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ECONOMICS

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(This paper also appears as CAGE Discussion paper 572)

June 2021 No: 1362

Warwick Economics Research Papers

ISSN 2059-4283 (online)

ISSN 0083-7350 (print)

Reversal of Fortune for Political Incumbents: Evidence from Oil Shocks *

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June 2021

Abstract

Using a new dataset of 198 national elections across 48 democracies, this paper is the first to systematically examine the effects of oil price shocks on incumbents' political fortunes in developed oil-importing countries. We find that oil price increases systematically lower the odds of reelection for incumbents and increase the likelihood of changes in the ideology of the incoming government. These shocks are found to operate through lowering consumption growth.

Keywords: Elections, Incumbent, Oil Prices, Economic Shocks.

JEL Codes: D72; E21; P16; Q43.

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1 Introduction

The increase in gasoline prices stemming from the oil crisis overshadowed the United States presidential debate of October 1980. Ronald Reagan and then-President Jimmy Carter were going head to head in the election. Carter's loss that year coincided with a peak in oil prices. Other modern US presidential incumbents – for example, Presidents Ford and George H.W. Bush - also lost their reelection bids following oil price spikes. This anecdotal evidence points to a broader question about the role of exogenous shocks in determining electoral outcomes.

Our paper is the first effort to systematically examine the effect of oil price shocks on the reelection probability of political incumbents in *oil-importing* countries. This is the paper's first contribution. We use a novel dataset of 198 national elections in 48 mostly oil-importing democracies, which also includes polling data in the run-up to elections. The polling data allow us to explore the effect of exogenous shocks not only on the election outcome, but also on voting intentions in the months leading up to the vote. Depending on the political system, the dataset includes elections of the chief executive in parliamentary or presidential systems. As large oil imports leave a country vulnerable to changes in *international* crude oil prices, we rely on these prices as an exogenous source of *country-specific* variation in terms of trade. Specifically, we create a measure of 'oil price shock' by interacting the fluctuations in international oil prices (over which individual countries do not have explicit control) with the country-specific intensity of oil imports relative to GDP.

An oil price shock one year prior to an election is found to significantly reduce the likelihood of reelection for the incumbent party. Specifically, a 1% increase in our oil shock measure decreases the likelihood of incumbent re-election by over six percentage points. Furthermore, novel polling data confirm that these shocks operate by reducing the popularity of the sitting government. We show that both right-wing and left-wing incumbent parties are susceptible to crude oil price increases. We verify that the winning parties are more likely to belong to the opposite end of the political spectrum. In other words, following an oil price increase, a left-leaning incumbent party is more likely to be replaced by a right-leaning party and vice versa. The results remain robust to a variety of checks and alternative specifications. When we use changes in import commodity prices for 45 commodities instead of oil prices only, we find that an increase in the import prices one year prior to elections is significantly associated with a reduction in the odds of incumbent reelection. Our results also

survive when we control for voter turnout, pre-determined elections, other macro variables, and different lags for oil shocks.

Our paper investigates the mechanisms of the impact. This is its second contribution. First, we document that a country's media chatter about gasoline price increase picks up significantly in response to a positive oil price shocks, verifying that increases in international oil prices translate to domestic population's concerns and anxiety about gasoline price increases, especially in countries more dependent on oil imports. Second, since most countries in our sample are oil importers, an increase in crude oil prices would reduce the purchasing power of the population (Hamilton, 2003; Blanchard and Gali, 2009). Consistent with this logic, we discover that an increase in oil prices is found to reduce consumption growth. This is a potential mechanism which links oil price movements with voter behavior in elections. Interestingly, oil shocks do not impact output growth significantly as one would typically expect. Finally, media chatter about economic reforms rises in response to a positive oil price shocks, suggesting demand for changes in the economic, and potentially political, status quo.

This paper is related to several strands of the literature. First, it contributes directly to the debate between ideological versus economic factors of election outcomes. A large public choice literature suggests voters vote for the candidate that gives them the highest monetary return (Buchanan and Tullock, 1962). Downs (1957) and Hinich and Munger (1994) argue that in addition to self-interest, ideology, culture and moral codes are also a part of voters' decisions. Voters evaluate candidates according to how close they are to the voter's ideological ideal. Our findings suggest voters, on the aggregate, seem to vote without a clear ideological pattern. Economic factors, even exogenous, can sway their votes.

Second, our contributes to the literature on retrospective voting, which highlights cases in which incumbent governments are punished for events out of their control[1]. Many studies discuss the effects of natural disasters on local elections (see, for example, Gasper and Reeves, 2011; Healy and Malhotra, 2010; Cole et al., 2012; Wang and Berdiev, 2015; Achen and Bartels, 2017). A consistent finding from these studies is that incumbents' electoral fortunes suffer after natural disasters. The finding is intuitive as the impacts of natural disasters are generally dramatic and concentrated at the local level. In contrast, we show that relatively more subtle events, such as oil

[1]See Healy and Malhotra (2013) for a review of the retrospective voting literature.

price fluctuations, can also be powerful factors influencing political outcomes.

Finally, our paper is related to a rich literature on the political effects of commodity booms and busts in commodity exporters that operate via commodity price windfalls[2]. These studies can roughly be divided into those studying the effects of commodity price shocks on conflict versus those on elections or democratic transitions. The formers find a nuanced relationship between resource wealth and conflict, depending on the region, time period, and precise commodities considered[3]. The studies of commodity price shocks on election and democratic transitions also provide mixed conclusions[4]. Wolfers (2007) find that voters in US oil-producing states tend to re-elect incumbent governors when oil prices rise and vote them out when oil prices drop. Our paper is related but distinct from this literature. It examines the impact of oil price shocks on incumbent's political fortune in a set of predominantly developed oil-importing countries, as opposed to oil- or commodity-exporting states or countries. The impact is found to operate via changes in consumption growth.

The remainder of the paper is as follows. Section 2 presents the data. Section 3 shows the main results. Section 4 presents several robustness checks. Section 5 concludes.

2 Data

Our analysis draws on two main datasets. The first covers election polls and outcomes for 198 elections across 48 countries worldwide over the period 1980-2020. Only elections with available polling data are included. On average, each country has four elections. There are 146 parliamentary and 52 presidential elections. The list of countries and the number of elections in each country by year are presented in Figure A1 and Table A1. The polling data originate from multiple polling agencies for each country. Official election results are available from multiple sources. For each election, voting intentions by political party (i.e. polls) are gathered, alongside election outcomes[5]. It is important to consider the incumbent changes at the political party level rather than for individual politicians, since term limits could create me-

[2]See van der Ploeg (2011) for a excellent survey.

[3]See Bruckner and Ciccone (2010), Bazzi and Blattman (2014), Dube and Vargas (2013).

[4]See Bruckner et al. (2012), Caselli and Tesei (2016), Andersen and Aslaksen (2013), Burke and Leigh (2010).

[5]In some polls, respondents are allowed to answer election questions with "Don't Know" or "Not Sure". This will mechanically make voting intentions incompatible with the final election outcomes. In such cases, we drop the extraneous responses, and rescale the polls, considering only respondents who have selected a political party.

chanical turnover of individuals. Countries for which polling data are unavailable are not included in our dataset. In total, the dataset has over 12,009 polling observations, which are aggregated into 2,097 election-month polling observations for the incumbent party. Hence, on average, each election has about 11 election-month polling observations.

In addition to voter intentions, we include data on several additional election characteristics. First, an indicator variable is created to denote elections where the incumbent party remains in power following the election. This variable is at the party-level, and therefore term limits will not affect the outcome. For example, consider the 1988 US Presidential Election. George H.W. Bush was elected president, after Ronald Reagan served two terms. Since the Republican party remained in power, we treat that episode as the incumbent staying in power.

In cases of political coalitions, where multiple parties form the government, our measure of incumbency considers the political party of the chief executive. Second, we use data on the name of the political party incumbent, and the political party which wins the election. With that data, the political orientation of the incumbents and election winners are calculated based on party ideological orientation.

For the majority of elections and parties, data on left-right orientation are taken from the ParlGov Party Database (Döring and Manow, 2019). This database contains information for over 1,600 political parties in 37 democracies in the EU and OECD. For each party, a time-invariant score between 0 and 10 is provided, classifying their political position from left-wing to right-wing, respectively. This score, in turn, is based on data from Castles and Mair (1984), Huber and Inglehart (1995), Benoit and Laver (2006), and Bakker et al. (2015). For example, the UK Conservative Party has a score of 7.4, while the French Socialist Party has a score of 3.2. In our analysis, we do not use the continuous index, but rather split parties into left-wing and right-wing using the threshold value of 5. Overall, this dataset provides information for most countries in our sample. For countries outside the ParlGov sample (primarily South America), we also classify incumbents and election winners as left-wing or right-wing using various online sources. For example, Jair Bolsonaro, the winner of the 2018 Brazilian general election is classified as right-wing, based on his then-party, Partido Social Liberal. In sum, of the 198 elections in our main sample, there are 89 left-wing incumbents and 109 right-wing incumbents. Separately, there are 81 left-wing election winners, and 117 right-wing election winners.

Finally, voter turnout data are collected, as well as an indicator for whether voting is compulsory for a given election. Most of the data are from the IDEA Voter Turnout Database; any gaps are supplemented using online sources.

The main source of shock is based on changes in international oil prices, weighted by the average country-specific oil import values. International oil prices are obtained from the World Bank "Pink Sheet" data. These data contain real and nominal crude oil prices; for our main analysis, we use real oil prices. Data on the value of oil imports and GDP in US dollars are obtained from the IMF's World Economic Outlook. The country-year weights are constructed by taking three-year rolling averages of oil imports to GDP. Combining these weights with oil prices, our main index for country i and year t is constructed as:

$$\Delta \ln(Crude\ Oil\ Index)_{i,t} = \Delta[\ln(Crude\ Oil\ Price)_t \times \Omega_{i,Oil,t}]$$

The weights, $\Omega_{i,Oil,t}$,are calculated as:

$$\Omega_{i,Oil,t} = \frac{1}{3}\left[\left(\frac{Oil\ Import}{GDP}\right)_{t-1} + \left(\frac{Oil\ Import}{GDP}\right)_{t-2} + \left(\frac{Oil\ Import}{GDP}\right)_{t-3}\right]$$

The countries in our sample differ considerably in the amount of oil imported, and these weights capture the 'exposure' to fluctuations in international oil prices. For example, oil imports by Belgium and The Netherlands were around 10% of GDP, on average, across election years. In Colombia, however, this value was only 0.9% of GDP. Our main hypothesis is that price increases in countries which import more oil should have a stronger (negative) impact on electoral outcomes of incumbents.[6] Although the main results in this paper are based on oil shocks constructed with real oil prices and three-year rolling average weights, all results are also robust to the use of nominal prices, and five-year rolling weights.

The next data source is the Commodity Terms of Trade Database introduced in Gruss and Kebhaj (2019). These data consist of country-specific commodity price indices, based on a set of 45 individual commodities. The formula for the gross

[6]It should be noted that several countries in our sample, such as Colombia, export oil as well. However, the effects of international oil prices for exporters should work in the opposite direction, thereby attenuating out estimates toward zero. Therefore, we choose to keep these countries in the sample for the main results.

import price index is:

$$\Delta \ln(Import\ ComPI)_{i,t} = \sum_{j=1}^{J} \Delta P_{j,t} \Omega_{i,j,t}$$

In the above specification, $P_{j,t}$ refers to the logarithm of the real price of commodity j in time period t. $\Omega_{i,j,t}$ denote the commodity-country-specific weights by which the prices are weighted. The country specific weights are based on the ratio of gross imports to GDP. Rolling weights use a moving average of the last three time periods before t to construct $\Omega_{i,j,t}$. The commodity price indices are available at both an annual and monthly frequency over our sample period. We use the annual data for our main specification and turn to monthly data when considering the polling data. We show that our results are robust to using rolling as well as fixed weights.

Table 1 provides summary statistics for the key variables. The average oil shock in election years in real terms is -0.17%, and -0.15% in nominal terms. In approximately half of the elections (49.5%), the incumbent party remains in power.

3 Main Results

Our baseline specification is as follows:

$$\mathbb{1}(Incumbent\ Stays)_{c,y} = \alpha_c + \beta_y + \mu \Delta \ln(Crude\ Oil\ Index)_{c,y-1} + \epsilon_{c,y} \quad (1)$$

where c is for country, y is for year. $\mathbb{1}(Incumbent\ Stays)_{c,y}$ takes the value of 1 if the incumbent party wins the election. $\Delta \ln(Crude\ Oil\ Index)_{c,y-1}$ captures an oil price shock one year ago. Country fixed effect, α_c, capture time-invariant difference in political systems and institutional quality. The specification also includes year fixed effects, β_y, which capture global shocks over time, such as the worldwide downturn due to the Global Financial Crisis. Finally, the standard errors in our main tables are clustered at the country level, to address the correlation of oil price shocks within each country. In a robustness exercise, we show that the results are robust to multi-way clustering across countries and years (Table A2).

We also examine the effect of changes in import commodity prices on election outcomes:

$$\mathbb{1}(Incumbent\ Stays)_{c,y} = \alpha_c + \beta_y + \mu \Delta \ln(Import\ ComPI)_{c,y-1} + \epsilon_{c,y} \quad (2)$$

where $\Delta \ln(Import\ ComPI)_{c,y-1}$ captures the lagged change in the import commodity price index. Finally, using the polling data, we test the specification:

$$Voting\ Intention\ Incumbent_{i,m} = \alpha_i + \beta_m + \mu \Delta \ln(Crude\ Oil\ Index)_{i,m-12} + \epsilon_{i,m} \quad (3)$$

where i denotes the election and m denotes the month. $Voting\ Intention\ Incumbent_{i,m}$ captures the voting intentions for the incumbent party in a given month. $\Delta \ln(Crude\ Oil\ Index)_{i,m-12}$ captures the country-specific change in the crude oil price index with a 12-month lag. Lastly, α_i and β_m are election and month fixed effects.

Table 2 presents our main results on the impacts of oil price shocks on electoral turnover. Column 1 shows that an increase in crude oil prices in the previous year systematically and negatively affects the reelection chance of the incumbent party. A 1% increase in crude oil index reduces the reelection chance by 6.6 percentage points. This is equivalent to a 13% decrease in the likelihood of incumbent re-election from the mean. To address the concern of potential term limits for individual politicians, incumbency is defined at the party-level, as aforementioned. Hence, an incumbent is considered winning the reelection even if another member of the party wins the election.

Figure 1 shows the binned scatter plot of the result from column (1) of Table 2. The figure groups observations into 30 equal-sized bins along the horizontal axis. Thus, each point represents seven election results, on average. Overall, Figure 1 shows that the relationship between oil price shocks and election turnover is negative, robust, and not driven by outliers in our data.

As a concrete example, consider the 2011 parliamentary election in Croatia. In that election, the incumbent Croatian Democratic Union (Prime Minister Jadranka Kosor) faced the Social Democratic Party of Croatia (with leader Zoran Milanović). In our data, the corresponding real oil shock is positive and above average, signifying a price increase for Croatia (an oil importer). Indeed, this election resulted in a significant loss for the incumbent party, and an absolute majority for the opposition. Of course, we do not claim that the outcome was uniquely determined by the oil price shock. However, we document that these exogenous shocks are an important factor influencing voter behavior around elections.

In Column 2 of Table 2, we test whether the baseline result is driven by the political orientation of the incumbent. We define two types of political orientation: left wing (LW) and right-wing (RW). It is noteworthy that the interaction terms between

oil shock and the political orientation of incumbents are both statistically insignificant. This result implies that, irrespective of their political orientation, incumbents are vulnerable to oil shocks.

Column 3 shows that the results are also robust when we control for changes in copper prices, a proxy for global demand shocks (see Hamilton, 2015). In Column 4, we show that oil shocks still sway electoral outcomes even when other macro variables at current year and one-year prior are controlled for, namely GDP growth, inflation and unemployment rate.

When controlling for voter turnout and compulsory voting in elections, the baseline results remain qualitatively and quantitatively similar (Column 5 of Table 2). Importantly, this specification also controls for whether the election is a snap election or predetermined. This test addresses the concern that the timing of an election could be influenced by oil price movements.

The results are robust to dropping large countries that could arguably influence oil prices (Column 6). In particularly, this specification drops all election from the US, Germany, France, and the UK. The results remain essentially unchanged compared to baseline. An additional concern may be that the results are driven by the mass of elections over the past decade, and in particular following the Global Financial Crisis (GFC). In Column 7, we drop all elections after 2007 and test our main specification again. Even though this reduces our sample, the results remain robust and highly significant. The main findings are not driven by excessive volatility in international oil prices over the last decade. Nevertheless, we also find a significant negative relationship between oil price shocks and incumbency in the years since the GFC (available on request).

The main result is also robust and quantitatively similar to using the lagged change of the import commodity index, consisting of 45 import commodity prices (Column 8). A 1% increase in import commodity index in the previous year is associated with about 12 percentage point increase in the likelihood that the incumbent party will lose the election.

Finally, in Column 9 we show that a crude oil shock is not only more likely to cause electoral turnover, but it may also cause a reversal in political leaning. In particular, we use an indicator for different types of ideological transitions. A transition is defined as any instance where the incumbent and election winners have a different ideology (i.e. left-wing versus right-wing). The result in Column 9 shows that oil

shocks are associated with a reversal in political orientation. A 1% increase in oil price shock leads to a 6.7 percentage points increase in the likelihood that the winning party belongs to the other end of the political spectrum. In other words, following an oil price increase, a left-leaning incumbent party is more likely to be replaced by a right-leaning party and vice versa. It is as if voters punish the incumbent party and would like a wholesale change in political orientations.

Oil price shocks reduce consumption growth, suggesting one potential mechanism through which oil shocks affect voting behavior. Columns (1)-(2) in Table 3 shows the regression results using data on per capita final consumption by household and non-profit institutions serving households. The results suggest that oil shocks in the previous period have a significant negative effect on lagged private consumption growth. This reduction could provide an explanation for why voters react so strongly against incumbents in upcoming elections. Meanwhile, Columns (3)-(4) show that there is no corresponding effect of oil shocks on lagged GDP growth, suggesting that the main mechanism works through the consumption channel, not output.

Finally, we highlight the impact of oil price shocks on the domestic political landscape using two media-based measures. The first is an index of discussions on economic reforms, taken from Arezki et al. (2020). For each country-year, this index measures the percentage of news media that discusses economic reforms[7]. The second is a measure of 'gas price' discussions, which captures the proportion of media coverage focused on gas price *increases*. Details on the construction of this index are in Appendix B. Table 4 presents the results on the effects of our oil price shock measure on the two media indices. In doing so, we test two hypotheses: first, that oil price increases are positively associated with gas price discussions. This is expected to be the case if oil shocks truly capture changing domestic conditions. The second hypothesis is that oil price shocks lead to increased discussions (and demands for) economic reform. Since our main results highlight strong effects of oil shocks on electoral outcomes, it is possible that a desire for change is a mechanism galvanizing the electorate. Indeed, the results in Table 4 confirm both these hypotheses, both in a broader sample covering 2000-2019 and when focusing exclusively on the election years. The results in Column 1 suggest a 1% increase in our oil price shock measure causes a 0.008 percentage point increase in gas price chatter, or a 13% increase from the mean, suggesting that international oil price increases stir domestic population's

[7] A newspaper article is defined as discussing economic reforms when it contains the keywords ["economic" or "economy"] AND ["reform" or "reforms"]

concerns and anxiety about gasoline price increases. The results in Column 2 suggest a 1% increase the oil price shock measure causes 0.08 percentage point increase in economic reform chatter, suggesting a demand for economic change. In addition, Columns (3) and (4) suggest that the effects are even stronger quantitatively before election years, suggesting a higher sensitivity to oil price shocks. Ultimately, these results show that the oil price shocks affect the population's economic concerns and demand for economic reforms.

4 Robustness Checks

Our baseline results survive a number of additional robustness checks. First, a key contribution of this dataset is polling data leading up to every election. In Table A3 we test for the effects of oil shocks on the voting intention for the incumbent party in the polls, as outlined in Equation 3. For example, Column (1) shows that for each election, a 1% increase in the crude oil index 12 months ago reduces voter's intention to reelect incumbent party by 0.4 percentage points. The effect is not large in magnitude, but in close elections, even small effects may be important on the margin. Thus, the fluctuations in oil prices shift the political fortunes of the incumbent party leading up to the vote, consistent with our main results.

Table A4 shows that when the contemporaneous effect and annual lags of oil shocks are used, the one-year lag is the only one that causes significant electoral turnover. Table A5 confirms this finding. It further suggests that when different quarterly lags are used (up to right quarters before the elections), only oil shocks four and five quarters before elections are statistically significantly correlated with the change of power. This period may best coincide with the electoral cycle, though further research is needed to ascertain this hypothesis. The magnitude is also much larger than that of the annual lags. For example, a 1% increase in crude oil index a year (four quarters) before an election reduces the reelection chance by 26 percentage points.

In Table A6, we test for non-linear effects of oil shocks, as it is possible that larger oil shocks could have disproportionately larger impacts on electoral outcomes. However, the quadratic term of oil shocks is not significant, suggesting an absence of non-linear effects.

Finally, a potential concern for our analysis would be if the results are driven by countries which import small amounts of crude oil. To address this, we consider

the weights, $\Omega_{i,Oil,t}$, used to construct our oil price index. These weights capture the moving average oil import value to GDP ratios in the three years leading up to each election. Figure A2 presents a density plot of these values for our election sample. The values range from 0.2% to 12.5%, with a median of 2.8%. In Table A7 we test the robustness of our main results to dropping election with small oil import/GDP values. Columns 2 and 3 show that dropping elections with values below the 5th and 10th percentile, respectively, do not affect our results. Even after dropping elections below the 25th percentile (Column 4), the results remain significant, although the magnitude is slightly lower. We interpret this as evidence that our results are not spuriously driven by small oil importers.

5 Conclusion

To our knowledge, this paper is the first to analyze the effect of oil price shocks on electoral outcomes in a sample of oil-importing countries. The results show that an oil price increase systematically lowers the odds of reelection for incumbents while increasing the likelihood of an ideology reversal. These shocks are associated with worsening polling performance for incumbents in the run-up to elections. We provide evidence that oil price increases lead to lower consumption growth, and suggest that this may be the mechanism through which these shocks affect voter behavior.

The systematic nature of the bias against the incumbent irrespective of political leaning suggests a rejection of the often-argued voting patterns on the basis of ideology. Our results are consistent with the research on voter retrospection, and contribute to an extensive literature on the economic and political effects of commodity price fluctuations.

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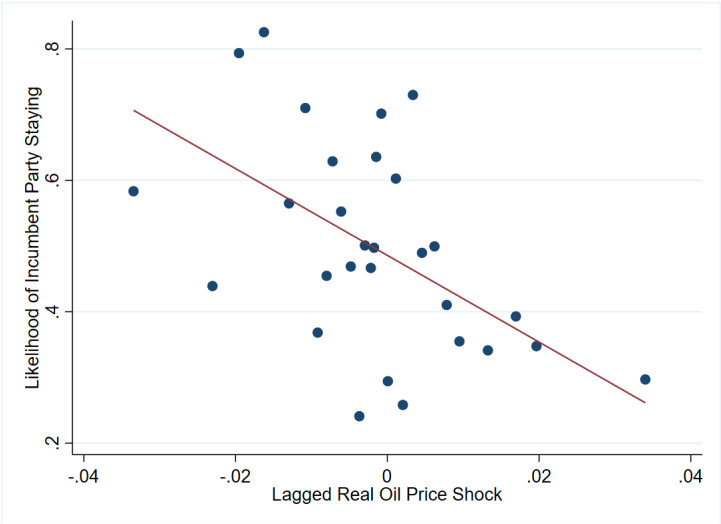
6 Figures

Figure 1: Partial Correlation Scatterplot



Notes: Binned scatterplot with 30 equal-sized bins. The full sample contains 198 elections. Year and Country fixed effects are residualized to produce the figure.

7 Tables

Table 1: Summary Statistics for Main Variables

Variable	Count	Mean	Standard Deviation	25 Pctile	50 Pctile	75 Pctile
Real Oil Shock	190	-.0017117	.0257387	-.015572	.0012883	.010391
Nominal Oil Shock	190	-.0014966	.0267038	-.0146259	.0015328	.0123906
$\Delta \ln(\text{Import ComPI})_{t-1}$	193	-.0009558	.0149154	-.0053587	.0008206	.0077343
Indicator: Incumbent Stays	198	.4949495	.5012419	0	0	1

Table 2: Changes in Crude Oil Prices and Electoral Turnover

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	=1 Incumbent Stays								=1 Ideology Transition
Oil Shock Specification:	3-Year MA								3-Year MA
Real Oil Shock$_{t-1}$	-6.601***	-9.471***	-3.679***	-5.412**	-6.554***	-6.836**	-26.381**		6.747***
	(2.340)	(2.886)	(1.208)	(2.663)	(2.315)	(2.773)	(9.637)		(2.258)
Δ ln(Import ComPI)$_{t-1}$								-12.160**	
								(5.703)	
=1 LW Incumbent		-0.073							
		(0.059)							
Real Oil Shock$_{t-1}$ X LW Incumbent		5.923							
		(3.582)							
Δ ln(Copper Price)			-0.376*						
			(0.188)						
GDP Growth$_t$				0.007					
				(0.030)					
GDP Growth$_{t-1}$				0.037**					
				(0.018)					
Inflation$_t$				0.005					
				(0.021)					
Inflation$_{t-1}$				-0.021					
				(0.034)					
Δ(Unemployment Rate)$_t$				0.008					
				(0.062)					
Δ(Unemployment Rate)$_{t-1}$				-0.043					
				(0.057)					
Voter Turnout					-0.007				
					(0.008)				
=1 Compulsory Voting Election					0.174				
					(0.382)				
=1 Snap Election					-0.043				
					(0.093)				
Year FE	✓	✓		✓	✓	✓	✓	✓	✓
Country FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
R^2	0.439	0.459	0.344	0.486	0.443	0.463	0.692	0.429	0.435
Mean Dependent Variable	0.494	0.494	0.500	0.497	0.494	0.470	0.552	0.492	0.386
Number of Elections	176	176	186	173	176	151	29	181	176
Number of Countries	45	45	45	44	45	41	10	45	45

Notes: In all columns, oil import exposure is the 3-year rolling average, from t-3 to t-1, of oil imports as a share of GDP. Standard errors are clustered at the country level and reported in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 3: Oil Price Shocks, Consumption Growth, GDP Growth

	(1)	(2)	(3)	(4)
Dependent variable:	Δ ln(Final Consumption)$_{t-1}$		GDP Growth(% Change)$_{t-1}$	
Oil Shock Specification:	3-Year MA		3-Year MA	
Real Oil Shock$_{t-1}$	-0.352*		1.530	
	(0.178)		(15.237)	
Real Oil Shock$_{t-2}$	0.395*		-6.122	
	(0.212)		(19.523)	
Real Oil Shock$_{t-3}$	-0.107		-3.204	
	(0.232)		(17.927)	
Nominal Oil Shock$_{t-1}$		-0.315*		5.470
		(0.160)		(15.023)
Nominal Oil Shock$_{t-2}$		0.375*		-8.142
		(0.197)		(19.102)
Nominal Oil Shock$_{t-3}$		-0.123		-4.956
		(0.216)		(17.623)
Year FE	✓	✓	✓	✓
Country FE	✓	✓	✓	✓
R2	0.526	0.525	0.585	0.586
Mean Dependent Variable	0.017	0.017	2.669	2.669
Number of Elections	172	172	175	175
Number of Countries	44	44	45	45

Notes: The dependent variable in Columns (1)-(2) is log change in Households and NPISHs Final consumption expenditure per capita (constant 2010 USD). In all columns, oil import exposure is the 3-year rolling average, from t-3 to t-1, of oil imports as a share of GDP. Standard errors are clustered at the country level and reported in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 4: Oil Price Shocks and Media Chatter

Dependent variable:	(1) Gas Price Chatter$_t$	(2) Reform Chatter$_t$	(3) Gas Price Chatter$_{t-1}$	(4) Reform Chatter$_{t-1}$
Sample:	Full Sample		Election Years	
Real Oil Shock$_t$	0.858**	8.029***		
	(0.353)	(2.475)		
Real Oil Shock$_{t-1}$			1.759**	17.260***
			(0.679)	(4.832)
Year FE	✓	✓	✓	✓
Country FE	✓	✓	✓	✓
R2	0.408	0.493	0.627	0.722
Mean of Dependent Variable	0.060	1.014	0.050	0.869
Number of Observations	943	893	166	168
Number of Countries	49	48	45	45

Notes: The dependent variable in Columns (1) and (3) is a normalized measure of media discussions about gas price increases. The dependent variable in Columns (2) and (4) is a normalized measure of media discussions of economic reforms, based on Arezki et al. (2020). Both measures relate to articles in English over the 2000-2019 period. The measure of real oil shocks is based on fluctuations in international oil prices and a country-specific measure of oil imports relative to GDP. Standard errors are clustered at the country level and reported in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Online Appendix

Reversal of Fortune for Political Incumbents: Evidence from Oil Shocks

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June 2021

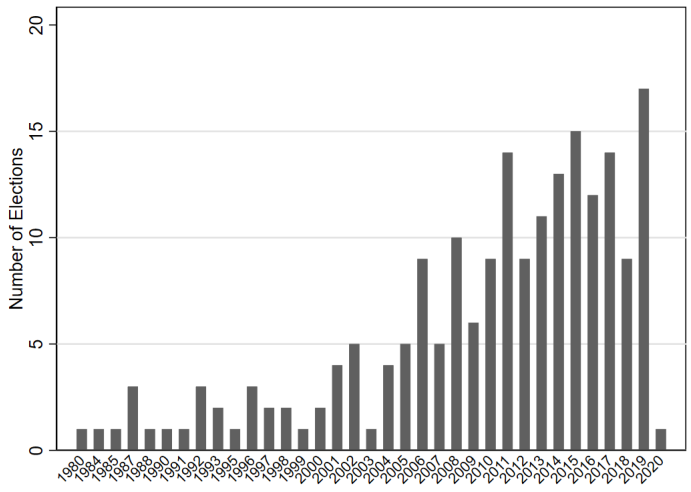
Our analysis draws on two main datasets. The first covers election polls and outcomes for 198 elections across 48 countries worldwide over the period 1980-2020. On average, each country has four election cycles. There are 146 parliamentary and 52 presidential elections. The list of countries and the number of elections in each country by year are presented in the Table A1 and Figure A1.

Table 1 provides summary statistics for the key variables. For an average election, the average oil shock in real terms is -0.17%, and -0.15% in nominal terms. In 49.5% of the elections, the incumbent party wins the election.

Our baseline results survive a battery of other robustness checks. First, the polling data analyses yield similar results (Table A3). For example, Column (1) shows that for each election, a 1% increase in the crude oil index 12 months ago reduces a voter's intention to reelect the incumbent party by 0.4 percentage points. Thus, the fluctuations in oil prices shift the political fortunes of the incumbent party.

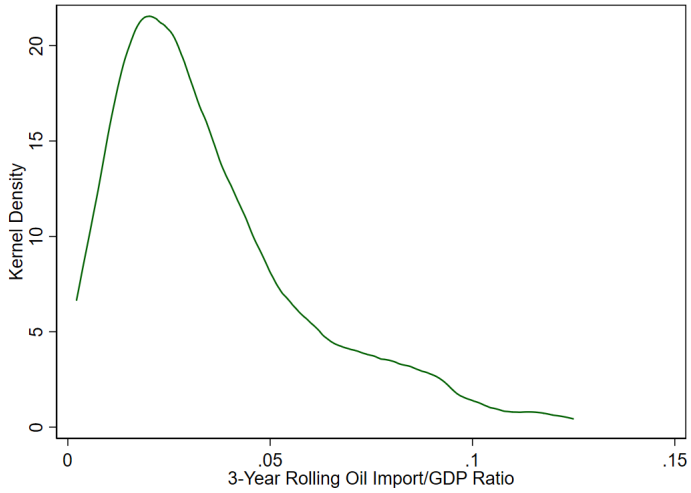
Table A6 tests for non-linear effects of oil shocks, as it is possible that larger oil shocks could have disproportionately larger impacts on electoral outcomes. However, the quadratic term of oil shocks is not significant, suggesting an absence of non-linear effects.

Figure A1: Number of Elections by Year



Notes: This figure presents the number of elections in year of the sample.

Figure A2: Distribution of Oil Import/GDP Ratios



Notes: This figure presents a kernel density plot of the three-year moving average oil import to GDP ratios for our sample of election years. These values are used in the construction of our oil price index.

A Tables

Table A1: Election and Polling Data by Country

Country	Number of Elections
argentina	4
australia	12
austria	5
belgium	1
brazil	2
bulgaria	4
canada	5
chile	3
colombia	4
croatia	3
cyprus	3
czech republic	8
denmark	3
ecuador	4
estonia	2
finland	3
france	4
germany	4
greece	5
hungary	4
iceland	4
india	2
ireland	2
italy	3
japan	3
korea, republic of	2
malta	2
mexico	1
netherlands	2
new zealand	6
paraguay	2
peru	4
philippines	3
poland	8
portugal	11
romania	3
serbia	3
slovakia	3
slovenia	4
south africa	2
spain	8
sweden	4
switzerland	3
taiwan, province of china	4
turkey	5
united kingdom	9
united states	10
uruguay	2
Total	198

Table A2: Oil Price Shocks and Alternative Standard Error Clustering

	(1)	(2)	(3)	(4)
Dependent variable:	=1 Incumbent Stays			
Oil Shock Specification:	3-Year MA		5-Year MA	
Real Oil Shock$_{t-1}$	-6.601***		-8.697**	
	(2.219)		(3.082)	
Nominal Oil Shock$_{t-1}$		-6.140***		-7.940**
		(2.106)		(2.986)
Country FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
R2	0.439	0.438	0.431	0.429
Mean Dependent Variable	0.494	0.494	0.497	0.497
Number of Elections	176	176	175	175
Number of Countries	45	45	45	45

Notes: Standard errors are clustered at the country and year level and reported in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A3: Oil Price Shocks and Polling Data

	(1)	(2)	(3)	(4)
Dependent variable:	Voting Intention for Incumbent			
Oil Shock Specification:	3-Year MA		5-Year MA	
Oil Shock$_{t-12}$	-43.248**	-15.925	-62.094*	-32.679**
	(21.601)	(9.875)	(35.340)	(15.546)
Month FE	✓	✓	✓	✓
Country FE	✓		✓	
Election FE		✓		✓
R2	0.701	0.934	0.702	0.933
Mean Dependent Variable	33.714	33.714	33.647	33.647
Observations	2,221	2,221	2,199	2,199
Number of Elections	179	179	177	177

Notes: Voting intention captures the percentage of voters intending to vote for the incumbent party. In columns (1) and (2), oil import exposure is the 3-year rolling average, from t-3 to t-1, of oil imports as a share of GDP. In columns (3) and (4), oil import exposure is the 5-year rolling average, from t-5 to t-1, of oil imports as a share of GDP. The poll sample includes the actual elections as well. Standard errors are clustered at the country level and reported in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A4: Oil Price Shocks with Annual Lags

	(1)	(2)	(3)	(4)
Dependent variable:	=1 Incumbent Stays			
Oil Shock Specification:	Real Shock			
Oil Shock$_t$	-2.710	0.490	0.431	-2.549
	(2.002)	(2.391)	(2.529)	(3.476)
Oil Shock$_{t-1}$		-6.866**	-6.714*	-6.662*
		(2.677)	(3.510)	(3.398)
Oil Shock$_{t-2}$			-0.195	3.636
			(3.387)	(4.868)
Oil Shock$_{t-3}$				-6.442
				(5.045)
Country FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
R2	0.413	0.440	0.440	0.451
Mean Dependent Variable	0.494	0.494	0.494	0.497
Number of Elections	176	176	176	175
Number of Countries	45	45	45	45

Notes: Oil shocks calculated using international crude oil prices weighted by 3-year rolling windows of oil import to GDP value for each country. Annual lags are included. For example, *Oil Shock*$_{t-1}$ is the Crude Oil Shock one year before the election. Standard errors are clustered at the country level and reported in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A5: Oil Price Shocks with Quarterly Lags

	(1)	(2)
Dependent variable:	=1 Incumbent Stays	
Oil Shock Specification:	3-Year MA	5-Year MA
Oil Shock$_t$	-0.076	-3.689
	(7.868)	(7.683)
Oil Shock$_{t-1}$	-0.363	-1.537
	(7.436)	(12.977)
Oil Shock$_{t-2}$	14.077	11.928
	(8.451)	(8.307)
Oil Shock$_{t-3}$	-3.118	-1.777
	(4.937)	(8.478)
Oil Shock$_{t-4}$	-26.788***	-19.942**
	(8.949)	(9.145)
Oil Shock$_{t-5}$	-11.004***	-2.014
	(4.030)	(7.609)
Oil Shock$_{t-6}$	-3.108	7.257
	(3.622)	(5.349)
Oil Shock$_{t-7}$	3.129	1.838
	(6.407)	(6.890)
Oil Shock$_{t-8}$	4.047	5.388
	(4.663)	(7.150)
Country FE	✓	✓
Quarter FE	✓	✓
R2	0.730	0.697
Mean Dependent Variable	0.510	0.503
Observations	151	149
Number of Elections	43	43

Notes: Oil shocks calculated using international crude oil prices weighted by 3-year rolling windows of oil import to GDP value for each country. Quarterly lags are included. For example, *Oil Shock*$_{t-1}$ is Crude Oil Shocks one quarter before the election. Standard errors are clustered at the country level and reported in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A6: Non-Linear Effects of Oil Price Shocks

	(1)	(2)	(3)	(4)
Dependent variable:	=1 Incumbent Stays			
Oil Shock Specification:	3-Year MA		5-Year MA	
Real Oil Shock$_{t-1}$	-5.522**		-8.440**	
	(2.546)		(3.973)	
Real Oil Shock$^2_{t-1}$	52.444		95.107	
	(31.826)		(129.298)	
Nominal Oil Shock$_{t-1}$		-5.147**		-7.828*
		(2.506)		(4.070)
Nominal Oil Shock$^2_{t-1}$		46.199		110.104
		(27.699)		(112.249)
Year FE	✓	✓	✓	✓
Country FE	✓	✓	✓	✓
R2	0.446	0.444	0.433	0.433
Mean Dependent Variable	0.494	0.494	0.497	0.497
Number of Elections	176	176	175	175
Number of Countries	45	45	45	45

Notes: Standard errors are clustered at the country level and reported in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A7: Changes in Crude Oil Prices and Electoral Turnover - Dropping Small Oil Import/GDP Values

	(1)	(2)	(3)	(4)
Dependent variable:	=1 Incumbent Stays			
Oil Shock Specification:	3-Year MA			
Oil Import/GDP Value:	Full Sample	>5th Pct	>10th pct	>25th pct
Real Oil Shock$_{t-1}$	-6.601***	-6.790***	-6.166**	-4.709*
	(2.340)	(2.323)	(2.395)	(2.746)
Country FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
R2	0.439	0.450	0.458	0.448
Mean Dependent Variable	0.494	0.497	0.494	0.489
Number of Elections	176	169	160	135
Number of Countries	45	45	43	40

Notes: The table presents the results from changes in crude oil price on incumbent re-election by progressively dropping elections with very small oil import/GDP values. These values are based on three-year moving averages leading up to the election year. Column 1 presents our baseline estimates. Columns 2-4 present the results with oil import/GDP values above the 5th, 10th, and 25th percentiles, respectively. Standard errors are clustered at the country level and reported in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

B Gas Price Chatter Index

Table A8: Gas Price Chatter Keywords

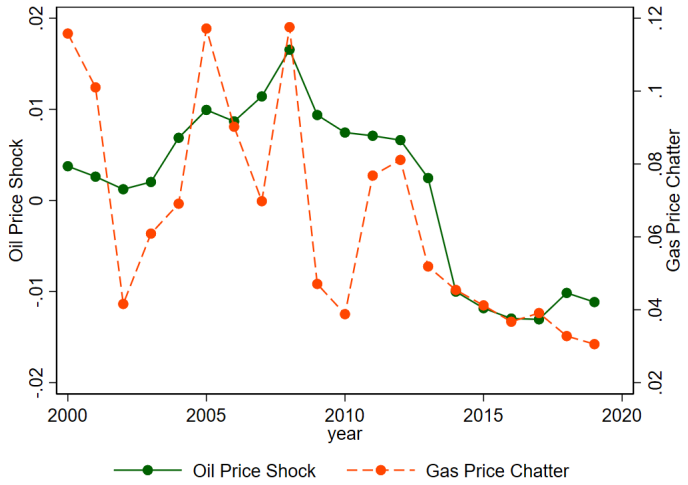
Category 1	**Category 2**	**Category 3**
gas	price	rise
gasoline	prices	rose
		rises
		increase
		increases
		increased
		increasing
		hike
		hikes

The gas price chatter index is constructed using a keyword search of newspaper media using the Factiva database. For each country in our sample and each year in the period 2000-2019, we count the number of articles containing at least one term from each of the three categories in Table A8, and these terms appear in close proximity to each other. In this manner, we aim to capture articles specifically discussing gas price increases. Then, these counts are normalized by the total number of articles in each country-year, in order to account for changing newspaper coverage in Factiva. The final index is constructed as:

$$GasPriceChatter_{i,t} = 100 \times \frac{GasPriceArticles_{i,t}}{TotalArticles_{i,t}}$$

Figure A3 presents the relationship between the oil price index and the gas price chatter measure for the United States, over the period 2000-2019. The 2000s were characterized by relatively high discussions of gas prices, which peaked in 2008. These we accompanied by high, positive values of our oil price shock measure, corresponding to increases in oil prices. In contrast, over the past ten years, both measures have declined significantly. The lower reliance of the US on oil imports over this period is likely a part of this secular trend.

Figure A3: Oil Price Shock and Gas Price Chatter, United States



Notes: This figure presents oil price shocks (LHS) and gas price chatter (RHS) for the United States for the period 2000-2019.