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LOCAL LABOUR MARKET CONDITIONS AND ELECTORAL BEHAVIOUR: AN INSTRUMENTAL VARIABLE APPROACH FROM ITALY

by Daniel Mele* and Alessandro Pietropaoli**

Abstract

What is the causal impact of local employment dynamics on electoral behaviour? We combine Italian labour market area-level data for four national elections (2008, 2013, 2018 and 2022) with a shift-share IV estimation design to identify how local labour market conditions, captured by changes in the employment rate, affect voter participation and incumbent support. Our baseline estimates show that a 1 p.p. drop in the employment rate yields a significant 0.76 p.p. increase in turnout and a 0.80 p.p. decline in incumbent vote share. Further analyses reveal crucial nuances. First, exploring mediation, we find that higher turnout in response to worsening labour market conditions accounts for roughly one-quarter of the total negative impact on incumbent support via a participation channel. Second, the effects appear to be driven entirely by adverse conditions: we find strong electoral reactions in areas actually experiencing employment declines, but no significant response where conditions improve, consistent with a protest voting framework. Third, while regional-national partisan alignment slightly moderates effect magnitudes, national accountability for economic performance largely dominates the local electoral reaction.

JEL Classification: D72, J31, R23.

Keywords: economic voting, Italian elections, local labour markets, electoral turnout, incumbent support, shift-share IV, participation channel, protest voting.

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* Bank of Italy, ARET, Trieste.

** Bank of Italy, ARET, L'Aquila.

1 Introduction*

Since the 1980s, traditional class identities have arguably weakened worldwide, potentially reducing the influence of ideological and cultural factors on electoral decisions. Concurrently, concerns about economic and social hardship have remained central drivers of voting behaviour. This has prompted extensive multidisciplinary research into the relationship between socio-economic conditions and political preferences, with a particular focus on the electoral implications of labour market dynamics (e.g., Emmenegger et al., 2015; Algan et al., 2017).

The economic voting literature has investigated not only how economic conditions shape vote choice, but also whether they influence the fundamental decision to vote at all. Electoral participation, often viewed as a barometer of civic engagement and social cohesion (Putnam, 2000), is crucial for democracy legitimacy. Yet, recent decades have witnessed notable declines in voter turnout across many established democracies. This trend has intensified the debate on whether, and how, economic hardship, typically proxied by adverse labour market conditions, ultimately encourages or discourages political participation (e.g., Emmenegger et al., 2017; Azzollini, 2021).

Seminal work by Rosenstone (1982) proposed two competing hypotheses regarding the impact of economic adversity, particularly unemployment. The *mobilization* hypothesis posits that hardship increases voter turnout, as affected individuals seek governmental redress (Lipset et al., 1960). Conversely, the *withdrawal* hypothesis suggests that hardship reduces participation, shifting attention away from political engagement and toward fulfilling immediate needs (Wolfinger and Rosenstone, 1980). Despite extensive research, the empirical evidence remains somewhat contested. While studies using individual-level data often yield mixed findings, analyses conducted at more aggregated levels, such as regions or countries, frequently find evidence consistent with the *mobilization* hypothesis (e.g., Lipset and Rokkan, 1967; Arceneaux, 2003; Burden and Wichowsky, 2014).

Beyond its intrinsic importance, voter turnout may also mediate the link between economic performance and the electoral accountability of incumbents. In his seminal work, Radcliff (1994) argued for asymmetric accountability: governments might be rewarded for good economic outcomes but escape punishment

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for poor performance due to depressed turnout among disaffected citizens. This *positive bias* perspective, however, has been increasingly challenged. Theoretically, models emphasising *blame attribution* suggest voters actively assign responsibility for economic conditions, implying punishment for poor performance is plausible (Arceneaux, 2003). Empirically, numerous recent studies document significant electoral losses for incumbent parties when the economy performs poorly (e.g., Hernández and Kriesi, 2016; Rombi and Valbruzzi, 2024).

Thus, the precise interplay between economic conditions, participation, and incumbent evaluation remains an open question. In this conflicting scenario, we aim to contribute to the economic voting literature by providing a rigorous investigation of the causal relationship between local employment dynamics and both key electoral outcomes: voter turnout and incumbent support.

To this purpose, we focus on a compelling setting, the last four Italian Parliamentary elections, held in 2008, 2013, 2018 and 2022. During the period considered, Italy offers a particularly relevant context for our study for several intertwined reasons. First, the political landscape exhibited high instability, featuring ten governments since 2006 (eight political, two technical) with an average tenure of just 667 days (excluding the current Meloni government) and no coalition has been successful in consecutive elections. This volatility, occurring alongside a steady decline in voting turnout dropping below 80% in 2013 to a record low of 64% in 2022, naturally focuses attention on the factors influencing voters' electoral behaviour, potentially increasing the weight placed on tangible economic indicators like local employment conditions. Second, and importantly for our identification strategy, this period was marked by significant economic turbulence stemming from three major crises: the 2008 global financial crisis, the 2011 sovereign debt crisis, and the 2020 COVID-19 pandemic. These events generated substantial variation in economic conditions over time and, critically, across different regions and localities. Standard metrics like real GDP per capita and employment rates displayed slow and uneven recoveries. In particular, the national employment rate went back exceeding the pre-crises value in 2018, with Southern Italy's employment rate only surpassing its 2008 peak in 2022, highlighting pronounced regional heterogeneity in economic paths and enduring territorial divides. This considerable spatial and temporal variation in local labour market dynamics provides the empirical leverage needed to identify their causal effects on

voters' choices and their decisions on whether to engage at all.

Furthermore, our analysis utilises a granular local perspective, recognising that the voting consequences of economic factors are best understood at the level where socio-economic shocks are experienced. Recent research confirms that such shocks are unevenly distributed across territories (e.g., Becker et al., 2017; Rodríguez-Pose, 2018). Our study seeks to build on these insights by examining these dynamics at a finer geographical scale than much of the valuable prior work, which has often utilised aggregate country- (e.g, Bartels, 2014; Guiso et al., 2017) or regional-level data (e.g., Algan et al., 2017; Bloise et al., 2021). Then, we conduct our analysis at the level of Italian labour market areas (LMAs). These are sub-regional geographical territories functionally defined based on self-containment in commuting patterns, areas where the majority of the labour force resides and works. Given this functional definition, which aims to capture geographically integrated economic units, we consider local labour systems the most suitable spatial unit for investigating how localised labour market developments shape electors' behaviour.

Finally, while a large literature explores economic voting, very few studies (e.g., Charles and Stephens Jr, 2013; Lechler, 2019) document the causal impact of economic conditions on political attitudes of the population. Identifying the causal effect poses a significant challenge, as standard analyses associating labour market activity with electoral behaviour are susceptible to endogeneity biases, limiting much existing knowledge to correlation evidence. A primary concern is omitted variable bias, where unobserved time-varying local characteristics (e.g., local policy initiatives, changes in social capital) might influence both local employment dynamics and voting patterns. Classical measurement error is also very likely with granulated local employment data, potentially attenuating estimated relationships. Reverse causality is a less critical concern, though electoral outcomes or the anticipation thereof could theoretically influence local economic activity or policies. To address these identification challenges and isolate plausibly exogenous variation in local employment, our study employs a shift-share instrumental variable (IV) strategy, drawing on the methodology pioneered by Bartik (1991) and Blanchard and Katz (1992). The core idea is to leverage differential local exposure to aggregate industry shocks based on an area's predetermined industrial structure. Specifically, we construct our instrument by shifting the initial 2001

sectoral composition of employment in each labour market area with subsequent national-level annual employment growth across 12 industries. By instrumenting actual local employment changes with the predicted changes derived from this interaction, the shift-share strategy aims to purge the estimates of confounding biases, thereby facilitating a causal interpretation. It mitigates omitted variable bias by relying on potentially exogenous national shocks interacted with predetermined local shares, making the instrument less likely to be correlated with unobserved local time-varying factors. It also addresses reverse causality, as the instrument is driven by historical industrial structure rather than contemporaneous political outcomes or anticipation thereof. Furthermore, insofar as the instrument's components - initial shares drawn from Census data and national industry shifts - are uncorrelated with the measurement error likely present in LMA employment figures, the IV strategy effectively addresses attenuation biases stemming from such error.

Our results can be summarised as follows. In our preferred specification, accounting for demographic, human capital and economic characteristics of the local labour systems, alongside spatial and period fixed effects, we find that a 1 p.p. decline in the LMA employment rate causes a statistically significant 0.76 p.p. increase in voter turnout and a 0.80 p.p. decrease in incumbent support. These magnitudes are not negligible: a one standard deviation drop in the employment rate change (1.82 p.p) implies a 1.38 p.p. rise in participation (nearly one-third of its s.d.) and a 1.46 p.p. fall in incumbent vote share (about one-eighth of its s.d.). Furthermore, we connect these findings by exploring turnout's mediating role. We provide, to our knowledge, the first empirical estimate of this *participation channel*, finding higher turnout mediates approximately one-fourth of the total estimated effect of employment shocks on incumbent evaluation in our context. This indirect pathway hints at protest mobilization. We directly test this interpretation by examining asymmetric effects. Our analysis reveals that the electoral reaction is concentrated almost entirely in areas actually experiencing employment declines: here, a 1 p.p. employment drop leads to significantly heightened participation (1.74 p.p.), strongly reduced incumbent support (-0.86 p.p.), and increased invalid voting (0.24 p.p.), while LMAs with improving employment show no significant effects. This stark asymmetry provides compelling evidence for a *protest voting* perspective of economic voting. Finally, exploring heterogeneity based on regional-national political alignment, we find

that while alignment modestly modulates the intensity of voter responses, the core effects persist across both aligned and non-aligned regions. This suggests national accountability for economic performance largely dominates the electoral response.

The remainder of the paper is organised as follows. First, we describe the data and document recent electoral and employment trends across Italian labour market areas (Section 2). Next, we introduce our Bartik-type IV identification strategy (Section 3). Then, Section 4 presents the main findings on how local employment dynamics shape turnout and incumbent vote share, before exploring three extensions: the mediating *participation channel*, the *protest voting* interpretation of economic voting, and the moderating role of partisan alignment in regional government. Finally, Section 5 concludes.

2 Data and some context

We use a panel dataset of Italian labour market areas analysing electoral outcomes from the 2008, 2013, 2018 and 2022 Parliamentary elections. Our study relates these outcomes to local employment dynamics observed during the preceding inter-election periods specifically 2006 – 2008 for the 2008 election, 2008 – 2013 for the 2013 election, 2013 – 2018 for the 2018 election, and 2018 – 2022 for the 2022 election. For all LMAs, we incorporate relevant socio-economic and demographic characteristics from Census data: the 2001 Census provides controls for the first period (leading to the 2008 election), while the 2011 Census is used for the subsequent periods (leading to the 2013, 2018 and 2022 elections). Descriptive statistics for all variables are reported in Appendix A, Table 9.

Data on election outcomes. Information on the national elections held in 2006, 2008, 2013, 2018 and 2022 for both houses of the Italian Parliament (*Camera dei Deputati* and *Senato della Repubblica*) is sourced from *Eligendo*, an open portal managed by the Central Directorate for Electoral Services of the Italian Ministry of Interior.[0] This dataset provides detailed information, down to the municipality level, includ-

[0]Our main analysis focuses on elections for the *Camera dei Deputati*, primarily because its electorate historically encompassed all adult citizens (18+), thus capturing the broadest possible voter response. However, the Italian Parliament operates under a principle of perfect bicameralism, and the *Senato della Repubblica* shares identical legislative functions. Historically, the minimum voting age for the *Senato* was higher (25), creating a slightly different electoral base, though this distinction has been eliminated before the 2022 election. Robustness checks using turnout or incumbent vote share in *Senato* elections support our general

ing the number of electors and voters, their gender composition, votes per party list, counts of invalid and blank ballots, and voting turnout for all national and local elections since the very first Constitutional Referendum (June 2, 1946). As our analysis utilises employment information primarily available at the LMA level, we aggregate the municipality-level electoral data accordingly. Then, our reference statistical units are the labour market areas as defined by ISTAT since 2011.[1] We exclude local systems corresponding to Valle d'Aosta because of the peculiar region's party system, its different electoral rules which diverge from the multi-member constituency used elsewhere in Italy, and its very small share of the national electorate (approximately 0.2%).[2] Our final working sample therefore comprises 605 local market areas extending over 19 regions.

The elections analysed occurred within the political framework of Italy's *Second Republic*, established following major systemic shifts in the early-to-mid 1990*s*. This era has largely been characterised by increased, though often unstable, polarisation and electoral competition between centre-right and centre-left coalitions, despite Italy's traditionally fragmented party system. During our study period, the centre-right coalition held power following the 2001 and 2008 elections, while the centre-left had won in 2006 an subsequently prevailed in 2013. This pattern of bipolar alternation was interrupted in 2018 by the electoral success of the non-partisan *Movimento 5 Stelle*. The most recent 2022 election saw a return to a centre-right majority.

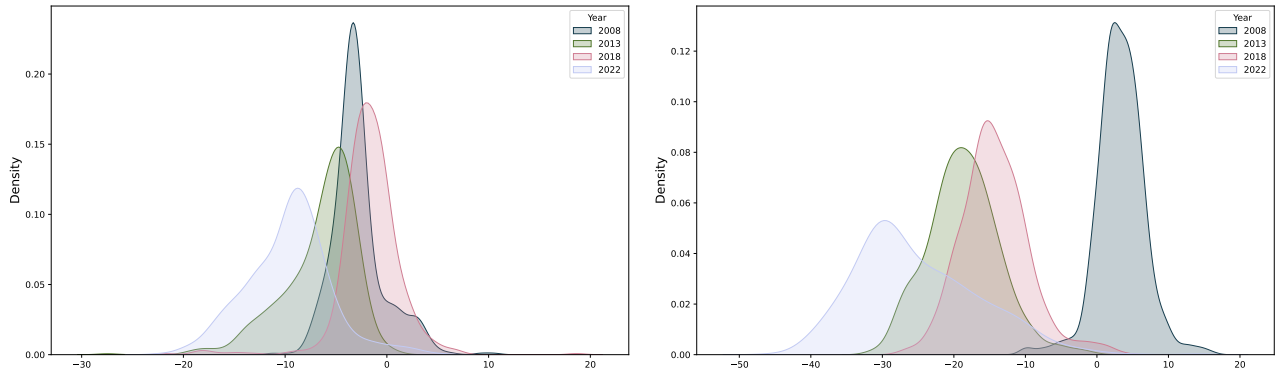
A clear trend revealed by the electoral data is a significant decline in voter participation over the period under investigation. The average voting turnout across the local systems fell dramatically from 79.8% in the 2008 national election to 61.9% in 2022. This latest election saw participation approximately 10 p.p. lower than in 2018. While this downward trend is widespread, its magnitude varies considerably across labour market areas: the decline in participation between 2008 and 2022 ranged from −7.8 p.p. in Troina (Sicily) to −38.2 p.p. in Forio (Campania). On average, turnout fell most sharply in elections held after major socio-economic shocks, specifically in 2013, following the global financial crisis and European

conclusions (see Section 4.3).

[1] ISTAT identified 610 LMAs in 2011 using commuting data from the 15^{th} Population Census. The functional definition, designed to capture self-contained labour markets, implies LMAs do not necessarily respect administrative boundaries: 56 (9.2%) cross regional borders and 185 (30.3%) span multiple provinces.

[2] We further exclude the *Circoscrizione estero*, as voting behaviour of Italians abroad is unlikely to be driven by local labour market dynamics.

sovereign debt emergency, and in 2022, after the COVID-19 pandemic (Figure 1, panel (a)). Those same general elections saw also the largest national-level incumbent vote share losses (Figure 1, panel (b)). Yet, considerable heterogeneity across LMAs in both dimensions highlights the need to investigate how local factors, such as labour market dynamics, actually shape electoral decisions.



(a) Voter participation **(b)** Incumbent vote share

Figure 1: Distribution of differences respect the previous election in voter participation and incumbent vote share.

Defining incumbency in the context of Italy's multi-party system and frequent government turnover within the same legislature present some challenges. In our study, we consider the incumbents for each inter-election period the main parties forming the initial governing coalition immediately after the national election (see Table 1). This approach cleanly anchors accountability to those parties who were given the electoral mandate at the start of the legislature, avoiding confusion from subsequent collapses, reshuffles or technical governments. For the 2008 election, we consider three incumbent parties based on the previous *Prodi II* government (2006 – 2008): the leading centre-left coalition *L'Ulivo* (later *Partito Democratico*) and its main political allies, i.e., *Rifondazione Comunista* (later *Sinistra l'Arcobaleno*), and *Di Pietro Italia dei Valori*. Results are robust to considering as incumbents only *L'Ulivo* plus one of the two supporters alternatively (see Section 4.3). Following the 2008 election, the *Berlusconi IV* government derived overwhelming support (approximately 98%) from just two parties: *Il Popolo della Libertà* and *Lega Nord*. Consequently, these are considered the only incumbents in 2013. The initial *Letta* government formed after the 2013 election was strongly supported by *Partito Democratico*, *Forza Italia*, and *Scelta Civica per l'Italia*. However, as *Scelta Civica per l'Italia* did not contest the subsequent 2018 election, we define the incumbents being evaluated as the main two enduring parties: *Partito Democratico* and *Forza Italia*. Finally,

the *Conte I* government, formed after the 2018 election, was almost entirely composed of *Movimento 5 Stelle* and *Lega per Salvini Premier* (around 98%), which we consider the incumbent parties in the most recent election.

Table 1: Incumbent parties list

Election	(1^{st} party previous election)	(2^{nd} party previous election)	(3^{rd} party previous election)
2008	**Partito Democratico** (L'Ulivo)	**La Sinistra l'Arcobaleno** (Rifondazione Comunista)	**Di Pietro Italia dei Valori** (Di Pietro Italia dei Valori)
2013	**Il Popolo della Libertà** (Il Popolo della Libertà)	**Lega Nord** (Lega Nord)	**-** (-)
2018	**Partito Democratico** (Partito Democratico)	**Forza Italia** (Il Popolo della Libertà)	**-** (Scelta Civica per l'Italia)
2022	**Movimento 5 Stelle** (Movimento 5 Stelle)	**Lega per Salvini Premier** (Lega)	**-** (-)

Notes: In parentheses, we report the list name used by the incumbent party or coalition in the previous *Camera dei Deputati* election.

Employment information at the labour market area-level. We exploit a dedicated ISTAT dataset, providing annually estimates on key labour market variables including the number of employees, job seekers, labour force, population aged 15 and over, activity, employment and unemployment rates for all LMAs over the period 2006 – 2022. To construct our shift-share instrumental variable for the local employment rate we integrate two further data sources (see Section 3). First, we use the 2001 Italian Census to derive the initial sectoral employment composition based on 12 branches of economic activity for each local system, aggregating municipality-level data. These 2001 shares capture the pre-determined local industrial structure. Second, we compute the national annual employment growth rates for these same sectors starting from 2002, using public ISTAT national accounts data. These growth rates serve as the aggregate shift components in our Bartik-type instrument.

We adopt changes in the local employment rate as our primary indicator of local labour market conditions, rather than the unemployment rate used in other economic voting studies. This decision is based on the direct suitability of our IV strategy, data quality advantages, conceptual breadth, and precedent in the causal literature. First, and critically for our identification strategy, the shift-share instrumental variable - interacting initial local sectoral employment shares with national sectoral employment growth - is specifically designed to predict changes in employment. Adapting this Bartik logic to the unemployment

rate, which lacks the necessary sectoral share decomposition, is conceptually problematic and lacks clear theoretical grounding for its validity. Second, data quality considerations favour the employment rate in our context. Available LMA-level data indicate that unemployment rate estimates exhibit substantially higher measurement error than employment rate estimates, with coefficients of variation approximately three times larger. Relying on the noisier unemployment series could yield less precise or stable estimates, even within an IV framework. Third, conceptually, we argue that a decline in the employment rate signals reliably worsening labour market conditions, as a rise in the unemployment rate. Moreover, the notion of economic adversity relevant to voters' decisions is a multifaceted concept as shown by Rosenstone (1982) who examined various aspects of economic hardship beyond just unemployment. Finally, our focus on instrumented changes in the employment rate is consistent with established causal analyses that use similar IV approaches to link employment dynamics to political outcomes (e.g., Charles and Stephens Jr, 2013; Lechler, 2019).

The period under study (2006 – 2022) was marked by significant socio-economic turbulence for Italy, including two economic crises and the recent COVID-19 pandemic. Nationally, the employment rate - calculated over the whole Italian population above the minimum working age (14+) - struggled, falling after 2008, bottoming out at 42.4% in 2013, and remaining below its pre-crisis peak (45.7%) still in 2022. Crucially for our analysis, Italian labour market areas are characterised by strong geographic heterogeneity. National local systems vary greatly in size, from around 1'000 workers (Visso, Marche) to over 1.7 million (Milan, Lombardia), with an average of roughly 37'000 employed individuals. More importantly, with a standard deviation of 1.8 p.p. over the study period, variations in the local employment rate range from −12.5 p.p. occurred in the Olbia local system in Sardinia up to +12.0 p.p. of the Pievepelago LMA in Emilia-Romagna. Furthermore, the fraction of LMAs interested by a decline in the employment rate over the whole period was the highest in Southern regions (56.8%, including Sicily and Sardinia) and the lowest in the Central area of the country (34.3%); the North hovers in the middle with the North-West area slightly better positioned than the North-East (41.5% and 45.4%, respectively). The significant variability in local employment rate dynamics across LMAs and electoral cycles, cleanly illustrated in Figure 3 (Appendix B), guarantees the necessary variation for our empirical strategy to identify the electoral

consequences of localised economic shocks.

3 Empirical strategy

Acknowledging findings suggesting that changes in economic conditions may be more salient for voting behaviour than levels (Algan et al., 2017), and in the spirit of similar difference-based strategies (e.g., Barone and Kreuter, 2021), we estimate the following model relating inter-election changes in electoral outcomes to inter-election changes in local employment:

$$\Delta E_{s,t} = \beta_0 + \beta_1 \Delta EmpRate^*_{s,t-1} + \gamma \mathbf{X}_{s,t_0} + \delta_{r(s)} + \pi_t + \eta_{s,t} \tag{1}$$

where s indexes Italian labour market areas, t denotes the election years (2008, 2013, 2018 and 2022) and t_0 refers to the Census year 2001 for the period 2006 – 2008 and 2011 for the subsequent periods leading to 2013, 2018 and 2022 elections. $\Delta E_{s,t}$ represents the change in the electoral outcome E, either voter turnout rate or incumbent vote share, across two consecutive national elections and $\Delta EmpRate^*_{s,t-1}$ is the change, likely endogenous, in the local employment rate between the former election and the year preceding the current one. $\delta_{r(s)}$ are fixed effects for the four macro-regions r containing LMA s (North-East, North-West, Centre and South) controlling for geographical-specific average trends, π_t is a set of election-year fixed effects capturing nationwide shocks common to all LMAs, and $\eta_{s,t}$ is the idiosyncratic error term component, which we cluster at the LMA level in all estimations to account for potential serial correlation within local market areas. Finally, $\mathbf{X}_{s,t_0}$ is a vector of local characteristics, all measured at Census year t_0 and included in levels, aimed to capture initial LMA conditions potentially correlated with subsequent economic and political trajectories. Our full and preferred specification controls for: demographic characteristics (population size, density and old-age dependency ratio), human capital indicators (share of population with at least a middle school degree and female unemployment rate), other economic/social context variables (share of non-residential buildings and ISTAT's vulnerability index averaged to LMA level)[3]. Data for all these covariates are sourced from the 2001 and 2011 ISTAT

[3]The vulnerability index is a composite indicator constructed by ISTAT to provide a synthetic measure of the multidimensional social and material vulnerability of Italian municipalities, facilitating territorial and temporal comparisons. It is calculated as the corrected arithmetic mean of seven normalised elementary indicators: share of population aged 25 – 64 illiterate or literate without educational qualifications; share of families with potential economic hardship; share of families with potential need for

Censuses.

In Equation 1, $\Delta EmpRate^{*}_{s,t-1}$ is starred to denote that the local employment rate is likely to be endogenous in a regression aimed at estimating its impact on electoral behaviour. A primary concern is omitted variable bias, since unobserved time-varying characteristics, such as shifting political sentiments, local policy initiatives, or changes in social capital, might simultaneously influence both local employment dynamics and voting patterns, leading to biased estimates. Furthermore, classical measurement error in granulated local employment data can attenuate estimated relationships, potentially masking genuine effects. Finally, reverse causality is also a potential issue, as electoral outcomes or the anticipation thereof could theoretically influence local economic activity or policies. To address these identification challenges and isolate plausibly exogenous variation in local employment, we employ a shift-share IV strategy, drawing on the methodology pioneered by Bartik (1991) and Blanchard and Katz (1992). The core idea of this approach is to leverage differential local exposure to aggregate industry shocks based on an area's predetermined industrial structure. Therefore, we construct a classic Bartik-type instrument by shifting the initial 2001 sectoral composition of employment in each labour market area, obtained starting from 14^{th} ISTAT Population Census data, with subsequent national-level annual employment growth across the same 12 industries.[4] By instrumenting actual local employment changes with the predicted changes derived from this interaction, the shift-share strategy aims to purge the estimates of confounding biases, thereby facilitating a causal interpretation.

Specifically, to construct our instrument, we first predict the local employment growth rate for each LMA s between the base year $\tau = 2001$ and subsequent years t. Following Gould et al. (2002) and more recently Amin et al. (2023), this predicted growth rate $g_{s,t}$ is a share-weighted average of national sectoral growth rates:

$$g_{s,t} = \sum_{o} \frac{Emp_{o,s,\tau}}{Emp_{s,\tau}} \cdot g_{o,t} \tag{2}$$

where $\frac{Emp_{o,s,\tau}}{Emp_{s,\tau}}$ is the share of employment in sector o within LMA s in the base year $\tau = 2001$ (from Census data) and $g_{o,t}$ is the national growth rate of employment in sector o between $\tau = 2001$ and year t (from

care/welfare assistance; share of population in severe housing overcrowding; share of families with 6 or more members; share of young and adult single-parent families; and share of youth aged 15 – 29 not in employment, education or training (NEET). For our analysis, this municipal-level index has been averaged to the LMA-level.

[4]The different sectoral definition through time has been solved by applying the NACE-ATECO correspondence tables published by ISTAT.

ISTAT aggregate accounts). Using these predicted growth rate, we construct the level of our instrumental variable - the predicted employment rate - for year t:

$$EmpRate^{IV}_{s,t} = \frac{1}{Pop_{s,t}} \times \left(Emp_{s,\tau} \cdot (1 + g_{s,t})\right) \tag{3}$$

Here, we project the initial total employment level $Emp_{s,\tau}$ for LMA s forward using the predicted growth $g_{s,t}$ and normalise by the local population $Pop_{s,t}$ at time t.

Since our main specification uses the change in the employment rate ($\Delta EmpRate_{s,t}$) as the key endogenous variable, our actual instrument is the corresponding change in the predicted employment rate level, $\Delta EmpRate^{IV}_{s,t}$. Then, we estimate Equation (1) using two-stage least squares (2SLS), where the first-stage regression is:

$$\Delta \widehat{EmpRate}_{s,t} = \beta^{iv}_1 \Delta EmpRate^{IV}_{s,t} + \gamma^{iv} \mathbf{X}_{s,t_0} + \delta^{iv}_{r(s)} + \pi^{iv}_t + \epsilon_{s,t} \tag{4}$$

Regression 4 predicts the actual change in the local employment rate using the change in its predicted value (our instrument, $\Delta EmpRate^{IV}_{s,t}$) along with the exogenous controls $\mathbf{X}_{s,t_0}$, macro-region fixed effects $\delta_{r(s)}$, and year fixed effects π_t.

The validity of our shift-share instrumental variable strategy rests on alternative identification assumptions that have been significantly clarified in recent econometric literature (Goldsmith-Pinkham et al., 2020; Borusyak et al., 2022). Following the framework emphasised by Goldsmith-Pinkham et al. (2020), a key condition for the instrument's validity, particularly given our focus on changes over time, is the exogeneity of the initial local sectoral employment shares. This requires that these predetermined shares are uncorrelated with unobserved factors driving differential trends in our electoral outcomes (turnout, incumbent support) across LMAs during the study period, analogous to a parallel trend assumption in difference-in-differences designs (Borusyak et al., 2025). We consider this share exogeneity condition to be plausible in our specific context. By utilizing local employment shares from 2001, which significantly predate both our analysis period (2006 – 2022), the major socio-economic crises occurring within it and the far recent labour market digital transition, we anchor our instrument in traditional industrial structures. It is reasonable to argue that these 2001 local employment shares are unlikely to be systemat-

ically correlated with the specific LMA-level political dynamics and outcome trends emerging over the subsequent decades, especially conditional on our rich set of control variables capturing relevant LMA characteristics. Furthermore, the aggregate shocks, represented by national Italian sectoral growth rates, are plausibly exogenous to unobserved local-level factors influencing electoral dynamics within specific LMAs, once the predetermined local exposure via the 2001 shares is conditioned upon.[5]

4 Econometric results

First, we present the main evidence on how local employment conditions affect both electoral participation and the political performance of incumbents. We then examine the mediating role of voter turnout in linking local labour market dynamics to the electoral judgement of ruling parties. Additional findings suggest that voters react asymmetrically to changes in employment rates, with significant responses in those labour market areas actually experiencing employment declines. This asymmetry, combined with the general inverse relationship between turnout and labour market conditions, leads us to interpret economic voting primarily as a form of protest voting. Further supporting this conclusion, we show that the relationship between local employment dynamics and electoral behaviour is particularly pronounced in local labour systems located in regions governed by parties not aligned with the national incumbents. Finally, we conduct few robustness checks to validate our results.

4.1 Local employment dynamics and electoral behaviour of the population

Local employment and voting turnout. We begin our empirical analysis by investigating the relationship between local employment conditions and electoral participation. Table 2 shows both OLS and IV estimates across various model specifications. All regressions include period fixed effects to capture nationwide political and economic shocks that might impact all local entities between consecutive Parliamentary elections, as well as geographical area-level fixed effects to account for time-invariant interregional characteristics that could otherwise bias the estimated relationship.

Columns (1)-(3) report OLS results with progressively richer set of controls. The point estimate of the

[5]The role of shifts is secondary with the exogenous shares strategy: Goldsmith-Pinkham et al. (2020) show that the shifts affect the weights in their representation of shift-share as pooled one-at-a-time share-instrument estimates, but they do not affect the identification of β so long as the shares are exogenous (Borusyak et al., 2025).

coefficient of interest and its precision is extremely stable, ranging from −0.14 p.p. when we account for the full set of controls to −0.16 p.p. when we consider only demographic control variables. This evidence suggests a negative and statistically significant correlation between changes in local employment rates and voting participation among the local market area population.

Table 2: Local employment and voting turnout.

	(1)	(2)	(3)	(4)	(5)	(6)
Δ_e(employment rate)	−0.16***	−0.15***	−0.14***	−0.81***	−0.77***	−0.76***
	(0.05)	(0.05)	(0.05)	(0.14)	(0.14)	(0.14)
First Stage						
IVΔ_e(employment rate)				0.65***	0.65***	0.64***
				(0.04)	(0.04)	(0.04)
F-stat excluded instruments				338.97	318.74	307.94
Period FE	Y	Y	Y	Y	Y	Y
Area FE	Y	Y	Y	Y	Y	Y
Demographic controls	Y	Y	Y	Y	Y	Y
Human capital controls	N	Y	Y	N	Y	Y
Economic controls	N	N	Y	N	N	Y
Estimation method	OLS	OLS	OLS	IV	IV	IV
Observations	2420	2420	2420	2420	2420	2420

Notes: The dependent variable is the change in voting turnout between two consecutive *Camera dei Deputati* elections. Standard errors in parentheses are clustered at the level of 605 local labour systems.
*** p<0.01, ** p<0.05, * p<0.1.

To address potential endogeneity issues, such as measurement error and omitted variables, as detailed in Section 3, we turn to an instrumental variable strategy. Columns (4)-(6) document the results derived using the IV estimator. In all specifications, our shift-share instrument for the change in the local employment rate across two consecutive national elections exhibits the expected sign and is highly significant in predicting the potentially endogenous variable. The first-stage F-statistics are well above the "rule of thumb" threshold of 10, ranging from 307.94 in the full model (column (6)) to 338.97 in the more parsimonious specification (column (4)), indicating instrument relevance and alleviating weak instrument concerns (Staiger and Stock, 1994). Compared to OLS, the IV estimates reveal a much larger impact of local employment changes on voting participation within the local population. This evidence

suggests the OLS estimates suffer from an attenuation bias, potentially driven by classical measurement error in local employment data or by omitted variables that introduce a net positive bias because they are correlated in the same direction with both local economic conditions and voter turnout. In our preferred specification, which includes controls for demographic, human capital and economic characteristics at the local market area level (column (6)), a 1 p.p. decrease in the local employment rate is estimated to increase electoral turnout by 0.76 p.p., significant at the 1% level. To interpret the magnitude, the estimated coefficient implies that a local labour system experiencing a one standard deviation reduction in its employment rate change (approximately 1.82 p.p.) would see a corresponding increase in voting participation change of about 1.38 p.p.. This effect represents slightly less than one-third of a standard deviation in turnout change across two consecutive elections (4.62 p.p.). This finding - that worsening labour market conditions boost political engagement - supports the *mobilization* hypothesis thoroughly discussed in Rosenstone and Hansen (1993). According to the *mobilization* view, adverse economic dynamics would motivate disappointed citizens to vote, seeking to influence government policy and express dissatisfaction with ruling parties. Building on this, we next investigate whether these changes in local economic activity also impact political support for the incumbent coalition.

Local employment and incumbents support. Table 3 presents both OLS and IV estimates examining the relationship between local employment dynamics and changes in the vote share of incumbent parties across consecutive national elections, using progressively richer model specifications.

The first three columns display OLS results. The estimated coefficient for the change in the local employment rate is consistently positive, remarkably stable across specifications, and statistically significant. This preliminary evidence, while potentially subject to endogeneity bias, suggests a positive correlation between changes in local employment and the electoral performance of major government parties.

However, to establish a causal link, we rely on our shift-share strategy (columns (4)-(6)). The first-stage regression remains identical to that discussed previously, indicating strong instrument relevance. Comparing the second-stage IV results to OLS, the positive impact of local employment changes on incumbent electoral support is estimated to be considerably larger. This pattern confirms the fact that among the sources of bias those delivering attenuation, such as measurement error and omitted variables, are likely

to play a major role. Our preferred specification (column (6)) suggests that a 1 p.p. decrease in local employment rate causes an estimated 0.80 p.p. decrease in the vote share of the former election winners, once we control for demographic, human capital and economic characteristics of the local labour systems. Put differently, a one standard deviation reduction in the LMA employment rate change (around 1.82 p.p.) involves an average loss in incumbent vote share equal to 1.46 p.p. This effect represents slightly less than one-eighth of the dependent variable's standard deviation (approximately 11.2 p.p.). Such evidence aligns with the economic voting literature, which typically documents electoral losses for incumbents during periods of adverse economic conditions (e.g., Hernández and Kriesi, 2016; Rombi and Valbruzzi, 2024).

Table 3: Local employment and support for the incumbents.

	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Δ_e(employment rate)	0.43***	0.46***	0.43***	0.71***	0.80***	0.80***
	(0.09)	(0.09)	(0.08)	(0.22)	(0.22)	(0.22)
First Stage						
IVΔ_e(employment rate)				0.65***	0.65***	0.64***
				(0.04)	(0.04)	(0.04)
F-stat excluded instruments				338.97	318.74	307.94
Period FE	Y	Y	Y	Y	Y	Y
Area FE	Y	Y	Y	Y	Y	Y
Demographic controls	Y	Y	Y	Y	Y	Y
Human capital controls	N	Y	Y	N	Y	Y
Economic controls	N	N	Y	N	N	Y
Estimation method	OLS	OLS	OLS	IV	IV	IV
Observations	2420	2420	2420	2420	2420	2420

Notes: The dependent variable is the change in the vote share of the incumbent parties between two consecutive *Camera dei Deputati* elections. Incumbents are defined as the main parties forming the initial governing coalition immediately after the national election (see Table 1). Standard errors in parentheses are clustered at the level of 605 local labour systems.
*** p<0.01, ** p<0.05, * p<0.1.

Summing up, our instrumental variable analysis indicates that in those local systems where labour market conditions relatively worsen, there are two key electoral consequences. First, consistent with the classical *mobilization* hypothesis, the voting participation of the local population increases. Second, aligning with the theory of *retrospective voting* proposed by Key (1966), electoral support for incumbent

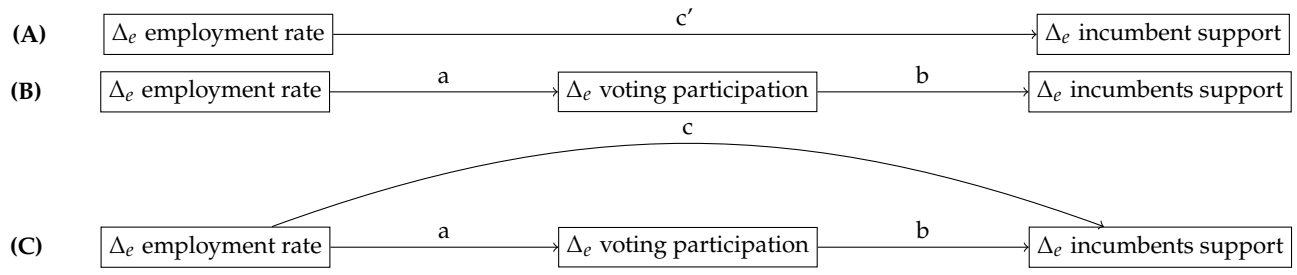
parties substantially decreases. Having established these core dynamics, our subsequent analysis aims to investigate further aspects of the relationship between local economy and voting behaviour to develop a more comprehensive understanding of the phenomenon.

4.2 Additional findings

The "participation channel". Our main analysis has established that declining local employment rates causally reduce support for incumbent parties. However, as Charles and Stephens Jr (2013) highlight, such aggregate relationship may arise not only because economic dynamics change electors' views about incumbents' quality (persuasion effect), but also because they alter the type or number of citizens who vote (composition effect). Given our separate finding that worsening labour market conditions also increase turnout, this raises the possibility that participation may act as a mediator. In other words, local employment dynamics might influence the vote share received by incumbents also indirectly, via their effect on turnout, in addition to any direct effect on voters' preferences. We refer to this potential indirect pathway as the *participation channel*. To formally test this hypothesis and explore the role of turnout in linking labour market conditions to incumbent electoral performance, we employ a mediation analysis framework based on the seminal work of Baron and Kenny (1986).

Figure 2 outlines a simple mediation model of economic voting, illustrating three possible scenarios for how participation might mediate the relationship between local employment dynamics and incumbent vote share.

Figure 2: A simple mediation model of economic voting.



Notes: Diagram **(A)** represents the *no mediation* scenario, where turnout does not play any role in connecting local employment dynamics with incumbents vote share ($c' = c$). Diagram **(B)** displays the *full mediation* case where $c' = a \times b$ and there is no direct impact of changes in the employment rate on incumbents electoral performance ($c = 0$). Diagram **(C)** plots the *partial mediation* situation where the total effect is actually disentangled into two components, i.e. the direct and indirect effects ($c' = c + a \times b$).

Diagram (A) represents the *no mediation* situation. In this case, turnout would play no mediating role, meaning the total effect of labour market conditions on incumbent support (c') would simply equal the direct effect (c). Diagram (B) displays the *full mediation* case. Here, the influence of local economic activity would operate entirely through participation. The direct effect (c) would be zero, and the total effect (c') would equal the indirect effect ($a \times b$). This indirect effect captures the pathway from employment dynamics to participation (a) multiplied by the subsequent pathway from participation to incumbent vote share (b). Finally, diagram (C) plots the *partial mediation* scenario. In this situation, changes in local employment rates would affect incumbent electoral performance both directly (c) and indirectly via participation ($a \times b$). Consequently, the total effect (c') would be the sum of the direct and indirect effects ($c' = c + a \times b$).

Table 4 shows IV estimates from various specifications of the *mediation* analysis, examining how both local employment dynamics and changes in voting turnout affect the variation in incumbent parties vote share across consecutive national elections. Including changes in electoral participation as an additional regressor does not compromise the strength of our Bartik instrument in predicting the potentially endogenous local employment rate. First-stage F-statistics remain well above the conventional threshold of 10, ranging from 300.66 in the full specification to 326.6 in the more parsimonious model. In our preferred specification (column (3)), which controls for demographic, human capital and economic characteristics of the 605 Italian labour market areas, the estimated coefficient on the instrumented change in employment rate is smaller than in Table 3, as expected, yet remains statistically significant. This is consistent with a scenario of *partial mediation*. Specifically, the total negative effect of a 1 p.p. decrease in the local employment rate on voting support for the former election winners, previously estimated at −0.80 p.p., is now decomposed into two significant components: a direct negative effect of deteriorating local employment dynamics (−0.59 p.p.) and an indirect effect operating through increased turnout in response to worsening labour market conditions (−0.21 p.p.).[6] This result provides a first quantitative evidence for the relevance of the *participation channel*, a mechanism often hypothesized but, to our knowledge, not previously quantified in a formal way. In our context, this pathway explains slightly more than

[6]The indirect effect corresponds to the product of the positive impact of a 1 p.p. decrease in the local employment rate on turnout (0.76 p.p.) and the negative effect of a 1 p.p. increase in participation on the former election winners vote share (−0.28) controlling for employment changes, i.e., $0.76 \times (-0.28) = -0.21$.

one-fourth of the total effect of local economic conditions on incumbent electoral fortunes.

Table 4: Mediation analysis: the *participation channel*

	(1)	**(2)**	**(3)**
Δ_e(employment rate)	0.47**	0.59***	0.59***
	(0.22)	(0.22)	(0.22)
Δ_e(participation rate)	−0.30***	−0.28***	−0.28***
	(0.04)	(0.04)	(0.04)
Indirect effect	−0.24***	−0.21***	−0.21***
	(0.05)	(0.05)	(0.05)
First Stage			
IVΔ_e(employment rate)	0.65***	0.64***	0.64***
	(0.04)	(0.04)	(0.04)
F-stat excluded instruments	326.60	309.08	300.66
Period FE	Y	Y	Y
Area FE	Y	Y	Y
Demographic controls	Y	Y	Y
Human capital controls	N	Y	Y
Economic controls	N	N	Y
Estimation method	IV	IV	IV
Observations	2420	2420	2420

Notes: The dependent variable is the change in the vote share of the incumbent parties between two consecutive *Camera dei Deputati* elections. Incumbents are defined as the main parties forming the initial governing coalition immediately after the national election (see Table 1). Standard errors in parentheses are clustered at the level of 605 local labour systems.
*** p<0.01, ** p<0.05, * p<0.1.

A potential limitation of our mediation analysis lies in the assumption that turnout changes are exogenous to incumbent vote share variations, conditional on instrumented employment dynamics and other covariates. While unobserved political factors (e.g., campaign efforts, candidate quality) could in principle confound the link between participation and support for incumbents, we argue that the granular nature of our analysis, spanning 605 heterogeneous LMAs, makes it unlikely that such omitted variables would induce a systematic, nationwide bias in a single direction. Moreover, while ideally, turnout could be instrumented (e.g., using rainfall, polling station proximity or concurrent elections), we do not identify exogenous predictors compatible with our primary Bartik-based IV strategy for employment. We therefore refrain from instrumenting turnout and treat its effect as strongly suggestive rather than fully

causal. Nevertheless, while acknowledging the caveat regarding the exogeneity assumption for turnout's effect, our findings consistently suggest that the *participation channel* is a key pathway through which local economic conditions can influence incumbent electoral outcomes. Further isolating this mechanism and assessing its causal strength deserves future research.

Economic voting as protest voting. The causal evidence that worsening labour market conditions increase voting turnout while simultaneously decreasing incumbent electoral support, combined with the suggestive finding that heightened participation at least partially mediates the negative impact on incumbents, raises the possibility that economic voting functions as a form of *protest* voting. This perspective suggests voters react more strongly to poor economic performance than to equivalent positive developments. To test this interpretation, we examine potential asymmetries by analysing separately those labour market areas where employment rates declined versus those where they increased across any pair of national elections. If economic voting is indeed characterized by *protest*, we would expect both the mobilizing effect on participation and the punishing effect on incumbent support to be significantly larger in magnitude within the subsample experiencing employment declines compared to any corresponding effect observed in areas with rising employment. Furthermore, if this interpretation holds, it would provide a clear rationale for our consistent presentation of results throughout the paper in terms of a 1 p.p. decline in the local employment rate, rather than reporting effects of a 1 p.p. increase as standard in econometric studies.

In Table 5, we report instrumental variable estimates for the relationship between labour market dynamics and both changes in voting turnout (Panel (A)) and incumbent support (Panel (B)), separately for two subsamples of Italian local systems. The first group comprises 1260 observations where employment rates have declined across consecutive national elections, while the second consists of 1160 observations with improving employment conditions. Focusing first on the declining employment subsample (columns (1)-(3)), the IV results across increasingly controlled specifications aligns with our predictions. Despite the reduced sample size compared to the baseline analysis, our shift-share instrument remains a relevant predictor of the endogenous employment change, with first-stage F-statistics ranging from 112.45 (full specification) to 131.22 (parsimonious model). In our preferred and more controlled specification (col-

umn (3)), a 1 p.p. decrease in the instrumented employment rate change is associated with a substantial 1.74 p.p. increase in voting turnout (significant at 1%) and a 0.86 p.p. reduction in incumbent support (significant at 5%). Notably, both coefficients exceed the corresponding full-sample estimates (0.76 p.p. and −0.80 p.p., respectively), indicating a heightened response in areas facing economic adversity. Turning to the subsample of LMAs with improving labour market conditions (columns (4)-(6)), the contrast is stark. While the first-stage F-statistics remain robust, though slightly lower, ranging from 71.30 to 74.33 depending on the covariate combination, the second-stage IV estimates for the effects of employment changes on both turnout and incumbent support are consistently small and statistically not significant across all model specifications.

This observed asymmetry - strong voter mobilization and incumbent punishment in response to adverse local employment dynamics, coupled with a lack of significant effects where labour market conditions improve – aligns perfectly with a *protest voting* interpretation of economic voting. Our proposed perspective finds further support in the suggestive, though statistically weaker, evidence regarding invalid ballots (Panel (C)). In the worsening labour market dynamics subsample, a 1 p.p. decrease in the local employment rate is associated with an increase in the share of invalid ballots ranging from 0.24 to 0.26 p.p. (significant at the 10% level), an act that has often been interpreted as a form of political protest (Barone and Kreuter, 2021). Conversely, and mirroring our findings for turnout and incumbent support, there is no significant impact on invalid ballots in the subsample of local systems with improving employment conditions.

Taken together, the consistent pattern of asymmetric responses across multiple electoral behaviours – heightened participation, reduced incumbent support and increased share of invalid ballots specifically following negative economic shocks – provides robust evidence for our interpretative framework. These findings should underscore the importance of considering protest motives when analysing the electoral consequences of local economic conditions and/or shocks at the national level.

Are local policies part of the story? Having established the main effects of local employment dynamics and discussed potential mediating and protest channels, we now explore potential heterogeneity arising from the local political environment. Specifically, we investigate the extent to which the partisan

Table 5: Economic voting as protest voting

	Declining employment LMAs			Increasing employment LMAs		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
A. Voting turnout						
Δ_e(employment rate)	−1.71***	−1.72***	−1.74***	0.27	0.41	0.44
	(0.36)	(0.37)	(0.37)	(0.26)	(0.27)	(0.27)
B. Support for the incumbents						
Δ_e(employment rate)	0.46	0.67*	0.86**	0.65	0.67	0.69
	(0.37)	(0.38)	(0.36)	(0.56)	(0.55)	(0.57)
C. Invalid ballots						
Δ_e(employment rate)	−0.24*	−0.26*	−0.24*	−0.04	0.00	−0.00
	(0.13)	(0.14)	(0.14)	(0.16)	(0.13)	(0.13)
First Stage						
IVΔ_e(employment rate)	0.47***	0.46***	0.46***	0.45***	0.45***	0.45***
	(0.04)	(0.04)	(0.04)	(0.05)	(0.05)	(0.05)
F-stat excluded instruments	131.22	116.48	112.45	74.33	72.24	71.30
Period FE	Y	Y	Y	Y	Y	Y
Area FE	Y	Y	Y	Y	Y	Y
Demographic controls	Y	Y	Y	Y	Y	Y
Human capital controls	N	Y	Y	N	Y	Y
Economic controls	N	N	Y	N	N	Y
Estimation method	IV	IV	IV	IV	IV	IV
Observations	1260	1260	1260	1160	1160	1160

Notes: The dependent variables are either the change in voting turnout (*Panel A*) or the change in the vote share of incumbent parties (*Panel B*) or the average change in the percentage of invalid ballots (*Panel C*) between two consecutive national *Camera dei Deputati* elections. Incumbents are defined as the main parties forming the initial governing coalition immediately after the national election (see Table 1). Standard errors in parentheses are clustered at the level of 605 local labour systems. *** p<0.01, ** p<0.05, * p<0.1.

orientation of regional governments modulates the impact of local economic conditions on Parliamentary election outcomes. While the national government is likely the primary target for economic accountability, suggesting the direction of effects might hold across subsamples, we hypothesise that the reaction to worsening labour market conditions - both in terms of higher local turnout and reduced national incumbent support - might be more pronounced in local systems within regions governed by opposition parties. In these settings, voters may more readily attribute economic difficulties to the national ruling parties or regional opposition leaders may be less inclined to buffer discontent. Conversely, in regions governed by parties aligned with the national incumbents, partisan loyalty or local mitigation efforts might soften

the electoral consequences of adverse employment dynamics. To test this possibility empirically, we split our sample into two groups: one including labour market areas belonging to regions governed by parties politically aligned with national incumbents and the other consisting of local systems in regions governed by opposition parties. We further exclude LMAs within the Trentino-Alto Adige region due to its unique constitutional structure and political landscape, which complicate straightforward classification based on regional-national political alignment.[7] We then re-estimate our main instrumental variable models for both turnout and incumbent vote share within each subsample.

Table 6 documents the estimated impact of local employment dynamics on electoral participation (Panel (A)) and incumbent support (Panel (B)) in both groups of labour market areas for our richer specification, controlling for demographic, human capital and economic characteristics.

We begin our heterogeneity analysis with the subsample of 1082 observations corresponding to those local systems within regions governed by parties not aligned with national incumbents (column (2)). In this group, first-stage F-statistic is equal to 213.62 confirming the strong relevance of our shift-share instrument despite the reduced sample size. Second-stage estimates suggest that a 1 p.p. decrease in local employment increases voting turnout by 0.94 p.p. and reduces incumbent support by 1.35 p.p.. Both coefficients are statistically significant at 1% level. Notably, while both effects have the same sign as the corresponding full-sample estimates (column (1)), they are larger in magnitude, as hypothesised. Next, we turn to the subsample of 1234 observations from local systems in regions governed by parties politically aligned with national incumbents (column (3)). First-stage F-statistic is slightly lower, at 109.41, but it remains well-above conventional thresholds. Our estimates indicate that a 1 p.p. decline in local employment increases participation by 0.61 p.p. and decreases the incumbent vote share by 0.90 p.p., with both results significant at the 1% level. In this group, both the positive effect on turnout and the negative impact on incumbent support is attenuated relative to both the non-aligned subsample and the full-sample estimates, which is consistent with the idea that political alignment may buffer voter reaction. All in all, the results indicate that the main effects of worsening local employment dynamics are robust across both subsamples, with sign and statistical significance maintained throughout. This evidence

[7] Primary administrative and political powers reside not with the region, but with the highly autonomous provinces of Trento and Bolzano. These provinces feature strong local parties (e.g., Südtiroler Volkspartei) whose political strategies are heavily influenced by specific local concerns and that often operate independently of national coalition logic.

Table 6: Local alignment and economic voting

	Full sample **(1)**	Politically non-aligned LMAs **(2)**	Politically aligned LMAs **(3)**
A. Voting turnout			
Δ_e(employment rate)	-0.71^{***}	-0.94^{***}	-0.61^{***}
	(0.14)	(0.21)	(0.19)
B. Support for the incumbents			
Δ_e(employment rate)	0.92^{***}	1.35^{***}	0.90^{***}
	(0.21)	(0.33)	(0.25)
First Stage			
IVΔ_e(employment rate)	0.65^{***}	0.67^{***}	0.60^{***}
	(0.04)	(0.05)	(0.06)
F-stat excluded instruments	288.68	213.62	109.41
Period FE	Y	Y	Y
Area FE	Y	Y	Y
Demographic controls	Y	Y	Y
Human capital controls	Y	Y	Y
Economic controls	Y	Y	Y
Estimation method	IV	IV	IV
Observations	2316	1082	1234

Notes: The dependent variables are either the change in voting turnout (*Panel A*) or the change in the vote share of incumbent parties (*Panel B*) between two consecutive national *Camera dei Deputati* elections. Incumbents are defined as the main parties forming the initial governing coalition immediately after the national election (see Table 1). Standard errors in parentheses are clustered at the level of 579 local labour systems.
*** p<0.01, ** p<0.05, * p<0.1.

suggests that national accountability for economic performance largely dominates the electoral response, with local political alignment moderating at most, rather than determining, the magnitude of such responses. In other words, while local political factors may still modulate the intensity with which voters react to negative local economic shocks, they seem to be not the primary determinant of economic voting.

4.3 Robustness checks

Senato della Repubblica elections. Our main analysis focuses on elections for the *Camera dei Deputati*, Italy's lower legislative house, primarily because its electorate historically encompassed all adult citizens, thus capturing the broadest possible voter response. However, the Italian Parliament operates under a principle of perfect bicameralism: the upper house, the *Senato della Repubblica*, shares identical legislative

functions with the Camera, making its electoral outcomes a relevant benchmark for robustness. While functionally equivalent in legislative power, the two houses have traditionally differed in composition and, crucially, their electoral base. Prior to recent reforms, the *Camera* comprised 630 deputies (minimum age 25) elected by citizens aged 18 and over, whereas the *Senato* included 315 elected senators (minimum age 40) chosen only by citizens aged 25 and older, alongside a small number of appointed life senators.[8] The exclusion of younger voters (18-24) from the *Senato* franchise for most of the period under investigation provides a valuable test of whether our findings hold across different segments of the electorate.
Table 7 shows IV estimates of the effects of local employment dynamics on changes in voting turnout and incumbent parties support across consecutive *Senato della Repubblica* elections.

Minor differences in first-stage F-statistics compared to the baseline *Camera* analysis arise simply because LMAs within Trentino-Alto Adige ($N = 26$) are excluded when analysing *Senato* elections, due to the region's distinct electoral system for the upper house.[9] Importantly, the instrument remains strong in these specifications. Across all control variable combinations, the estimated impact of labour market dynamics on both participation (Panel A) and former election winners support (Panel B) remains highly significant (at the 1% level) and the point estimates are quantitatively very close to those obtained using *Camera* data. Specifically, a 1 p.p. decrease in local employment is associated with an increase in voting turnout ranging from 0.73 to 0.79 p.p., comfortably encompassing our baseline *Camera* estimates (Table 2). Moving to incumbent vote share, worsening local labour market conditions leads to an estimated decrease ranging from 0.79 to 0.91 p.p.. These estimates are again highly significant and quantitatively similar to, slightly larger in magnitude than, the main lower house evidence (Table 3). All in all, this robustness check demonstrates that our main findings do not depend critically on the choice of a specific Parliamentary chamber.

Alternative definition of 2008 ***incumbents.*** We conduct a final robustness check concerning the definition of the incumbent vote share specifically for the 2008 election. Defining the incumbent bloc

[8] Recent constitutional reforms, namely Laws No. 1/2020 and No. 1/2021, effective from the 2022 general election, have reduced Parliamentary size to 400 deputies and 200 senators and aligned the minimum voting age at 18 for both houses.

[9] We exclude labour market areas located in Trentino-Alto Adige because the autonomous region adopts single-member constituencies in *Senato della Repubblica* elections. These local electoral colleges tend to be less representative of the national party structure compared to the multi-member constituencies used in the rest of the Italian regions (with the exception of Valle D'Aosta, which applies a single-member colleges system for both houses of Parliament).

Table 7: Local employment and electoral behaviour (*Senato della Repubblica*)

	(1)	(2)	(3)
A. Voting turnout			
Δ_e(employment rate)	−0.79***	−0.75***	−0.73***
	(0.14)	(0.14)	(0.14)
B. Support for the incumbents			
Δ_e(employment rate)	0.79***	0.87***	0.91***
	(0.23)	(0.22)	(0.22)
First Stage			
IVΔ_e(employment rate)	0.66***	0.65***	0.65***
	(0.04)	(0.04)	(0.04)
F-stat excluded instruments	316.48	301.54	288.68
Period FE	Y	Y	Y
Area FE	Y	Y	Y
Demographic controls	Y	Y	Y
Human capital controls	N	Y	Y
Economic controls	N	N	Y
Estimation method	IV	IV	IV
Observations	2316	2316	2316

Notes: The dependent variables are either the change in voting turnout (*Panel A*) or the average change in the vote share of incumbent parties (*Panel B*) between two consecutive *Senato della Repubblica* elections. Incumbents are defined as the main parties forming the initial governing coalition immediately after the national elections (see table 1). Standard errors in parentheses are clustered at the level of 579 local labour systems.
*** p<0.01, ** p<0.05, * p<0.1.

precisely can be complex with multi-party coalitions. While the definition arguably simplified to two main political forces in subsequent elections (due to partner dominance or party dissolution), the outgoing 2006 – 2008 centre-left government involved three significant entities: the leading coalition (*L'Ulivo*, later *Partito Democratico*, *PD*) alongside *Rifondazione Comunista* (contesting 2008 as *La Sinistra l'Arcobaleno*) and *Di Pietro Italia dei Valori* (*IdV*). Our baseline analysis summed the vote shares of all three. To ensure our findings are not sensitive to this specific aggregation, we re-estimate the incumbent support models using two alternative definitions for the 2008 component of the dependent variable: first, the combined share of PD and *Sinistra l'Arcobaleno*, and second, the combined share of *PD* and *IdV*.

Table 8 presents the IV estimates using these alternative definitions. The results demonstrate clear con-

sistency: the estimated coefficients for the impact of a 1 p.p. decline in the local employment rate remain negative, statistically significant, and quantitatively very similar to our main findings across all standard model specifications. This confirms that our core conclusions regarding incumbent accountability are robust to the precise definition of the multi-party incumbent bloc preceding the 2008 election.

Table 8: Local employment and support for the incumbents

	Partito Democratico + La Sinistra l'Arcobaleno			*Partito Democratico + Di Pietro Italia dei Valori*		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Δ(employment rate)	0.75***	0.83***	0.84***	0.62***	0.72***	0.71***
	(0.22)	(0.22)	(0.22)	(0.22)	(0.22)	(0.22)
First Stage						
IVΔ(employment rate)	0.65***	0.65***	0.64***	0.65***	0.65***	0.64***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
F-stat excluded instruments	338.97	318.74	307.94	338.97	318.74	307.94
Period FE	Y	Y	Y	Y	Y	Y
Area FE	Y	Y	Y	Y	Y	Y
Demographic controls	Y	Y	Y	Y	Y	Y
Human capital controls	N	Y	Y	N	Y	Y
Economic controls	N	N	Y	N	N	Y
Estimation method	IV	IV	IV	IV	IV	IV
Observations	2420	2420	2420	2420	2420	2420

Notes: The dependent variable is the change in the vote share of incumbent parties between two consecutive *Camera dei Deputati* elections. Incumbents are conventionally defined (see Table 1), except for the initial governing coalition following 2006 election. Specifically, we alternatively consider incumbents in 2008 election the *Partito Democratico* (the political successor of the leading 2006 governing coalition *L'Ulivo*) plus one of the two supporters, i.e., *La Sinistra l'Arcobaleno* (ex-*Rifondazione Comunista*) or *Di Pietro l'Italia dei valori*. Standard errors in parentheses are clustered at the level of 605 local labour systems. *** p<0.01, ** p<0.05, * p<0.1.

5 Concluding remarks

Over the past few decades, the influence of ideological and cultural factors on electoral decisions has arguably weakened. Concurrently, concerns about economic and social hardship have remained central to voting behaviour. This has prompted a growing body of interdisciplinary research into the relationship between socio-economic conditions and political preferences, with a particular focus on the electoral

implications of labour market dynamics. Nevertheless, as discussed earlier, the precise interplay between economic conditions, voting participation and incumbent evaluation remains an open question.

In this paper, by using Italian labour market area-level data and a shift-share instrumental variable identification strategy to deal with well-know endogeneity issues, particularly omitted variable bias and classical measurement error, we have primarily aimed to estimate the causal impact of local employment dynamics on both voter participation and incumbent electoral evaluation over the last four national elections (2008, 2013, 2018 and 2022). The causal analysis of these traditional economic voting relationships has been enhanced by investigating three further aspects: the mediating role of turnout, the potential for asymmetric protest responses, and heterogeneity based on political alignment.

Our results can be summarised as follows. In our preferred specification, accounting for demographic, human capital and economic characteristics of the local labour systems, alongside spatial and period fixed effects, we find that a 1 p.p. decline in the LMA employment rate causes a statistically significant 0.76 p.p. increase in voter turnout and a 0.80 p.p. decrease in incumbent support. These magnitudes are not negligible: a one standard deviation drop in the employment rate change (1.82 p.p.) implies a 1.38 p.p. rise in participation (nearly one-third of its s.d.) and a 1.46 p.p. fall in incumbent vote share (about one-eighth of its s.d.). Furthermore, we connect these findings by exploring turnout's mediating role. We provide, to our knowledge, the first empirical estimate of this *participation channel*, finding higher turnout mediates approximately one-fourth of the total estimated effect of employment shocks on incumbent evaluation in our context. This indirect pathway hints at protest mobilization. We directly test this protest interpretation by examining asymmetric effects. Our analysis reveals that the electoral reaction is concentrated almost entirely in areas actually experiencing employment declines: here, a 1 p.p. employment drop leads to significantly heightened participation (1.74 p.p.), strongly reduced incumbent support (-0.86 p.p.), and increased invalid voting (0.24 p.p.), while LMAs with improving employment show no significant effects. This stark asymmetry provides compelling evidence for a *protest voting* perspective of economic voting. Finally, exploring heterogeneity based on regional-national political alignment, we find that while alignment modestly modulates the intensity of voter responses, the

core effects persist across both aligned and non-aligned regions. This suggests national accountability for economic performance largely dominates the electoral response.

In conclusion, our findings highlight the relevance of local labour market dynamics in shaping the electoral behaviour of the population and suggest several directions for future research. First, replicating our shift-share IV strategy in different national contexts or for distinct sub-national elections could test the generalisability of these economic voting effects and explore potentially unique local mechanisms, such as those related to candidate proximity or local service provision. Second, while our results provide suggestive evidence for the *participation channel*, its precise causal weight warrants investigation using methods robust to potential mediator endogeneity; individual-level panel data seem particularly promising for revealing compositional shifts in the electorate that aggregate data cannot fully capture. Third, the strong evidence for asymmetric electoral responses invites deeper exploration into its nuances – for instance, analysing whether negative shocks disproportionately benefit specific types of opposition parties or identifying potential economic thresholds that trigger stronger protest reactions. Understanding the complex linkages between localised economic realities, voter participation, political protest, and electoral accountability remains critical for evaluating the health and responsiveness of democratic systems.

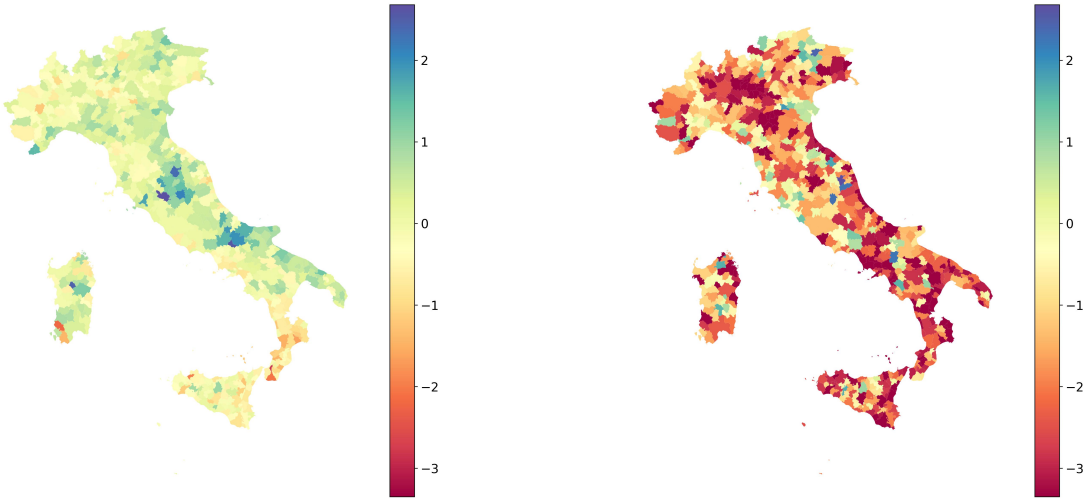
Appendix A Descriptive statistics

Table 9: Descriptive statistics

Variable	Definition	Unit	Years	Mean	Sd	Min	Max
Dependent variables:							
Δ_e(Participation rate)	Change in voters/potential voters	p.p.	2008-2022	-5.2	4.6	-27.4	18.6
Δ_e(Incumbents share)	Change in incumbents share	p.p.	2008-2022	-14.3	11.2	-45.1	14.3
Δ_e(Invalid ballots share)	Change in invalid ballots share	p.p.	2008-2022	0.5	1.9	-6.1	15.3
Key regressor:							
Δ_e(Employment rate)	Change in employees/labour force	p.p.	2008-2022	-0.2	1.8	-7.2	9.1
Instrumental variable:							
IV Δ_e(Employment rate)	Change in employees / labour force	p.p.	2008-2022	-0.2	1.6	-7.6	7.1
Controls:							
Female unemployment rate	Unemployed female / female labour force	%	2001, 2011	16.4	10.2	1.9	53.7
Old-age dependency ratio	Population >65 / working age population	%	2001, 2011	32.4	6.9	16.0	60.2
Population	Residents	k	2001, 2011	96.0	253.7	3.0	3685.1
Population density	Population per square km	units	2001, 2011	203.2	288.6	10.3	3106.5
Share of middle school graduates	Adults with middle school education / total population	%	2001, 2011	28.8	3.0	20.2	40.6
Share of non-residential buildings	"Productive" buildings / total number of buildings	%	2001, 2011	8.1	3.3	1.3	26.8
Vulnerability index	Social and material vulnerability score	units	2001, 2011	99.3	1.7	96.1	106.6

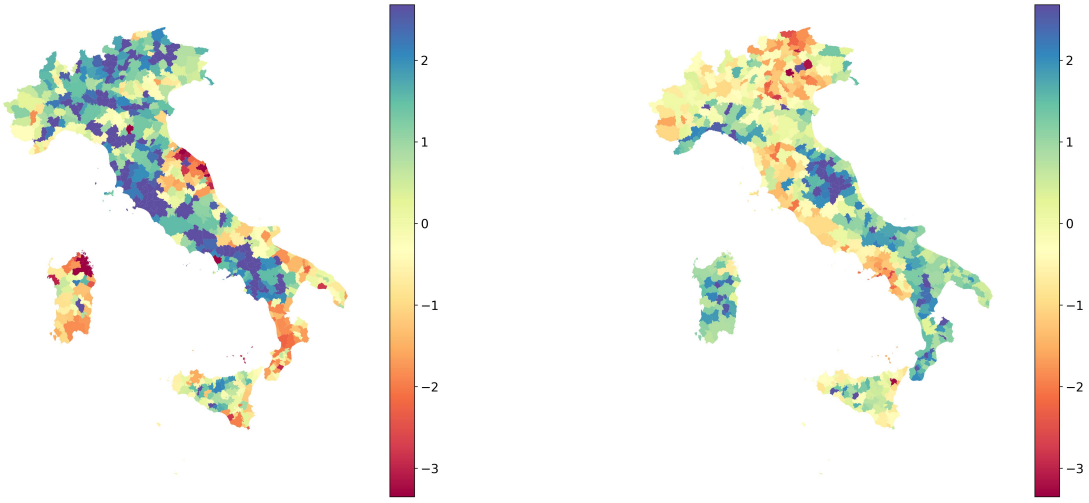
Notes: Averages across labour market areas, differences are taken between two consecutive national elections. Electoral outcomes descriptive statistics refer to *Camera dei Deputati* rounds of voting.

Appendix B LMA employment rate inter-election dynamics



(a) 2008

(b) 2013



(c) 2018

(d) 2022

Figure 3: LMA changes in employment rate across consecutive elections.

Notes: Colour scales are based on the overall distribution of changes in employment across elections and are winsorized at the 5th and 95th percentile.

References

Algan, Y., S. Guriev, E. Papaioannou, and E. Passari (2017). The european trust crisis and the rise of populism. *Brookings papers on economic activity 2017*(2), 309–400.

Amin, S., M. Korhonen, and S. Huikari (2023). Unemployment and mental health: An instrumental variable analysis using municipal-level data for finland for 2002–2019. *Social Indicators Research 166*(3), 627–643.

Arceneaux, K. (2003). The conditional impact of blame attribution on the relationship between economic adversity and turnout. *Political Research Quarterly 56*(1), 67–75.

Azzollini, L. (2021). The scar effects of unemployment on electoral participation: withdrawal and mobilization across european societies. *European Sociological Review 37*(6), 1007–1026.

Baron, R. M. and D. A. Kenny (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology 51*(6), 1173.

Barone, G. and H. Kreuter (2021). Low-wage import competition and populist backlash: The case of italy. *European Journal of Political Economy 67*, 101970.

Bartels, L. M. (2014). Ideology and retrospection in electoral responses to the great recession. *Mass politics in tough times: Opinions, votes and protest in the great recession*, 185–223.

Bartik, T. J. (1991). Who benefits from state and local economic development policies?

Becker, S. O., T. Fetzer, and D. Novy (2017). Who voted for brexit? a comprehensive district-level analysis. *Economic Policy 32*(92), 601–650.

Blanchard, O. and L. Katz (1992). Regional evolutions. *Brookings Papers on Economic Activity 23*(1), 1–76.

Bloise, F., D. Chironi, and M. Pianta (2021). Inequality and voting in italy's regions. *Territory, Politics, Governance 9*(3), 365–390.

Borusyak, K., P. Hull, and X. Jaravel (2022). Quasi-experimental shift-share research designs. *The Review of economic studies 89*(1), 181–213.

Borusyak, K., P. Hull, and X. Jaravel (2025). A practical guide to shift-share instruments. *Journal of Economic Perspectives 39*(1), 181–204.

Burden, B. C. and A. Wichowsky (2014). Economic discontent as a mobilizer: unemployment and voter turnout. *The Journal of Politics 76*(4), 887–898.

Charles, K. K. and M. Stephens Jr (2013). Employment, wages, and voter turnout. *American Economic Journal: Applied Economics 5*(4), 111–143.

Emmenegger, P., P. Marx, and D. Schraff (2015). Labour market disadvantage, political orientations and voting: how adverse labour market experiences translate into electoral behaviour. *Socio-Economic Review 13*(2), 189–213.

Emmenegger, P., P. Marx, and D. Schraff (2017). Off to a bad start: Unemployment and political interest during early adulthood. *The Journal of Politics 79*(1), 315–328.

Goldsmith-Pinkham, P., I. Sorkin, and H. Swift (2020). Bartik instruments: What, when, why, and how. *American Economic Review 110*(8), 2586–2624.

Gould, E. D., B. A. Weinberg, and D. B. Mustard (2002). Crime rates and local labor market opportunities in the united states: 1979–1997. *Review of Economics and statistics 84*(1), 45–61.

Guiso, L., H. Herrera, M. Morelli, T. Sonno, et al. ((2017)). *Demand and supply of populism*. Centre for Economic Policy Research London, UK.

Hernández, E. and H. Kriesi (2016). The electoral consequences of the financial and economic crisis in europe. *European journal of political research 55*(2), 203–224.

Key, V. O. (1966). *The responsible electorate: Rationality in presidential voting 1936–1960*. Harvard University Press.

Lechler, M. (2019). Employment shocks and anti-eu sentiment. *European Journal of Political Economy 59*, 266–295.

Lipset, S. M. et al. (1960). *Political man. The social bases of politics*, Volume 492. London.

Lipset, S. M. and S. Rokkan (1967). *Party systems and voter alignments: Cross-national perspectives*, Volume 7. New York: Free Press.

Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. Simon and schuster.

Radcliff, B. (1994). Reward without punishment: Economic conditions and the vote. *Political Research Quarterly 47*(3), 721–731.

Rodríguez-Pose, A. (2018). The revenge of the places that don't matter (and what to do about it). *Cambridge journal of regions, economy and society 11*(1), 189–209.

Rombi, S. and M. Valbruzzi (2024). Economic voting goes local: evidence from the italian regions. *Italian Political Science Review/Rivista Italiana di Scienza Politica 54*(1), 54–69.

Rosenstone, S. J. (1982). Economic adversity and voter turnout. *American Journal of Political Science*, 25–46.

Rosenstone, S. J. and J. M. Hansen (1993). Mobilization, participation, and democracy in america. *(No Title)*.

Staiger, D. O. and J. H. Stock (1994). Instrumental variables regression with weak instruments.

Wolfinger, R. E. and S. J. Rosenstone (1980). *Who votes?* Yale University Press.