

LOCAL ECONOMIC SHOCKS AND NATIONAL ELECTION OUTCOMES: EVIDENCE FROM HUNGARIAN ADMINISTRATIVE DATA

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Abstract

What are the consequences of unequal economic conditions on national election results? In this study, we use extraordinarily granular economic data measured without sampling error to assess how variation in local economic conditions across 3,152 settlements affects incumbent support across the two most recent Hungarian elections. In addition, we use 95 monthly surveys capturing vote intention for nearly 100,000 respondents to assess possible individual level mechanisms. We find that the local economic milieu has a substantial effect on incumbent support, and that this effect was especially pronounced in the 2010 election that coincided with the peak of the Great Recession. Our micro-level analyses support these findings and suggest that the effect of local unemployment is unlikely to be explained by an aggregation of dissatisfaction among the unemployed.

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Introduction

A large and rich literature on economic voting has shown that national economic conditions have a particularly strong effect on election outcomes (e.g., Kramer 1971; Duch and Stevenson 2008).¹² However, economic shocks are often distributed very unequally within countries and as a result may induce very different voting behavior. To this point, attempts to capture the effects of this local variation have been constrained by a lack of accurate economic data measured at the appropriate level of aggregation. In this paper we use extremely granular data on local unemployment matched to both administrative and survey-based data on incumbent support to quantify the political consequences of local economic conditions.

The repercussions of unequal economic performance are extremely relevant in the context of contemporary U.S. and European politics. In the United States, localities whose pre-crisis economy relied on housing or unskilled manufacturing faced far harsher downturns - and slower recoveries - than areas more focused on skilled labor or service provision (Shearer et al. 2016). In Europe, sub-national regions focused on agriculture and construction were disproportionately afflicted with high unemployment, even when compared to contiguous regions within the same country (Crescenzi et al. 2016 and

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²Data and replication code for this paper can be found here at the Journal's Dataverse site at [doi:10.7910/DVN/E4I6ZV](https://doi.org/10.7910/DVN/E4I6ZV).

Groot et al. 2011). More generally, economic downturns can create isolated pockets within countries whose economic woes outlast national recessions and whose political consequences are not well understood in the framework of an economic voting model.

Despite the importance of the effect of unequal economic health, and the continuing interest of scholars in economic voting, a general lack of granular data on economic conditions has made it difficult to evaluate these theories empirically. First, research on local economic conditions often defines “local” at levels of aggregation that are likely to be too large to provide plausible proxies for perceived local conditions (Bisgaard et al. 2016). Second, most studies proxy local economic conditions with unemployment rates estimated from surveys (e.g. Cho and Gimpel 2009, Hill et al. 2010) leading to attenuation bias due to sampling error plaguing survey-based estimates (Healy and Lenz 2017). Third, because these studies typically cover only a few national elections they fail to provide precise comparisons between the effects of local and national conditions.

In this study, we overcome these issues by exploiting data on local economic conditions that is in many ways superior to data used in existing research. Our analysis focuses on the two most recent general elections in Hungary and relies on settlement-level administrative unemployment data. This data is attractive for our purposes both because of its extremely low level of aggregation (the median settlement in our data set has less than 700 eligible

voters) and because - in contrast to most unemployment data observable at such a low level - it is measured without sampling error. In order to explore the political consequences of local unemployment, we match this data with official election returns at the same level of aggregation. Finally, to explore the mechanism through which local economic conditions operate, we also utilize a unique repeated cross-section survey dataset measuring the vote intentions of nearly 100,000 individuals across 95 months within the same two electoral cycles that our aggregate data covers.

Our findings show that local economic conditions have a strong effect on incumbent vote share, with localities that experience steeper increases or shallower decreases in unemployment punishing the party currently in power. These local effects were substantively large, not only during the Global Recession when economic concerns were at their height, but in the following electoral cycle when economic recovery was underway. We thus provide evidence that incumbents can suffer severe electoral penalties in places where economic recovery is slow, *even when* the national economy performs relatively well. The differential impact of local and national economic conditions may be especially important in countries where at least some of the representative body is elected at the local, rather than the national, level.

Local Economic Voting

While theories of retrospective economic voting extend at least as far back as Downs 1957 and Key 1966, the study of how an individual's *local* economic milieu might affect their perceptions of incumbent performance (and thus, electoral choices) has largely been concentrated in the last two decades. This can be at least partially attributed to the difficulty in collecting reliable measures of local economic conditions, though recent advances in both analytic techniques and record-keeping at lower levels of aggregation have obviated these concerns to some degree (Healy and Malhotra 2013).

The aggregate body of local economic voting research routinely finds correlations between support for incumbents and the relative economic health of localities, measured using characteristics like unemployment (Books and Prysby 1999, Ansolabehere et al. 2014, and Bisgaard et al. 2016) or the loan and housing markets (Reeves and Gimpel 2012 and Healy and Lenz 2017). The size of the localized effect in these works tends to be related to the level at which the scholar defines "locality." In general, effect sizes are small when the area comprehended as an individual's local economic environment is relatively large (Reeves and Gimpel 2012) but can be quite large when the local area is small (Healy and Lenz 2017). This pattern is consistent with recent evidence showing that individual perceptions about economic conditions are strongly related to actual local economic conditions in one's immediate surroundings but not to more aggregated measures (Bisgaard et al. 2016).

Three distinct explanations have been proposed for the apparent effect of local economic conditions. First, to the extent that economic voting reflects pocket-book considerations, incumbents will be less successful in places where voters on average have experienced more economic hardship. Second, even if economic voting is driven by sociotropic considerations (i.e. voters care about national economic conditions), the local economy might matter because citizens base their evaluations of the national economy on what they observe in their immediate surroundings (Bisgaard et al. 2016). Third, if voters use information about the economy to update their beliefs about how a possible change in government would effect their pocket-books in the future, economic conditions in ones close proximity might offer a more precise signal than the national economy (Linn and Nagler 2014).

All three mechanisms suggest that the importance of the local economy will depend crucially on the degree of heterogeneity in the way economic policies are expected to impact localities. At one extreme, if governments can only enact policies that affect different parts of a country the same way, local economic conditions should not matter much. Conversely, if governments can target localities with policies affecting economic outcomes, voters have a stronger motive to care about local outcomes. Of course, voters may fail to correctly attribute economic outcomes at the local level to the government and thus may reward or punish the incumbent for some local shock that is completely outside the governments control (Healy and Malhotra 2013).

Thus, the normative value of voters' reliance on local economic conditions is ambiguous.

Background

We focus our research on the last two national electoral cycles in Hungary, covering the period from 2006-2014. This allows us to measure localized economic voting during the incumbencies of two opposing party groups, as well as with and without the presence of a strong radical right party emphasizing socio-cultural concerns over the economic. In 2006, the Hungarian Socialist Party (MSZP) allied with the liberal Alliance of Free Democrats (SZDSZ) to overcome a strong challenge from rightist Fidesz and maintain their coalition government. In 2010, Fidesz capitalized on a failing economy and a scandal-ridden MSZP to take control, a leadership they held on to in 2014 amid economic recovery.³

The parties differ significantly on issues both economic and social in nature. Interestingly, the center-left MSZP has traditionally been a stronger supporter of free market reforms than its rival, with Fidesz more often appealing to interventionist economic policies. Social and cultural cleavages between the parties tend, however, to form along more traditional lines. Support for either party has vacillated over the post-Communist period, and at various

³Throughout, far-right Jobbik increased its own support on the back of a nationalist platform, rising from less than 2% in 2006 to 16.7% in 2010 and 20.2% in 2014.

times each party has appealed to different demographic groups, with a great deal of overlap. However, the geographic bases of support have remained largely steady, with Fidesz traditionally drawing voters from the western half of the country and MSZP holding electoral advantages in the central part of the country and in Budapest. By covering a period where each party spent time as an incumbent and as the main opposition party, we present a more robust test of localized economic voting.

Hungary presents other advantages for our research as well. Previous economic voting literature on Hungary suggests that the country's voters respond to economic conditions in ways very much like voters in longer-standing democracies (see, e.g. Anderson et al. 2003 and Duch 2001). Moreover, the measure we use here to proxy for economic conditions more broadly (unemployment rate) is found to have strongly predictive effects throughout the period (Fidrmuc 2000). Finally, the most recent research has found evidence for both egocentric and sociotropic voting (see, e.g. Stegmaier and Lewis-Beck 2011 and Lippényi et al. 2013), suggesting that analyses that are more fine-grained may be necessary to disentangle these effects.

Hungary's economic situation was also indicative of broader European trends during this period. The country's GDP growth roughly tracked the EU-27 average throughout the period, and Hungarian unemployment has generally been within 0.2% of the same average. With elections in 2010 and 2014, Hungary has experienced both an election after economic collapse and after

economic recovery,⁴ allowing us to test the economic voting theories under varying economic conditions while also feeling more confident when extending our findings to other contexts and countries.

While Hungary as a country was at the European average in economic performance, there was a great deal of variation within the country. While some settlements and regions were largely able to shield themselves from the brunt of the global financial crisis, others were decimated, seeing levels of unemployment rise well above 70% locally.⁵ These pockets of hard-hit settlements are distributed throughout the country, but are especially concentrated in the southwestern portion of the country electorally dominated by Fidesz and in some of the north-central areas that traditionally favored MSZP. This variation across both levels and geographies allows us to better measure the true local effect of economic upheaval on incumbent vote share.

Research design

Empirical strategy

Our empirical analyses leverage both temporal and spatial variation in economic conditions (as measured by unemployment) across two Hungarian election cycles. We assess the impact of local economic conditions first at the

⁴Hungary's real GDP decreased by over 6% in 2009, but had posted positive gains in 3 of the 4 years before the 2014 election.

⁵Summary statistics for Hungarian unemployment across settlements and time are available in Appendix A3.

aggregate level, comparing the electoral performance of incumbent parties in localities experiencing different local economic conditions. In particular, we use settlement-level administrative data on unemployment and election outcomes in the same localities to compare the performance of incumbent parties across settlements experiencing differential changes in unemployment across electoral cycles.

The use of aggregate data is appealing in that both unemployment and election outcomes are measured without sampling error. At the same time, it does not allow us to distinguish between several possible mechanisms that could lead to an aggregate-level relationship between local unemployment and election outcomes. First, such a relationship is consistent with voters rewarding and punishing incumbents, partly based on their performance in enhancing local economic conditions (Johnston et al. 2000, Elinder 2010). Second, the influence of local unemployment might be driven by a simple aggregation of pocketbook voting, with individuals losing their jobs deciding to vote against the incumbent.

Thus, in a second set of analyses we use repeated cross section survey data collected through the same two election cycles to assess the possible individual-level mechanisms. If changes in local unemployment shape vote intentions due only to the changing *personal* financial situations of survey respondents living in these settlements, we would expect that adjusting for individual differences across respondents should attenuate the relationship between local

unemployment and political preferences. If, however, the concerns of voters are more sociotropic in nature, and individual voters choose whether to support the incumbent due to the perceived economic performance in the locality, adjusting for individual-level covariates will not break the aggregate relationship between local unemployment and support.

Data

Unemployment: We rely on a panel dataset that reports the number of unemployed people registered in each settlement in Hungary by month, collected by the National Labor Office of Hungary. We calculate local unemployment rate as the ratio of the number of individuals registered as unemployed to the size of the working-age population.⁶

Election returns: In our first analysis, we use settlement-level election returns to estimate the relationship between local unemployment and the electoral success of incumbent parties. Our primary dependent variable is the vote share of the incumbent party at the level of settlements in the General Elections of 2006, 2010 and 2014.⁷ In the context of Hungary’s mixed electoral system, party lists (as opposed to single member district votes) are more suitable for our analysis as they are comparable across settlements (everyone

⁶Following the conventions of the Hungarian Central Statistical Office (HCSO), we use the number of permanent residents between the ages of 18 and 59 (provided on a yearly basis by the HCSO) as the working-age population.

⁷We obtained this data from GeoX Ltd, a company that scrapes the data from difficult-to-compile official sources and repackages the results in response to custom-made requests from private buyers.

votes for the same lists) and are less likely to be contaminated by strategic considerations.⁸

Vote intentions: In our individual level analysis, we utilize a super-survey containing about 100,000 face-to-face interviews conducted by TARKI, a major Hungarian polling firm.⁹ To construct this super-survey we merged the full population of the monthly surveys fielded by TARKI between 2006 and 2014, each containing roughly 1000 respondents.¹⁰

We measure support for the incumbent party based on survey responses to the following question: “If the general elections were held tomorrow, which party’s list would you vote for?”¹¹ We defined the variable *Incumbent Support* as an indicator variable taking the value of 1 if a respondent choose a party that was in government at the time of the interview. We merged the survey with our panel data on settlement level unemployment data based on

⁸While determining an “incumbent” may be difficult in some proportional systems with multiparty coalitions, the Hungarian elections under consideration allow for a straightforward coding. Before the 2006 election, the Socialists (MSZP) formed a coalition with the Liberals so that we code votes cast for these two parties as incumbent votes. In 2010, MSZP lost the election running as a single-party government. Finally, between 2010 and 2014, Fidesz governed in a coalition with the Christian Democrats, with the two parties running on a joint list in 2014.

⁹TARKI has conducted its monthly Omnibus surveys since the democratic transition in Hungary. They serve primarily commercial purposes, but almost all surveys include one question on vote intentions. Other political questions appear inconsistently across waves. They are included mostly when major international surveys (such as the European Values Survey, etc.) are fielded via TARKI.

¹⁰The Omnibus surveys use probability samples: each month a stratified random sample of settlements is drawn from the population of cities and settlements in Hungary. This randomization is constrained such that settlements with populations higher than 78,000 are always selected. Then, a target number of interviews in each settlement are calculated to match the proportion of the adult population living in those places. Finally, respondents are selected in the sampled settlements via random walk. Responses are post-stratified on gender, age and education categories, as well as settlement type, to match population cells as calculated from the census.

¹¹Respondents were given a card with a list of the main parties and were asked to choose among them. The set of parties on the cards changed but that did not affect our ability to code each respondent as either a supporter or a non-supporter of the incumbent party.

the month and locality at which the interview was conducted. We provide descriptive statistics of all variables in the Online Appendix.

Results

We present our aggregate level results in Table 1, based on regressions that predict the vote share of the incumbent party with change in local unemployment compared to the previous election.¹² As baseline support for the incumbent party could vary across settlements in a given election, we control for the incumbent party's vote share in the settlement in the previous cycle (Healy and Lenz 2017). Moreover, because both baseline support for the incumbent and the weight voters attach to the local economy could vary across elections, we estimate separate models for 2010 and 2014.

The first concern is directly implicated in Hungary, where a scandal rocked the Socialist Party (greatly decreasing support for non-economic reasons) in the period between the 2006 and 2010 elections, while Fidesz faced no similar shock between 2010 and 2014. The second concern recognizes that election cycles are dominated by different issues, and that economic voting (at both the local or national level) should be mitigated by how salient economic issues are in that particular cycle. In the Hungarian case, the 2010 election occurred at the height of the Great Recession, with deep concern over how

¹²Specifically, we use the level of local unemployment reported for the month of the election. This is the most accurate economic context in which to place voters - the immediate situation at the time they cast their ballot.

the country might recover. By 2014, economic recovery had begun in earnest, and focus had shifted to the right wing government's controversial changes to the country's constitution.¹³

Our analyses are conducted at the settlement-level, where we weight observations by their proportion of the total population. The effect we are capturing is one that occurs at the individual level, but is only observed in aggregate. Thus, it is appropriate to weight by the proportion of the total population that each settlement represents.¹⁴

The first column reports our findings for the 2006-2010 cycle. Our point estimate implies that a 4% increase in local unemployment (the median value for that cycle) was expected to reduce the vote share of the then incumbent Hungarian Socialist Party by about 3%. The second columns shows that the effect of local unemployment was less pronounced in the 2014 elections, roughly coinciding with the start of economic recovery. Here, the median settlement experienced a a 5% *reduction* in local unemployment, which we expect to result in a increase of approximately 0.9% in the performance of the incumbent Fidesz. Taken together, these results show both that local

¹³While these changes altered the number of seats in the National Assembly, the turnout requirements for a valid election, and various electoral thresholds for the 2014 election, they did *not* affect the incentives for individual voters in a particular settlement. Voters would still be incentivized to cast their ballot for their preferred party; the changes were to how these votes would be translated into seats.

¹⁴We present unweighted estimates in Table B1 in the Online Appendix, which appear substantively similar. In our analysis of possible heterogeneity across small and large settlements (suggested by an anonymous reviewer) we found that the effect were driven by large localities in the 2006-2010 cycle, and were relatively similar in the 210-14 cycle. We do not have a good explanation for this pattern, especially that large and small settlements differ from each other in a umber of important ways.

economic conditions can prove extremely consequential and that their effect is likely to be contingent on the electoral context.

In the present case, it seems intuitive that the effect of local unemployment was greater in 2010 than in 2014 because the issue of the economy was more salient. The difference in effect sizes may also be due to the ideological positions of the incumbents during the two cycles. As originally noted by Powell and Whitten, left-leaning parties are punished more for economic struggles related to unemployment (Powell and Whitten 1993). Our findings here are consistent with this theory, as we observe that MSZP (a party of the left) is more harshly punished for relatively high unemployment than is rightist Fidesz. While either, or both, of the proffered explanations may be at work, we should note that our data does not allow us to adjudicate definitively between these conjectures, or other possible explanations.

Table 1: Local unemployment and incumbent support

	Dependent variable: Incumbent vote share (%)	
	(1)	(2)
Change in unemployment (%)	-0.741 [0.217]	-0.180 [0.036]
Incumbent vote share, lagged (%)	0.470 [0.020]	0.813 [0.017]
Observations	3,143	3,150
R-squared	0.473	0.790
Election cycle	2006-10	2010-14

Note: Estimates are from linear models. Robust standard errors in brackets. Settlements are weighted by their total population. See the main text for the construction of the variables.

We present the results of our individual level analysis in Table 2. We report regressions that predict a stated intention to vote for the incumbent with current unemployment in the settlement of the survey respondent. For the same reasons as described above, we present separate estimates for the two election-cycles and include settlement-fixed effects to absorb time-invariant factors that explain support for a particular party. Moreover, we also adjust for the national support of the incumbent party in each month to adjust our estimates for time-varying national factors that might impact vote intentions. In each specification, we use post-stratification weights to restore the representativeness of our samples.

The first two columns predict support for the incumbent party by local unemployment; that is, the proportion of individuals looking for jobs in the month and settlement in which the interview took place. In this specification, the effect of local unemployment is similar to what our aggregate level analysis suggested, though less precisely estimated¹⁵. In columns 3 and 4, we add a control for individual unemployment status. If the effect of local unemployment on vote intentions simply reflect the aggregation of an individual level relationship between unemployment and anti-incumbent voting, we would expect the relationship to disappear once we control for individual employment status. While the effect sizes are somewhat attenuated when we control for an individual's employment status (particularly in the 2006-2010

¹⁵Note that while the sample size is larger for our analysis of survey data, we have less power to estimate the effect of local unemployment, because individuals from only about 60-80 settlements are surveyed in each month.

estimation), they remain substantively large and consistent with a localized economic voting that extends beyond an aggregation of grievances from the unemployed.

In columns 5 and 6, we present a final, possibly more direct piece of evidence for the effect of local economic conditions above and beyond concerns about one's own unemployment. Here, we restrict our sample to survey respondents who were employed at the time of the interview. If local unemployment reduced vote intentions for the incumbent due only to unemployed people turning away from the incumbent in these places, we would expect that the effect should disappear among people who *were* employed when they were interviewed. Again, our point estimates remain similar when we restrict our sample in this way (though less precisely estimated due to the reduced sample size). Taken together, these results suggest that local economic conditions affect vote choice across a wider range of the population than merely the unemployed. As a whole, our analyses paint a picture whereby voters care deeply not only about the state of the national economy, but also about that of their local economy. We discuss the importance of this finding in the conclusion below.

Table 2: Local unemployment and incumbent support

	Dependent variable: Respondent intends to vote for incumbent					
	(1)	(2)	(3)	(4)	(5)	(6)
Local unemployment	-0.557	-0.472	-0.308	-0.463	-0.595	-0.330
	[0.283]	[0.354]	[0.285]	[0.352]	[0.420]	[0.511]
Observations	25,389	24,414	24,974	24,187	12,591	12,156
R-squared	0.089	0.125	0.125	0.126	0.098	0.146
Election cycle	2006-10	2010-14	2006-10	2010-14	2006-10	2010-14
Employment status	-	-	Adjusted	Adjusted	Employed only	Employed only

Note: Estimates are from linear models. Standard errors in brackets are clustered at the settlement level. Each regression includes settlement fixed effects and controls for average support for the incumbent party in a given wave. See the main text for the construction of the variables.

Conclusion

This paper has provided clear evidence of the influence of local economic conditions on national election outcomes. Matching administrative data on local unemployment to both disaggregated vote returns across two national election cycles and an exceptionally large super-survey of vote intentions covering the same period, we demonstrated the importance of local economic distress. These findings underscore the importance of recent evidence showing a link between local economic conditions and evaluations of the national economy (Ansolabehere et al. 2014, Bisgaard et al. 2016). Moreover, they highlight the importance of using granular and high quality data to reduce attenuation bias in estimates of the impact of local economic conditions.

A key implication of our results to the broader study of economic voting is that the spatial distribution of economic conditions can counteract national trends in influencing election outcomes. This can help explain situations where incumbents seemingly under-perform given largely positive national growth, especially in electoral systems in which legislatures are at least partly elected by local constituencies. In these cases, the electoral fortunes of incumbent parties could be vulnerable not only to the overall performance of the economy but also the spatial distribution of growth.

Of course the evidence that local economic conditions do matter raises a possibly even more interesting normative question: to what extent should the local economy matter? In Hungary, the national government delegates very little power to regions or municipalities and thus the immense variation in local unemployment can be at least partially attributed to government policies that have prioritized some regions over others. Most importantly, central governments have enjoyed an enormous latitude in distributing structural funds received from the European Union and these funds are often spent on projects creating local jobs (Muraközy and Telegdy 2016). Against this backdrop, the sensitivity of voters to local economic conditions is beneficial as it can prevent government leaving behind poorer regions. However, it can also create opportunities for incumbents to strategically target transfers to areas where it can accept greater electoral support.

In other institutional settings, the normative implications of our findings can

be even more ambiguous. In more decentralized settings, voters may find it harder to apportion reward or blame for local economic conditions. In particular, in federalist systems voters need to correctly attribute the effects of policies enacted at different levels (see, e.g., Arceneaux 2006). When voters punish politicians for the outcomes of policy decisions over which they had no control, voters can encourage not only decreased effort among politicians most likely to be blamed, but also riskier behavior on those that *do* control the decision (Sances 2017). Future research should investigate how the impact of local economic conditions vary across institutional settings and explore the implications of possible differences on the incentives faced by incumbents in promoting equal economic growth.

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