
ECONOMICS

Sociology

Mačkić, V., & Rusmir, F. (2024). Pork barrel spending: The missing link between electoral clientelism and political budget cycles. *Economics and Sociology*, 17(3), 82-102. doi:10.14254/2071-789X.2024/17-3/5

PORK BARREL SPENDING: THE MISSING LINK BETWEEN ELECTORAL CLIENTELISM AND POLITICAL BUDGET CYCLES

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ABSTRACT. Pork barrel spending used in the political budget cycles literature via a preference approach is identified as the link tying clientelism to political budget cycles. This paper looks at the supply and demand sides of electoral clientelism using the case study of shipyards in Croatia. The strategic, symbolic and everyday importance of the shipbuilding industry in Croatia is evident to the general public, but even more so to politicians. This paper examines the supply side – whether incumbents increase central budget funds (state guarantees) in election years (pork barrel spending) toward shipyards in Pula, Rijeka, Kraljevica, Trogir and Split – and the demand side – whether voters reward incumbents who engage in these pork barrelling practices. The theoretical foundations of the paper are based on the literature on clientelism, political budget cycles and the political economy of fiscal policy. Panel data analysis conducted on a sample of 5 shipyards over the 2001-2022 period confirms the existence of pork barrelling but does not confirm voters' reactions to them. The empirical exercise identified the share of shipyard workers in the manufacturing industry at the county level as the main mechanism of electoral clientelism in Croatia.

Keywords: pork barrel spending, clientelism, political budget cycle, shipbuilding industry, Croatia

Received: July, 2023

1st Revision: May, 2024

Accepted: September, 2024

DOI: 10.14254/2071-
789X.2024/17-3/5

JEL Classification: D72, H81

“... productivity has its economic justification, why should I sweat, when I get less...”
Always the Same Story / Uvijek ista priča (Azra, 1981)

Introduction

Some forty years ago, in June 1981, the record label “Jugoton” released the second studio album by a rock group from Zagreb named Azra. On side D of the album there was a song titled “Always the Same Story,” whose sharp political and economic commentary on political suitability, the public, the media, bureaucracy, workers and productivity is still relevant today. A cynic may wonder what exactly has changed during these 40 years besides political, economic and state transformation. Substantial and respectable literature on the

political economy of transformation and on the consolidation of a model of capitalism in Croatia has emerged over the course of 30 years (Bićanić and Franičević, 2000, 2003; Franičević, 2002; Ivanković and Šonje, 2011; Mačkić, 2020). The results point to the unreformed microeconomic structure of the economy due to the sub-optimal incentive structure and overdependence on the political elites. The architecture of the new system resembles the famous Corbera dictum that everything must change so that everything can stay the same (Tomasi di Lampedusa, 1987).

The direct motivation for this paper is found in the strategic, symbolic and everyday importance of the shipbuilding industry in Croatia. The strong symbolic dimension is an important factor in relational clientelism in the literature, while strategic and everyday importance (in terms of local employment and export revenues) of the shipbuilding industry is further emphasised during election periods in electoral clientelism (Nichter, 2010). The shipbuilding industry holds economic and historical importance due to its regional concentration, both for incumbents and voters. Hence, for a rational and opportunistically motivated economic agent, this offers some “manoeuvring room”. The competition among politicians for power, guided by an invisible hand, will not ensure the stabilising function of the government in the economy as seen by Schumpeter (1950) in his alternative theory of democracy. Rather, the election process will tend to question the stabilising role of public finances and emphasise the effects of redistribution and allocation of resources, as noted by new political economists such as Drazen (2000).

The analysis of dynamics between economic agents, namely incumbents and voters, inevitably leads to the analysis of clientelism. This, in turn, provides a missing puzzle piece in the political economy model of capitalism enacted in Croatia, especially in relation to the established equilibrium in the political market. As in all agency models, this relationship features interesting characteristics, including an uneven distribution of power between principal and agent, asymmetric information and low transparency that inflates transaction costs, as well as the fact that the value of the exchange is *a priori* unknown to both parties.

The two research questions in this paper are straightforward. The first question is directed at confirming a positive correlation between state guarantees granted to shipyards and parliamentary elections. Specifically, the paper seeks to confirm the existence of the supply side of clientelism initiated by an opportunistically motivated incumbent. The second research question examines the demand side of clientelism, asking whether voters respond to the central government’s generosity aimed at the industrial champions in need, which are conveniently located in their local units. To the best of the authors’ knowledge, there are no existing empirical studies that examine the mechanism of clientelism and its long-term impact on shipyards’ dependence on government support. As a contribution of this study to the literature, the concept of pork barrelling is empirically tested in Croatia for the first time and the mechanism of pork barrelling is presented as a theoretical link between clientelism and political budget cycles theory. Thus, relational and electoral clientelism can be complements rather than substitutes when one considers the latest wave of political economy cycles literature.

The following sections provide the theoretical framework, the methodology and data, the empirical results, and the discussion and conclusions.

1. Literature review

1.1. Clientelism and pork barrelling

Merriam-Webster Dictionary (2020) describes clientelism as a mechanism “with the client giving political or financial support to a patron (as in the form of votes) in exchange for some special privilege or benefit”. Clientelism is defined as a form of special interest politics where goods and services are not public in the sense that exclusion of individuals who do not belong to a specific agency model is possible. Those individuals who are part of an agency model exchange political support for private goods at the expense of others. Clientelism is the first cornerstone upon which the theoretical foundation of this study is built.

Political science literature ties clientelism to the concepts of patronage (Piattoni, 2001), state capture (Grzymala-Busse, 2008 and Roniger, 2004), the proffering (both threats and inducements) of material goods (Stokes, 2011), exchange (Robinson and Verdier, 2013) and distribution (of benefits to certain groups) (Gans-Morse *et al*, 2014). Roniger (2004) identifies the following characteristics of clientelism: asymmetric relationships of exchange, power and distribution of resources, non-universalism, selectivity and the overall practice of “take there, give here”. Stubbs and Zrinščak (2012) add to the list hegemonic political practices and strategies, conditionality and a strong symbolical dimension, which accentuates the importance of collectivity.

The pioneering work on clientelism in Croatia was done by Cvijanović and Redžepagić (2011) and Stubbs and Zrinščak (2011), whose later work developed in the direction of clientelist welfare in Croatia (Stubbs and Zrinščak, 2012). In recent years, two books were published by a domestic (Kotarski and Radman, 2020) and an international (Kotarski and Petak, 2019) publisher, covering topics such as political economy, sectoral policies and the role of media and religion. Additionally, the work by Lažnjak and Švarc (2017) focuses on clientelistic capitalism, a term also used by Drahekoupil and Myant (2015) in their study of transition economies.

When focusing on economic agents, our premise regarding voter behaviour is based on their rationality and fiscal conservatism. Although Glaurdić (2018) and Mačkić (2021) report that voters in Croatia are fiscal liberals, this primarily applies to those who were more exposed to the war traumas of the 1990s and hence demand greater state interventions and a higher level of government consumption. Fortunately, this experience does not include the majority of Croatia’s citizens, so one can use fiscal conservatism of the voters as the starting premise. This has been reported in a series of papers examining national (Brender, 2003; Arvate *et al*, 2009; Drazen and Eslava, 2010) and international samples (Brender and Drazen, 2008). A direct consequence is not the disappearance of opportunistic motives of incumbents, but rather their focus on targeted spending, which is the area of inquiry in this paper.

Incumbents can be either opportunistically motivated (with budget items changing during election years) or partisan (with statistically significant changes in the budget structure during left- and right-wing governments). Political science literature frames this dilemma within the context of electoral clientelism, which directly links the distribution of benefits from incumbents to voters in exchange for political support (Nichter, 2010). In this sense, clientelism describes the development of practices that favour a certain group connected to the political elite (either through opportunistic or partisan ties). Within the new political economy literature, there are two strands that deal with these phenomena: political budget cycles and the political economy of fiscal policy.

The motivation of economic agents, unknown ownership rights over tax revenues, together with autonomy over their allocation (Winner and Hettich, 2006; Persson and

Tabellini, 2000), as well as agency problems (Von Hagen, 2006), all represent a basis for the development of common-pool resource externalities. This externality describes a situation in which a certain group of individuals (geographically and/or socially selected) internalises only a fraction of the marginal social costs of taxation and all of the benefits from public expenditures. It is a form of distribution that results in geographically and/or socially concentrated benefits while the costs are disbursed equally throughout the political community. Kessing *et al* (2007) classify common-pool resource externalities into three groups according to their source: public expenditures versus public revenues. In the context of public expenditures, where our interest lies, one branch of literature links them to the geographically dispersed interests of voters, transmitted through their direct representatives in the legislative assembly (Weingast *et al*, 1981). Sub-optimal political institutions systematically transform economic costs and benefits into political costs and benefits, thus defining the rationality of economic agents (both incumbents and voters) in that process. The end results are an ever-increasing size of the budget and clientelistic exchange (economic goods for political support). Von Hagen (2006) and Foremny (2011) provide empirical studies confirming the existence of common-pool resource externalities, as well as a theoretical formalisation of the problem within partial equilibrium models. Von Hagen (2006) takes a more general approach in which common-pool externalities result from any situation where incumbents can spend money from a centralised budget on targeted expenditures. Which group and/or region is more successful in increasing the amount of expenditures that can finance the production of local public goods depends on the political power and importance of the group/region in the election process, as well as the strength of the political and budget institutions (Persson and Tabellini, 2000).

The approach sketched by Van Hagen (2006) offers the most opportunities for examining electoral clientelism in the literature on the political economy of fiscal policy. It outlines a clear path for certain groups in society to gain privileged access to the central government budget in exchange for electoral support. Kasapović (2001) uses a similar analogy in more general terms, explaining the formation of numerous clientelistic groups in Croatia during the 1990s through their privileged access to public goods. A direct link to this line of thinking represents the third wave of political budget cycles literature, which is the second cornerstone of the theoretical foundations in this study.

This literature highlights that an opportunistic cycle is easier to confirm through manipulation of the composition of the budget, as compared to creating a budget deficit in the election year (Alesina, 1995), due to the premise of voter conservatism (Peltzman, 1992; Eslava, 2011). The model emphasises targeting expenditures from the central budget to selected geographical and/or social groups at the expense of other voters, under the assumption that voters are rational agents. In this sense, it addresses the supply side of clientelistic mechanisms developed within the new political economy. The novelty of this approach in the political budget cycles theory is its emphasis on the “preference approach” (Drazen and Eslava, 2010) as opposed to the “competence approach” (Rogoff and Siebert, 1988; Rogoff, 1990; Persson and Tabellini, 2000; Shi and Svensson, 2006). This allows for the existence of two types of political-economic equilibria due to asymmetric preferences of the incumbent.

In the first case, voters know the ideological position of their region/local unit. Based on that and by observing the spending choices of the incumbent they can calculate how much the incumbent favors them. In cases where the ideological stance of voters and the incumbent differs, as is the case in our study, the incumbent still has incentives to direct pork barrel spending to these local units. Namely, his opportunistic motives will prevail and he will try to secure swing votes during the election period. Another case arises when voters cannot

determine how much the incumbent prefers their local unit over others. The only signal they receive is the amount of funds allocated from the central budget, which serves as an indicator of their voting value to the incumbent. This suggests that rational, fiscally conservative voters should respond to pork barrel spending and will trade their political support for the allocation of targeted goods to their region.

Finally, the model contains one additional factor that increases the supply of pork barrelling and electoral clientelism in this context: the rents from holding office. The model reconciles Nichter's (2010) dichotomy between electoral and relational clientelism, since the incumbent is incentivized to reduce rents during the election period and transfer them to selected regions/local units. This ensures the incumbent's access to office rents after the elections and a continuation of relational clientelistic relationships. Given the current consensus in the literature that Croatia is characterised by relational clientelism (Petak and Kotarski, 2019), the application of Drazen and Eslava's (2006) model in this study contributes to the literature by providing a theoretical link between clientelism and the political budget cycles theory through the mechanism of pork barrelling. Consequently, relational and electoral clientelism can be seen as complementary rather than mutually exclusive.

1.2. Clientelism and shipbuilding in Croatia

Dependence on state aid is the main source of clientelistic relationships in the Croatian shipbuilding sector. This dependence dates back to the 1970s, during the period of socialism. At that time, European shipyards began losing the market battle to Asian competitors. However, since the shipyards were primarily located in large cities where they provided employment for local communities, incumbents could not overlook their significance (Bulum and Oršulić, 2010; Brunnbauer and Hodges, 2019). Moreover, in Croatia, shipyards operated within a distorted pricing system, which increased transaction costs and reduced business efficiency and profitability. In order to meet political requirements – ensuring employment in self-managed socialism was the ultimate goal – shipyards relied on cheap loans and export subsidies from the state. Similar practices were observed in other Eastern European EU member states, reflected in the large disparity in the level of state aid between old and new EU members, as measured by its share of GDP. The literature indicates that state aid levels were twice as high in old EU member states compared to new ones (Hölscher *et al*, 2014; Brunnbauer and Hodges, 2019).

Since Croatian shipyards were not privatized during the transition period, the state continued providing aid to sustain employment in an otherwise deindustrialised economy. These subsidies were not aimed at creating long-term sustainability; rather, they were given for political purposes, especially during election periods. This is evidenced by the fact that the whole sector remained technologically backward, with low productivity and an unfavorable skill structure among workers (Brunnbauer and Hodges, 2019; Hölscher *et al*, 2014; Bulum and Oršulić, 2010; Perić Hadžić and Karačić, 2013). Consequently, the state spent over EUR 4 billion between 1992 and 2017 just for the rehabilitation of shipyards, an average of about EUR 0.16 billion per year (Bajo *et al*, 2018). To address such imbalances, the EU demanded the privatization of all shipyards and a shift in state aid policy, with the primary goal of increasing efficiency and competitiveness. Thus, by 2013, all shipyards had been privatized (Bulum and Oršulić, 2010; Perić Hadžić and Karačić, 2013; Bajo *et al*, 2016). However, subsidies continued even after privatization, without improving the situation in shipyards, which experienced declines in both production and employment (Bajo *et al*, 2016). Based on these outcomes, it is perfectly legitimate to question whether state aid was more of a political tool than an economic one.

2. Data and methodological approach

The empirical investigation builds on the theoretical foundations of Drazen-Eslava's (2006) model of pork barrel cycles. The utility function of a voter in region h with ideological preferences π^j if the incumbent's ideological stance is $A \in \{L, R\}$ can be written as (Drazen and Eslava, 2006):

$$U_s^{h,j}(A) = \ln g_s^h(A) - (\pi^j - \pi^A)^2 \quad (1)$$

where $g_s^h(A)$ is a good provided by policymaker A to region h in period s . We can see that the voter's utility depends on the proximity between their own π^j and the incumbent's ideological stance π^A , as well as the present discounted value of utility (expected future values of g_s^h). On the other hand, the utility function of the incumbent P in period s is:

$$V_s^p = Z_s^p(g_s) - (\pi^j - \pi^A)^2 \quad (2)$$

where Z_s^p is equal to:

$$Z_s^p(g_s) = \sum_{h=1}^2 W_{p,s}^h \ln g_s^h \quad (3)$$

The key in both utility functions are the weights $W_{p,s}^h$ that politician P assigns to the utility from goods provided to voters in that region, that is, on $\ln g_s^h$. Due to the asymmetric preferences of incumbents, the voter's problem is to infer the unobserved weight $W_{p,s}^h$ from the incumbent's observable choice of g_t^h . Due to the persistence of the incumbent's preferences over time indicated by the choice of $W_{p,s}^h$, voters draw the following conclusion: if the value of goods provided in the election period (g_t^h) stems from the choice of weight in the election period ($W_{p,t}^h$), this must also hold for the choice of weight in the post-election period ($W_{p,t+1}^h$) and hence for the value of goods provided by the incumbent to the local unit in the post-election period (g_{t+1}^h).

In order to test our two hypothesis, (i) a positive correlation between election years and state guarantees granted to shipyards share obtained, and (ii) a positive correlation between the change in vote share for the ruling party between two electoral cycles and the average amount of state guarantees granted to shipyards between two electoral cycles, the study uses panel data analysis over strongly balanced panel data. A microeconomic analysis of static panel data distinguishes between two basic models based on the applied estimator: fixed (FE) and random effects (RE) (Cameron and Trivedi, 2010). Results of the Hausman (1978) test, shown in the Appendix in *Table 5* (Hausman test for Model 0 – vote share difference) and *Table 6* (Hausman test for Model 1 – guarantees) and both support the use of the RE model. The remaining diagnostic tests confirm that there is no cross-sectional dependence, autocorrelation, or heteroscedasticity in the model.

Table 1. Description of the variables and data sources

Variable	Description	Type of variable	Data Source
GUAR	The amount of guarantees provided by the central government (in billion HRK)	Dependent	Ministry of Finance (2023)
VOTE SHARE DIFFERENCE	The difference in vote share that the ruling party on a national level obtained in the observed city between the two election cycles.	Dependent	State Electoral Commission (2023)
GUAR_AVG	The average value of amount of guarantees provided by the central government during one electoral cycle (in billion HRK)	Endogenous	Ministry of Finance (2023)
P_ELEC	Dummy variable that takes the value of 1 in parliamentary election year and 0 otherwise	Predetermined	State Electoral Commission (2023)
EXP	Expenditure at the local level (in billion HRK)	Endogenous	Ministry of Finance (2023)
EMP_IN_MFG	Share of employment in manufacturing industry at county level (in percentage)	Endogenous	Croatian Bureau of Statistics (2023), FINA (2023) & Bajo et al. (2016)
PROFIT	The amount of profit of the shipyard (in billion HRK)	Endogenous	FINA (2023)
NOEDP	Dummy variable that takes the value of 1 when country is not in Excessive Deficit Procedure (EDP) and 0 otherwise	Endogenous	European Commission (2023)
NOEDP*P_ELEC	Interaction variable that takes the value of 1 when Croatia has parliamentary elections and is not in EDP and 0 otherwise	Endogenous	State Electoral Commission (2023) and European Commission (2023)

The static panel data model with a fixed effect estimator represents a simple linear model where individual-specific time-invariant parameters α_i are correlated with independent variables and can be written as:

$$Y_{it} = \alpha_i + \beta_1 X_{it1} + \beta_2 X_{it2} + \beta_K X_{itK} + \varepsilon_{i,t}; \quad (4)$$

$i = 1, \dots, N; t = 1, \dots, T$

where N is the number of observed units, T is the number of periods, α_i represents the constant term for each group, Y_{it} is the vector of dependent variables, X_{it} is the vector of independent variables and ε_{it} is the error term that is IID $(0, \sigma^2_\varepsilon)$.

To test the robustness of our results, the paper also employs a linear dynamic panel model based on the one step generalized method of moments (GMM) estimator (Arellano and Bond, 1991). This is a preferred empirical strategy whenever the dependent variables' current value depends on its previous values (Baltagi, 2008). Additionally, including one or more lags of the dependent variable significantly impacts the consistent assessment of other parameters in the model (Bond, 2002). A dynamic panel model with $t-1$ lags and K independent variables $x_{itk}, k=1, \dots, K$ can be written as:

$$Y_{i,t} = \mu + \gamma Y_{i,t-1} + \beta_1 X_{it1} + \beta_2 X_{it2} + \beta_K X_{itK} + \alpha_i + \varepsilon_{i,t}; \quad (5)$$

$i = 1, \dots, N; t = 1, \dots, T$

where N is the number of observed units, T is the number of periods, α_i represents random or fixed individual-specific effects, and ε_{it} are idiosyncratic shocks that are IID $(0, \sigma^2_\varepsilon)$.

If the model incorporates a lagged dependent variable, the OLS parameters are biased and inconsistent because of the correlation between the lagged dependent variable and the individual-specific effect. The solution, according to Arellano and Bond (1991), is to use the GMM estimator. Therefore, the first difference of the equation (4) is:

$$Y_{i,t} - Y_{i,t-1} = \mu(Y_{i,t-1} - Y_{i,t-2}) + \beta_1(X_{it1} - X_{i,t-1,1}) + \beta_2(X_{it2} - X_{i,t-1,2}) + \beta_K(X_{itK} - X_{i,t-1,K}) + (\varepsilon_{i,t} - \varepsilon_{i,t-1}); \quad (6)$$

$i = 1, \dots, N; t = 1, \dots, T$

where the unit-specific affects x_i are differenced on the model.

In order to correct for the endogeneity problem because $(\varepsilon_{it} - \varepsilon_{i,t-1})$ is correlated with $(y_{i,t-1} - y_{i,t-2})$, the Arellano-Bond GMM procedure uses lagged values of y_{it} as instruments to obtain consistent estimates. The validity of the instruments for parameters estimation is tested using the Sargan test, where the null hypothesis is that the instruments are coherent and valid.

The research sample includes shipyards in five local units in Croatia: Pula, Rijeka, Kraljevica, Trogir and Split during the period from 2001 to 2022. In Model 0, our dependent variable is the difference in vote share obtained by the ruling party between two electoral cycles at the observed local level (Split, Rijeka, Pula, Trogir and Kraljevica). In Models 1-4, the dependent variable is the amount of state guarantees granted by the central government budget to these shipyards. The source of these data as well as the information on the expenditure of the five local units where the shipyards are located is the Ministry of Finance database. Data on parliamentary elections were obtained from the State Electoral Commission. Croatia has pre-determined election dates, with five regular (2003, 2007, 2011, 2015, and 2020) and one snap (2016) parliamentary election during the observed period. Micro level data provided on the company level (number of employed workers and profit/loss accounts) were obtained from the FINA (Financial Agency) database. Data for the Excessive Deficit Procedure (EDP) was collected from the European Commission website and data on the share of local employment in the manufacturing industry at the county level was obtained from the Croatian Bureau of Statistics, FINA databases, and the paper by Bajo et al. (2018).

Table 2. Summary statistics

Variable		Mean	Std. Dev	Min	Max	Observations
GUAR	overall	0.341	0.581	0	3.612	N= 110
	between		0.194	0.073	0.544	n = 5
	within		0.554	-0.202	3.541	t = 22
P_ELEC	overall	0.273	0.447	0	1	N= 110
	between		0	0.273	0.273	n = 5
	within		0.447	0	1	t = 22
EXP	overall	0.313	0.311	0	0.925	N= 110
	between		0.302	0.147	0.640	n = 5
	within		0.153	-0.327	0.598	t = 22
EMP_IN_MFG	overall	0.132	0.091	0.002	0.381	N= 61
	between		0.079	0.029	0.229	n = 5
	within		0.065	-0.096	0.283	t = 12.2
PROFIT	overall	-0.002	0.628	-1.983	2.669	N= 79
	between		0.211	-0.351	0.217	n = 5
	within		0.601	-1.634	2.450	t = 15.8
NOEDP	overall	0.773	0.421	0	1	N= 110
	between		0	0.773	0.773	n = 5
	within		0.421	0	1	t = 22
NOEDP*P_ELEC	overall	0.182	0.387	0	1	N= 110

INTERDISCIPLINARY APPROACH TO ECONOMICS AND SOCIOLOGY

		between	0	0.182	0.182	n =	5
		within	0.387	0	1	t =	22
VOTE	SHARE	overall	-0.044	0.115	-0.276	0.214	N= 30
DIFFERENCE		between	0.021	-0.574	-0.007	n =	5
		within	0.113	-0.288	0.177	t =	6
GUAR_AVG		overall	0.347	0.483	0	1.812	N= 30
		between	0.201	0.068	0.543	n =	5
		within	0.447	-0.169	1.661	t =	6

Summary statistics presented in *Table 2* indicate that, during the observed period, shipyards, on average, ended their financial years with losses. During the same period, state guarantees ranged from zero to 3.61 billion HRK (EUR 0.48 billion), while the share of employment in the manufacturing industry at the county level within these shipyards averaged 13 percent. The difference in vote share during the six rounds of parliamentary elections slightly decreased. However, this must be considered alongside the overall downward trend in electoral participation in Croatia during the observed period. The average amount of state guarantees granted to shipyards during one electoral term ranged from zero to 1.81 billion HRK (EUR 0.24 billion).

3. Results

The empirical model was designed to capture pork barrelling through state guarantees and to assess whether there is a demand-side response to this clientelistic effort. To achieve this, the paper used control variables at both the individual shipyard level and the local budget level to capture any spill over effects at the local level. The results are presented in *Table 3*.

To ensure the robustness of the obtained results, we applied both static RE (Models 0 & 1) and dynamic (Models 2,3 & 4) panel data analysis. This approach replicates Brender and Drazen's (2005) methodology with a slight modification. Namely, this study applied it to the same sample, which enhances the robustness check, as they significantly modified their sample when applying the dynamic panel analysis.

While Model 0 did not yield statistically significant results for the difference in vote share, the positive sign was consistent with the literature. However, the results obtained in Models 1-4 confirm that the amount of state guarantees to shipyards increases in election years. In other words, incumbents allocate more central government funds to shipyards during election periods (0.34 in the static panel and 0.76 in the dynamic panel) and target these funds at local units. This supports the identification of an electoral clientelism mechanism, confirming our hypothesis. This places Croatia alongside countries like Argentina (Stokes 2005), Japan (Nyblade and Reed 2008), Mexico (Diaz-Cayeros *et al*, 2016), as well as Greece, Spain and Italy (Piatonni, 2001; Kitschelt and Wilkinson, 2007), where electoral clientelism was also observed.

Table 3. Static and panel data analysis

	Model 0	Model 1	Model 2	Model 3	Model 4
	Static panel	Static panel	Dynamic panel	Dynamic panel	Dynamic panel
	VOTESHAREDIF F	GUAR	GUAR	GUAR	GUAR
L.GUAR			0.13 (0.13)	0.06 (0.14)	0.02 (0.13)
GUAR_AVG	0.03 (0.04)				
P_ELEC		0.33 (0.15)**	0.31 (0.16)*	0.36 (0.16)**	0.76 (0.25)***
EXPENDITURE	0.04 (0.06)	0.14 (0.22)	0.14 (0.55)	-0.00 (0.55)	0.10 (0.52)
EMP_IN_MFG	-0.37 (0.22)	2.52 (0.77)***	2.73 (1.21)**	3.68 (1.32)***	4.03 (1.27)***
PROFIT	-0.06 (0.02)**	-0.21 (0.09)**	-0.21 (0.11)*	-0.27 (0.11)**	-0.26 (0.11)**
NOEDP				0.29 (0.18)*	0.54 (0.21)***
NOEDP*P_ELE C					-0.64 (0.31)**
_cons	-0.03 (0.04)	-0.12 (0.13)	-0.20 (0.27)	-0.45 (0.30)	-0.70 (0.31)**
chi2(4)		0.93	.	.	.
Prob>chi2		0.9209	.	.	.
Sargan test		.	46.0	45.0	45.7
chi2		.	15.92	19.26	25.67
zrank		.	57.00	57.00	57.00

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

In our demand side model (Model 0) the only statistically significant variable was profit, with a negative sign indicating a correlation between the financial results of shipyards and the success of the ruling party at the polls. Since the election results show that the ruling party at the national level, i.e. centre right party HDZ, did not have a stronghold in these local units during the majority of examined time period (State Electoral Commission, 2023) targeting swing voters can be an identified strategy as advocated by Lindbeck and Weibull (1987). Tselio *et al* (2016) report the same finding concerning pork barrelling and swing voters in Greece. While PASOK channels funds to regions with a higher percentage of socialist voters, Nea Dimokratia uses pork barrelling to attract new voters in swing regions. Moreover, Croatia shares the same characteristics as Greece with respect to high centralisation and strong clientelistic networks. However, unlike Tselio *et al* (2016) the focus of this study was on current expenditures rather than public investments. The same applies to the Drazen and Eslava (2010) study in Colombia with respect to the structure of expenditures. Our rationale is that current expenditures ensure a rise in disposable income in the same election year, which is a crucial determinant in the economic theory of voting (Downs, 1957). Due to the high symbolic and historical value of shipbuilding in Croatia, government guarantees are indeed highly visible. As a result, this type of spending is more important at

the local level than at the national level. This is the reason why this study, unlike Veiga (2012), finds evidence of pork barreling during parliamentary rather than local elections and why these expenditures increase during the election year, as shown in another country with strong clientelistic networks – Mexico (Gonzalez, 2002).

The study reports a positive and statistically significant correlation between the number of shipyard workers (as a share of workers in the manufacturing industry at the county level) and the amount of state guarantees (Models 1-4). This indicates not just the relevance of the industry for the local level and the incumbents' calculation of the importance of shipyards, but also empirically confirms the mechanism of electoral clientelism in Croatia via pork barreling. As Robinson and Verdier (2013) concluded, employment is a credible, selective and reversible method of redistribution that ties a voter to the political success of a particular politician. In the Croatian context, securing employment in coastal cities, which were deindustrialized after the transition process in the 1990s, via shipyards is a selective process founded on the asymmetric distribution of resources and power. The shipbuilding industry holds both strong and symbolic importance due to its regional concentration, which additionally secures political points for the incumbent with the general public.

Although statistically insignificant results also point to a negative correlation between the levels of shipyards' profit and state guarantees in Models 1-4. As discussed earlier, this is a rather usual environment for shipyards in Croatia since 1970s. Local budget expenditures are statistically insignificant in all models, which is not surprising given the high level of fiscal centralisation in Croatia (Ott *et al*, 2019). However, the study was also interested in the EU level. Namely, to test for the "EU effect" that could potentially limit the government's help to shipyards, the study included a dummy variable, NOEDP, that takes the value of 1 when Croatia is not under the Excessive Deficit Procedure (EDP). Since its EU accession, Croatia was under EDP from 2013 to 2017. Results (Models 3 and 4) confirm that without EU's constraints, guarantees are presents. In election years (Model 4), this effect is only slightly moderated. This indicates that the European Commission has influence over shipyard financing, as report in recent papers by Kamola-Cieślik (2021) and Daniel and Yildiran (2019).

Overall, regarding the methodology and the size of the estimated coefficients, the paper confirms that the size of coefficients differs when the model addresses dynamics, contrary to the conclusions reported by Phillips (2016). More importantly, the obtained results are robust and satisfy all diagnostic tests.

4. Discussion

Is there a positive correlation between state guarantees granted to shipyards and parliamentary elections in Croatia from 2001 to 2022? Are these funds fostering sustainable growth or creating dependence on government support? How do voters react to these guarantees? Do they reward the incumbent by increasing their share of votes in the 5 cities where shipyards are located? The paper studies these questions because the mechanisms and effects of clientelistic exchanges have not been examined in Croatia's strategic shipbuilding industry. To provide answers, five empirical models were estimated to validate both the supply and demand sides of clientelism.

The paper finds positive and statistically significant effects of issuing state guarantees to shipyards in the election years. These results align with the idea that pork barrelling is a theoretical link between clientelism and political budget cycles. When one looks at the long-term effects of these interventions, several points stand out. First, both major political parties (centre-left SDP and centre-right HDZ), which held power during the observed period, used

pork barrelling. Thus, the practice was symmetrical in nature, as both parties targeted all shipyards in all election periods. Turkovsky and Gaivoronsky (2017) report asymmetric application of clientelism in Russia (a country with relatively similar democratic experiences in terms of time spent in a new political regime). They identify the distribution of transfers following the ‘pork barrel’ logic aimed at rewarding previously loyal areas, especially the regions, which performed well in elections. At the same time, the federal government neither buys off nor punishes the regions most antagonistic to the regime. Furthermore, the literature (e.g. Daniel and Yildiran, 2019) states that all OECD and EU member countries have struggled to balance shipyard support with fiscal responsibility, without pointing to ideological differences between political parties. They used a variety of instruments and measures at their disposal, ranging from Export Credit Agencies, guarantees and working capital facilities extended by commercial banks for shipping projects (e.g. Caisse Française de Développement Industriel in France), to state guarantees, equity injections and export credits provided by the government.

Second, it is noticeable that production and employment levels, as well as revenues from sales and exports, decreased during the observed period. These developments are due to two parallel processes that simultaneously: (i) the weak condition of the shipbuilding market and (ii) the EU’s requirement that Croatia reduce the total production capacity of its shipyards and ultimately privatize them prior to its EU accession in 2013. In a nutshell, electoral clientelism ultimately created a dependency on government support, which is a universal diagnosis of the situation when compared to experiences in the industry elsewhere. Kamola-Ciešlik (2021) states that state aid granted to shipyards in Germany, France, and Italy has been necessary for their survival, although it did not prevent collective redundancies of shipyard workers. Subsidies are often tied to downsizing the shipyard workforce (e.g. MV Werften and the German Economic Stability Fund). Furthermore, Kamola-Ciešlik (2021: 109) points that “the examination of the research material concludes that shipyards in Europe would not be able to operate without state financial aid”. The dependency effect can be found even at the level of contemporary economies, with Hsu (2011) showing how, in a developmental state like Taiwan, populist strategies can reduce resource allocation to a pork barrel projects, thereby decreasing the competitive advantage of the economy. Due to the deindustrialization process in Croatia, the only remaining strong industrial sector with export potential is shipbuilding, which prevents us from identifying other sectors that could serve as case studies or benchmarks when analysing electoral clientelism.

Third, although the relative strength of shipbuilding decreased in a deindustrialized economy that relies on tourism, shipyard employment levels remain the primary mechanism of electoral clientelism. Other potential mechanisms were not considered for the following reasons. The Law on the Financing of Political Activities, Election Campaigning and Referendums provides a legal basis for financing parliamentary political parties in Croatia. Since the political demography of parties in Croatia has remained mostly stable, with only two new political parties emerging, (after the 2015 parliamentary elections, a new clerical-conservative party named MOST appeared on the national scene, and after the 2020 elections, a new right-wing nationalist party named Domovinski pokret appeared) one can deduce that the most important source of funds for political parties derives from the state. Under this law, every January the Parliamentary Committee on the Constitution, Standing Orders and Political System decides on the amount of money allocated quarterly to political parties (in 2024, this amount was equal to 62,441 EUR per member of parliament per year). At the same time, the law limits contributions by individuals to 4,000 EUR per year and companies to 26,667 EUR per year. Even before the FIMI Media scandal, in which former PM and HDZ chief Ivo Sanader was sentenced to seven years in prison for siphoning around 9.3 million

EUR from state-owned companies and institutions through the FIMI Media marketing agency into HDZ's slush funds from 2004 to 2009, funds obtained from non-governmental sources were not a dominant source. Thus, the mechanism of electoral clientelism is not found in campaign finance data but rather through vote share and the number of MPs from electoral units where shipyards are located. These results then translate into funds for political parties within Croatia's political context. Unfortunately, no research has been conducted in Croatia that examines voter behaviour surveys and/or media analysis related to state aid for shipyards. Daily newspapers (both regional – Novi list and Slobodna Dalmacija – as well as national – (Večernji list and Jutarnji list) have regularly reported on every state guarantee with a positive tone, since these guarantees ensure that wages will be paid in the short term and that ships in various stages of production will be completed and delivered to companies that commissioned them. Additionally, the paper did not identify any targeted social programs that were carried out during the period of analysis (2001-2022). Since the number of persons employed in the five largest Croatian shipyards decreased by 47% from 2010 to 2015 (Bajo et al, 2018), we believe this decline is a valid indicator of the main mechanism at play.

To further develop research on electoral clientelism via pork barrel spending in Croatia, the paper examined voters' reactions to state guarantees, conditional on the identified mechanism – shipyard employment. A positive correlation was found, but it was not statistically significant when examining the average of guarantees during the electoral cycle and the difference in vote share the ruling party obtained between two cycles. Thus, the demand side of electoral clientelism cannot be confirmed, unlike in the case of the telecommunication industry in Australia, where findings show trends of politically targeted funding followed by a vote swing in the next election (Alizadeh and Farid, 2017). One could mistakenly interpret this as evidence of prudent thinking on the part of Croatian voters. However, as Wantchekon (2003) concludes, clientelism describes anything that is not a public good or does not serve all citizens, and Croatia's democratic experience is still developing, so such a conclusion might be overreaching. It is also worth noting that Pellicer et al (2022) studied the demand side of clientelism and argued that modern studies should adopt a less stringent criterion for vote buying, as it is difficult to identify without direct monitoring. In their view, vote buying occurs when citizens receive goods just before or during an election, and the patron is able to monitor voter reciprocity. Thus, they interpret the criterion of conditionality more loosely. Conditionality is present when the main rationale for the actions between incumbents and voters is an expectation of reciprocity, even if this reciprocity is not strictly enforced.

5. Conclusion

The aim of this paper was to analyse the budgetary effects of clientelism through the mechanism of pork barrelling from the central government budget to five shipyards in Pula, Rijeka, Kraljevica, Trogir and Split during 2001-2022 period. The methodology used in the analysis consisted of two static panel models with a random effects estimator and three dynamic panel models with a GMM estimator. The focus on the budgetary effects of clientelism is important due to a lack of empirical research on the mechanisms of clientelism that result in particularism and inequality in the distribution of scarce public funds. Since the motivation behind clientelism and pork barrelling is electoral, the final outcome disrupts the stabilizing function of public finances.

The contribution of the paper to the literature is twofold. First, it provides a theoretical link between electoral clientelism and the political budget cycles theory through the mechanism of pork barrelling. Second, to the best of the authors' knowledge, the presented

empirical results are the first to pinpoint the share of shipyard workers in the manufacturing industry at the county level as the main mechanism of electoral clientelism in Croatia. The results indicate that there is a positive correlation between election periods and the distribution of funds from the central government budget (state guarantees) to the selected industry at the local level (shipyards), i.e. the existence of pork barrel cycles is confirmed in Croatia. This finding implies that there is a supply side effect of clientelism that aims at creating a special interest coalition, which links access to economic goods (central budget funds) with political loyalty. However, the demand side has not been confirmed since the difference in vote share is not statistically significant with the average amount of state guarantees that the ruling party has pork barrelled during its term. Nevertheless, the overreliance of the shipbuilding industry on the government since 1970s has thus extended for six decades. Moreover, this confirms the famous Corbera dictum that everything must change so that everything can stay the same. The long-term effects of pork barrelling created dependency on state aid and went hand-in-hand with a drop in shipyards' revenues from sales and exports. In the observed time period, shipyards also reduced both their employment and production levels.

The main limitations of this study are related to the availability of data concerning state guarantees prior to 2001, which would allow for a longer time series. Unfortunately, the data exists only in aggregated form, thus preventing panel data analysis. Future research in this area has significant potential. One research avenue should focus on non-election year trends in an attempt to reveal if pork barrelling is a continuous strategy or merely an opportunistic one. An interesting proposal is to also check whether and how budget (mis)allocations change across different election types (national and local) with respect to two important factors. First, varying political motivations on the side of incumbents and second, demand side responses from voters. In simple terms, does size matter when it comes to budget (mis)allocations? Another research avenue could examine other sources of pork barrelling present in contemporary Croatian society, which are aimed at strong interest groups shaping its development. These could include, but are not limited to, war veterans' pension benefits and certain concessions on the revenue side of the budget.

In any case, future research can focus more on relational clientelism, thereby contributing to the literature on the political economy of liberal democracy and capitalism as enacted in Croatia.

Acknowledgement

This research was funded by the Croatian Science Foundation (CSF) under project IP-2019-04-8360. The opinions, findings, conclusions and recommendations are those of the authors and do not necessarily reflect the views of the CSF.

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Appendix

Table 4. Correlation matrix

	GUAR	P_ELEC	EXP	EMP_IN_MFG	PROFIT	NOEDP	GUAR_AVG	VOTES_HAREDIFF
GUAR	1.0000							
P_ELEC	0.0851	1.0000						
EXP	0.3222	0.0752	1.0000					
EMP_IN_MFG	0.4253	0.1021	0.2907	1.0000				
PROFIT	-0.1703	0.1435	0.1101	0.0345	1.0000			
NOEDP	0.0575	-0.1550	-0.0443	-0.2830	0.0945	1.0000		
GUAR_AVG	0.7466	.	0.3640	0.5970	-0.0242	0.0975	1.0000	
VOTES_HAREDIFF	-0.1559	.	0.0151	-0.3175	-0.4113	-0.0448	0.0899	1.0000

Table 5. Hausman test for Model 0 (vote share)

Coefficients				
	(b) fixed	(B) .	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
GUAR	-0.074088	-0.048659	-0.025429	0.013390
EXP	0.444409	0.077007	0.367401	0.321459
EMP_IN_MFG	0.566478	0.063268	0.503209	0.343366
PROFIT	-0.105930	-0.078847	-0.027082	0.014790
b = consistent under Ho and Ha; obtained from xtreg				
B = inconsistent under Ha; efficient under Ho; obtained from xtreg				
Test:	Ho:	difference in coefficients not systematic		
	chi2(3)	4.01		
	Prob>chi2	0.2608		

Table 6. Hausman test for Model 1 (guarantees)

Coefficients				
	(b)	(B)	(b-B)	sqrt(diag(V _b -V _B))
	fixed	.	Difference	S.E.
P_ELEC	0.33963	0.332554	0.007077	0.021308
EXP	0.23563	0.135835	0.099801	0.447872
EMP_IN_MFG	3.08166	2.518056	0.563610	0.736215
PROFIT	-0.2304	-0.210524	-0.01987	0.035020
b = consistent under Ho and Ha; obtained from xtreg				
B = inconsistent under Ha; efficient under Ho; obtained from xtreg				
Test:	Ho:	difference in coefficients not systematic		
	chi2(3)	0.93		
	Prob>chi2	0.9209		