75 | | 0.77 | | 0.77 | |

The dependent variable is the public financial support per capita (column 1-4) and the (log of) wage paid to the highest paid politician in each municipality (column 5-8). F-test reports the F-statistic on the instrument from the first-stage regression. Instrument for *political competition* and *cutpoint density* is *polcomp68*. Robust standard errors reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Constant not presented.