Decentralized but Dependent: Clientelism through Workfare*

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Abstract

This paper examines how discretionary transfers foster clientelism, focusing on the decentralized distribution of public work programs in Hungary after a 2011 welfare reform. We develop a model in which the central government allocates resources to municipalities contingent on political support, while local elected officials, motivated by re-election concerns, broker votes in exchange for public work funding. Using a difference-in-differences design, we find that workfare programs significantly increased support for both the incumbent party and local mayors. We further show that conditioning public work funding on national election outcomes is central to sustaining clientelistic relationships between central and local governments.

JEL codes: D72, H77, I38, J68

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1 Introduction

Decentralization is often expected to strengthen democratic accountability by bringing politicians closer to citizens and making them more responsive to local needs. In practice, however, local governments frequently lack the administrative capacity and fiscal resources to govern independently. Because their budgets rely heavily on transfers from the central state, they carry responsibility without full control. As shown in Figure 1, fiscal dependence on the central government is widespread across countries and especially severe in less developed economies. This vertical imbalance—local accountability paired with fiscal dependence—is a well-documented feature of decentralized systems (Bardhan, 2002).

This dependence creates a structural tension: local officials are accountable to voters for their performance, yet the resources they administer remain under the control of the central government. When institutional checks are weak, central government~~national elites~~ can exploit this imbalance by tying fiscal transfers to electoral support, using them as instruments of clientelism—the *conditional* exchange of benefits for political loyalty. These strategies are most effective when transfers are discretionary, enabling rewards for loyal communities and sanctions for those that support other parties. Local officials become ~~crucial~~ key intermediaries: their proximity to voters allows them to mobilize support, yet their reliance on central funds limits their autonomy. In such settings, local officials can end up answering more to the central government than to their own voters, making decentralization a source of dependence rather than empowerment. The result is a system of vertical clientelistic relationships that remains underexplored.

This paper explores how central governments exploit discretionary transfers in decentralized systems to gain electoral advantage. We develop a theoretical model and present empirical evidence from Hungary showing that clientelistic networks are the mechanism through which voting behavior is influenced. In the model, the government allocates workfare resources across municipalities and *delivery routes*: workfare is either given out by mayors or by a state agency. Mayors can condition voters' access to workfare on political support, while the state agencies cannot.

We test these predictions in the context of Hungary's workfare reform, which expanded public employment while reducing social assistance and made welfare largely a mayor-administered program. Exploiting the reform in a difference-in-differences framework, we show that workfare increased political support for both the incumbent national party and local mayors. Consistent with the model, these effects vanish when programs are not administered locally, and national ~~incumbents~~government rewarded or punished municipalities based on electoral performance—even when mayors were co-partisans—underscoring the dependence of funding on electoral outcomes.

To organize our empirical analysis, we develop a simple microfounded model of workfare and electoral incentives in a two-town setting. A national incumbent allocates a fixed number

of workfare jobs across towns and chooses how many of these jobs are routed through the local mayor versus delivered directly through a state-owned enterprise (SOE). Voters derive a positive reciprocity benefit from receiving workfare, so both mayor-routed and SOE-routed jobs can raise support for the incumbent. The key difference is that mayors can additionally *mobilize* (or discipline) mayor-routed recipients by exerting hidden effort: if they cooperate, they can probabilistically identify non-compliant recipients and threaten job loss, which increases the recipients' incentives to vote for the incumbent. This mobilization capacity is limited: the effectiveness of catching and disciplining voters declines with the number of recipients under mayoral control (a "degrading" catching technology), capturing capacity constraints in administering large workfare programs. The national government cannot observe mayoral effort directly and instead uses an electoral target rule: if the government's vote share in a town falls below a target, the mayor loses control over workfare before the subsequent local election. Solving the game by backward induction yields transparent testable implications: (i) SOE workfare is sustained even when a mayor does not cooperate (because reciprocity still generates votes), (ii) the electoral impact of workfare is weaker without mayoral cooperation (because only reciprocity remains), and (iii) mayors are more likely to cooperate when their local race is tight (since the value of retaining control over workfare for the local election is higher). We relegate the formal model to the appendix and use these implications to guide our empirical tests.

The challenge for the central government is how to induce mayors to exert vote-brokering efforts in national elections, since such efforts are costly to mayors and imperfectly observable by the central government. To align incentives, the government conditions future workfare allocations on observed national electoral performance. If the government's electoral support is strong enough to be interpreted as evidence of mayoral cooperation, allocations are released ahead of the next local election. If support falls short, quotas are reduced. Discretion makes both the promise of reward and the threat of punishment credible, sustaining the clientelistic exchange. By contrast, under rule-based (formula) funding, allocations are automatic and non-contingent, leaving the central government unable to sanction underperforming mayors and giving mayors little reason to mobilize votes on its behalf.

We test these predictions by exploiting a major labor code and welfare reform in Hungary, described in Section 3. After winning the 2010 election, the Fidesz government sharply reduced unemployment benefits and curtailed other social transfers, while simultaneously expanding funding for public work programs. Responsibility for these programs, including participant selection, was delegated in large part to mayors, who are predominantly independents rather than copartisans of the central government, making public work the dominant form of state assistance and effectively transforming it into a workfare system. The program was further scaled up between October 2013 and April 2014, when national elections were held, with the number of public workers increasing by about 30 percent. The combination of mayoral discretion and rapid program expansion provides an ideal setting to test our model's predictions

on how discretionary transfers shape political support outside partisan alignment.

Section 4 describes the data sources and empirical strategy. We construct a municipality-level panel by combining administrative records on public work, unemployment, income, demographics, and election results. Workfare participation is measured as the share of public workers in the working-age population. Because the program was explicitly designed as a substitute for unemployment benefits, participation is systematically higher in municipalities with weaker local labor markets. To estimate the political effects of the program, we implement a difference-in-differences design that compares changes in electoral outcomes across municipalities with higher versus lower exposure to public work, before and after the reform.

We begin our empirical analysis in Section 5 by showing that workfare significantly increased support for the incumbent Fidesz in the 2014 national elections. A one percentage point increase in the share of public workers relative to the working-age population led to a 0.14 percentage point increase in Fidesz votes relative to the number of eligible voters. This increase in Fidesz support comes from both higher vote shares and higher voter turnout. Importantly, municipalities with high and low workfare participation did not display differential pre-trends in Fidesz support, lending credibility to the parallel trends assumption.

Public work also boosted the electoral fortunes of local incumbents. A one percentage point increase in workfare share raised support for mayors among eligible voters by 0.2 percentage points. Beyond vote totals, workfare contributed to the entrenchment of incumbents: higher workfare participation lowered mayoral turnover, helping local officeholders consolidate their position. Together, these results indicate that discretionary workfare programs reinforced incumbents at both national and local levels of government.

In Section 6, we provide evidence that clientelism is the primary mechanism behind the observed increase in political support associated with workfare. While public work participation may boost incumbents simply by delivering material benefits, the allocation patterns and electoral effects we document align closely with clientelistic exchange. To support this interpretation, we present three pieces of evidence.

First, we show that public work funding before mayoral elections depends explicitly on the government's political support in preceding national elections. Because mayors' vote-brokering efforts are not directly observable, the central government uses local electoral outcomes as a proxy for compliance. In line with the principal–agent logic of our model, municipalities where Fidesz underperformed subsequently received fewer workfare funds—particularly in programs under mayoral control— while allocations to state-owned enterprises (SOEs) remained stable.

Second, we show that the political effects of workfare depend on who controls access to jobs. The program operates in two forms that are identical in pay scale and eligibility rules but differ in discretion: some are managed by state-owned enterprises following bureaucratic procedures, while others are run by municipalities where mayors decide who participates. We find that only the mayor-managed programs increase support for incumbents at both the national and local level, whereas SOE-administered workfare has no measurable electoral effect. Because

this institutional division was determined by administrative rather than political criteria, it provides a direct test of conditionality—the idea that political support arises from the credible threat of losing access to those benefits.

Third, we examine heterogeneity in the political effects of public work. Consistent with our model, the electoral returns to workfare are stronger in municipalities where mayors face greater competition, where incumbents are less popular, and where poverty or unemployment heightens voter dependence. These patterns underscore that clientelistic exchange is most effective when brokers have both the incentive and capacity to mobilize votes, and are difficult to reconcile with a purely programmatic logic of redistribution.

Related literature This paper contributes to three strands of literature. First, it relates to work on decentralization and local governance. In many decentralized systems, local governments rely on intergovernmental grants to finance expenditures. Decentralization can improve targeting because local officials possess superior information on household needs (Alderman, 2002; Galasso and Ravallion, 2005; Alatas et al., 2012), and it may reduce corruption by increasing the visibility and accountability of officeholders (Fisman and Gatti, 2002). While centralized systems are often vulnerable to capture at the national level, decentralization opens new margins for capture at the local level—through elite capture, where powerful actors divert resources, and clientelism, where benefits are allocated in exchange for political support.[1] In particular, decentralization allows national politicians to exploit local officials for electoral gain by making intergovernmental transfers discretionary and conditional on political support.[2] Consistent with this view, local politicians are more likely to mobilize for their party in state elections when party leaders retain discretion over resource allocation (Bohlken, 2016); grants-financed decentralization can be used strategically for vote buying (Khemani, 2010); and central governments may manipulate intergovernmental transfers to favor aligned local politicians (Solé-Ollé and Sorribas-Navarro, 2008; Arulampalam et al., 2009; Corvalan et al., 2018). Strong national parties can also align local incentives by leveraging career concerns (Riker, 1964), while similar dynamics arise when local officials are centrally appointed and face career incentives to influence national elections (Martinez-Bravo, 2014). We contribute to this literature by showing that decentralizing workfare—while maintaining central control over funding—creates precisely the conditions under which conditional, discretionary transfers can be used to discipline local officials and sustain *vertical* clientelistic relationships between national and local politicians.

Second, this paper is closely related to the study of clientelism. Theoretical models emphasize that private transfers must be discretionary and conditional for clientelism to

[1] On elite capture, see Bardhan and Mookherjee (2000); Acemoglu (2006); Acemoglu et al. (2014). Alatas et al. (2019) argue that welfare consequences of elite capture appear small. For reviews of clientelism in decentralized states and the political economy of decentralization, see León and Wantchekon (2019) and Bardhan and Mookherjee (2006).

[2] Parties can rely on private brokers or on elected local officials; much of the literature emphasizes the former (Finan and Schechter, 2012; Larreguy, 2012; Vicente, 2014; Duarte et al., 2019).

be sustainable, since reversibility allows incumbents to credibly threaten punishment and enforce loyalty (Stokes, 2005; Bardhan and Mookherjee, 2012; Robinson and Verdier, 2013). A growing body of empirical work supports this view. Studies show that reducing voters' vulnerability (Bobonis et al., 2022) or introducing unconditional transfers that politicians cannot manipulate weakens incumbent support (Frey, 2019). Similarly, anti-poverty programs may reduce support for incumbents by providing financial independence that frees voters from transactional voting (Blattman et al., 2018).[3] In other institutional contexts, elites enforce loyalty through contingent provision of land, employment, or insurance (Baland and Robinson, 2008; Anderson et al., 2015). Relatedly, when brokers are easier to monitor, they exert greater effort (Larreguy et al., 2016; Larreguy, 2012). We contribute to this literature by providing direct evidence on the contingent nature of political transfers: Hungary's ruling Fidesz party strategically withdraws public work funding from municipalities where it performed poorly in national elections, thereby punishing non-cooperative mayors, irrespective of their political alignment.

Finally, this paper contributes to the literature on workfare. While workfare programs are implemented in many countries, they are especially prevalent in developing economies where reliable income data are often lacking (Banerjee et al., 2024). In such contexts, workfare functions as a self-targeting mechanism: low wages or physically demanding tasks discourage participation by those with better outside options (Besley and Coate, 1992). In contrast, advanced economies typically rely on means-tested or universal programs, where administrative data can determine eligibility. Existing research highlights workfare's role as a safety net and its broader economic effects, including impacts on employment, earnings, labor market spillovers, and poverty reduction (Azam, 2012; Bertrand et al., 2021; Murgai et al., 2016; Franklin et al., 2024; Muralidharan et al., 2023). At the same time, meta-analyses of active labor market policies show that direct job creation programs—under which workfare often falls—tend to have limited long-term effects on employment (Card et al., 2010; Kluve, 2010; Card et al., 2018). We complement this literature by emphasizing the political function of workfare. Even in middle-income countries with administrative capacity, its discretionary and conditional design allows governments to manipulate access for electoral gain. Our findings underscore that who controls access and how benefits can be withheld are central to workfare's political role, regardless of its economic performance.

Roadmap The paper is organized as follows. Section 2 develops the theoretical model. Section 3 describes the institutional background. Section 4 introduces the data and outlines the empirical strategy. Section 5 presents the main effects of workfare on national and local election outcomes. Section 6 examines the underlying mechanisms. Section 7 concludes.

[3] In other contexts, cash transfer programs can increase support for incumbents, see e.g. Manacorda et al. (2011); Pop-Eleches and Pop-Eleches (2012); Labonne (2013).

2 Conceptual framework

In Appendix B ~~of the Appendix~~, we develop a simple model illustrating how reversible and excludable transfers can affect electoral outcomes. Below we highlight the key features of the model and its predictions.

[4] (Lizzeri and Persico, 2004)

The model We develop a simple model to capture how the central government can use reversible and excludable transfers—specifically, a workfare program—to engage in clientelism in a decentralized political system. The model focuses on the strategic interaction between two layers of elected officials: the national government and local mayors. While the national government controls the allocation of workfare funds across municipalities, ~~local~~ mayors have discretion over which citizens gain access to the program. This institutional arrangement allows both levels of government to condition access to public resources on political loyalty, creating a two-tier clientelistic structure.

In the model, voters derive utility from a mix of public goods and private transfers. The workfare program represents a selective, excludable transfer: it provides income to participants, but access can be denied. The central government is interested in maximizing political support in national elections. However, it cannot directly monitor voters or credibly condition participation on political behavior at the individual level. It therefore delegates control to ~~local~~ mayors, who act as intermediaries.

Mayors also face electoral incentives, seeking reelection in local elections. They must decide whether to exert costly effort to broker votes for the national government by monitoring workfare recipients at national election. Because this brokering effort is unobservable to the central government, it cannot be directly contracted. Instead, the government adopts a contingent strategy: it rewards municipalities with favorable national electoral outcomes by increasing their public work funding prior to the subsequent local elections. Then, similarly to national elections, mayors can exert costly effort to translate these public work funding to votes. If support for the government falls below a threshold, funding is reduced. This dynamic creates an incentive-compatible arrangement: mayors who help deliver votes to the central government are rewarded with greater workfare funding, which they can then use to improve their own electoral prospects.

The credibility of this arrangement hinges on the excludability and reversibility of workfare. If the program is allocated automatically (such as unemployment benefit) or administered by entities not tied to local politics (e.g., state-owned enterprises), the ability to punish or reward disappears. Similarly, if voters believe their access to the program is unlinked to their political

[4] Lizzeri-Persico, 2004 „Indeed, the critical assumption required to derive the result of political capture of decentralization for greater clientelism at the expense of broad public goods, is that the pivotal swing voters in local jurisdictions provide strictly greater vote returns when allocated private transfers instead of broad public goods. Lizzeri and Persico (2004) use completely opposite assumptions, of the increasing value of the public good to pivotal voters, to explain the extension of suffrage by English elites in the mid-late 1800s."

behavior or mayoral favoritism, the disciplining mechanism collapses. Thus, the discretionary nature of the transfer is essential for sustaining the clientelistic equilibrium.

Predictions The main predictions of the model are the following.

3 Context

3.1 Political landscape

statistics on spending by municipalities as share of GDP

Political parties in Hungary are organized at the national level. Parliamentary elections consist of two components: a majoritarian part, where voters select individual candidates, and a proportional part, where they vote for party lists. The majoritarian system encourages strategic voting, particularly among supporters of smaller parties, who may back a more viable candidate rather than their preferred one. In contrast, list voting more directly reflects voters' partisan preferences. Because of this, we focus on party list votes, which provide a cleaner measure of political support and are less affected by coordination dynamics.

Since 1990, national elections have been held every four years in the spring. Panel A of Table 1 summarizes the results, showing that left-wing parties prevailed in 2002 and 2006, while the right-wing Fidesz party obtained majorities in 2010, 2014, 2018, and 2022. Despite securing only 43 to 54 percent of the national vote in these elections, Fidesz consistently won two-thirds of the seats in Parliament, enabling unilateral constitutional reform.[5] Voter turnout ranged from 60 to 70 percent, reaching a low of 61 percent in 2014.

At the local level, we focus on mayoral elections because mayors are the most powerful and visible political actors in Hungary's municipal governments. The country has a two-tiered electoral system: voters elect representatives directly only at the national and municipal levels. At the local level, both mayors and municipal council members are elected, but mayors lead the administration and hold executive authority. Compared to council members, they have greater control over policy implementation.

While redistributive policy in Hungary is largely centralized, its implementation often involves local actors. Until 2010, municipalities played a central role in delivering public services. Central government funding for these services was allocated according to formulas based on indicators such as the number and composition of students in the public education system. However, municipalities had limited authority to raise revenue through local taxes, and

[5]Following its 2010 victory, the party implemented a new constitution and redesigned the electoral system without opposition support. These changes reduced proportionality by expanding the role of single-member districts and introducing a winner-compensation mechanism. The institutional reforms also led to redrawing of electoral boundaries, increasing influence on public media, judicial appointments, and state resources. For discussions on democratic backsliding in Hungary, see Scheppele (2015); Freedom House (2018); Bozóki and Hegedűs (2018); Bogaards (2018). Szeidl and Szucs (2021) examine the case of media in detail.

central transfers were frequently insufficient. As a result, they were required to supplement their budgets with own-source income.[6]

The 2011 local government reform further curtailed the fiscal autonomy of municipalities by recentralizing several policy responsibilities and tightening control over local budgets (Dobos and Papp, 2017). Municipalities became increasingly dependent on central transfers, with limited scope to influence spending priorities or raise revenue independently. Although mayors retained formal executive authority, their ability to shape local policy was substantially diminished.

Local elections were held in the fall of the same years as parliamentary elections until 2014, and every five years starting from 2019. Panel B of Table 1 summarizes the mayoral election results. Despite Fidesz being the dominant national party over the past decade, fewer than 20 percent of mayors are affiliated with the party. Instead, independent candidates are overwhelmingly common: nearly 80 percent of mayors are elected as independents, with their share even higher in smaller municipalities. Voter turnout in local elections is significantly lower than in parliamentary elections, typically ranging between 44 and 53 percent.

3.2 The public work program

Hungary's public work program was introduced in the late 1990s to assist jobless individuals who had exhausted their unemployment benefits.[7] Initially, participants were paid the minimum wage, and participation depended on program availability. Individuals unable to enter public work could access means-tested social transfers instead (Molnár et al., 2019).

Until the 2008 financial crisis, public work remained a marginal element of Hungary's active labor market policies (ALMPs), accounting for just 0.1 percent of approximately 13 percent of total ALMP spending. In response to the crisis, the incumbent left-wing government expanded the program to address rising unemployment, increasing its share of ALMP spending to 29 percent by 2010 (Figure A.2).

Labor code reform and expansion of public work After its 2010 electoral victory, the Fidesz government introduced a new labor code and implemented sweeping welfare reforms. Unlike most high-income countries, which rely on means-tested or universal transfers, Hungary adopted a workfare approach more commonly seen in developing economies (Banerjee et al., 2024). This shift was not driven by administrative constraints, but by a political strategy aimed at promoting labor force participation and disciplining the unemployed. The maximum duration of unemployment insurance was reduced to three months, and social transfers for inactive individuals were sharply curtailed. These changes embodied the government's broader

[6]For example, per-student spending on primary education is strongly correlated with municipal income, despite primary education being formally financed by the central government (Varga, 2000).

[7]Bördős (2015) provides a detailed overview of the program's history.

ideological commitment to a "work-based society," with Prime Minister Orbán declaring, "The era of the Western welfare state is over" (Index.hu, 2011).[8]

In this context, the public work program was reorganized and expanded. With traditional transfers curtailed, it effectively became a workfare system: individuals had to work to receive state benefits (Molnár et al., 2019). The program imposed strict behavioral conditions and paid less than 75 percent of the minimum wage (Bördős, 2015).[9] Sanctions were harsh: jobseekers could be excluded for failing to comply with local decrees (e.g., not maintaining their gardens), refusing offered jobs (regardless of skill match), while the requirement for uneducated jobseekers under 35 to finish elementary school was relaxed. Non-compliance could result not only in the loss of benefits but also in removal from the unemployment registry, barring future participation.

By 2014, the OECD average share of direct job creation in ALMP spending was about 5 percent. In contrast, in Hungary the figure reached nearly 60 percent, almost entirely public work (Figure A.2). Yet despite its size, the program proved ineffective as a pathway to regular employment: evaluations find negligible effects on participants' job-finding prospects in the private sector (Cseres-Gergely and Molnár, 2014). This pattern is consistent with meta-analyses of active labor market policies, which show that direct job creation programs—under which public work falls—are among the least effective ALMP instruments (Kluve, 2010; Card et al., 2010, 2018).

Structure of the program Following the 2011 labor code reform, the Fidesz government consolidated Hungary's public workfare system into three main subprograms: the Long-Term, Start, and National programs (Bördős, 2015; Molnár et al., 2019). We classify them by who manages local implementation—a distinction central to their political use.

The Long-Term and Start programs are run by municipal mayors, who act as local employers. They apply for funds, select participants, and oversee daily operations. Although applications are formally approved by higher-level employment offices and the Ministry of Interior, in practice mayors retain wide discretion over access. The Long-Term program is open to all municipalities, while the Start program targets disadvantaged microregions, defined by a composite development index.

This arrangement grants mayors substantial control over participation, especially in smaller municipalities where they know residents personally. Their electoral incentives—combined with local knowledge and gatekeeping power—allow them to credibly promise jobs to supporters and deny them to opponents, making mayor-managed programs highly susceptible to clientelistic use.

By contrast, the National program is administered by state-owned enterprises (SOEs) such as utilities and forestry services. These organizations receive quotas directly from the Ministry,

[8] https://index.hu/belfold/2011/07/23/orban/

[9] The lower than minimum wage also exposes participants and their households to poverty (Colombarolli and Gábos, 2024). Szabó (2022) discusses the characteristics of public work participants using administrative data.

handle recruitment themselves, and follow formal bureaucratic procedures. Mayors have no role in selection, and SOE managers—unelected, less embedded in local communities, and constrained by legal rules—lack both the means and incentives to condition jobs on political behavior.

We exploit this institutional distinction between mayor- and SOE-managed programs to assess how local control shapes the political use of workfare.

Evolution of program intensity Figure 2 shows the evolution of unemployment and public work participation as a share of the working-age population. In the early years following the reform, public work exhibited strong seasonality, with participation typically declining during winter months, when demand for such jobs was highest because few agricultural opportunities were available. This pattern broke ahead of the April 2014 parliamentary election, when a winter public work program was introduced. Instead of declining, participation rose, suggesting a deliberate pre-election expansion. Immediately after the election, participation dropped sharply—from 3.23 percent to 1.86 percent—reinforcing the interpretation that the increase was politically motivated.[10]

Following 2014, the gradual improvement in the economic environment, combined with the declining relative value of public works wages, led to a substantial decrease in public work participation.[11]

3.3 Workfare and clientelism

The 2011 labor code reform significantly enhanced the political role of mayors by expanding their discretion over local public work programs. As the welfare state was scaled back—particularly through stricter eligibility criteria for social transfers—jobless individuals in weak labor markets became increasingly dependent on public work. Mayors thus became both gatekeepers of employment and electoral candidates, able to exploit economic vulnerability to build patron–client ties. The program's discretionary and selective design allowed them to condition access on political loyalty, creating fertile ground for clientelism.[12]

Mayor–voter relationships Journalistic investigations report widespread use of public work to secure votes, with participants pressured to support incumbents or the ruling party under

[10]Such pre-election increases in public spending are consistent with findings from the political business cycle literature (Akhmedov and Zhuravskaya, 2004; Brender and Drazen, 2005; Labonne, 2016; Corvalan et al., 2018; Arulampalam et al., 2009).

[11]The public works wage remained fixed relative to the minimum wage until 2015, but from 2016 onward it declined by 5 percentage points annually, reaching 59 percent of the minimum wage by 2018 (Molnár et al., 2019).

[12]Eligibility rules further entrenched this dependence: individuals excluded from public work had to demonstrate at least 30 days of employment over two years to qualify for social assistance. In depressed areas, exclusion from public work often implied exclusion from all forms of support.

threat of exclusion (Átlátszó, 2014b; Abcug, 1999; OpenDemocracy, 2019; Átlátszó, 2014a).[13] Qualitative research corroborates these accounts. Drawing on interviews, Mares and Young (2018, 2019a,b) document systematic efforts by mayors to frame access to workfare as a privilege, cultivating dependence and reciprocity. Respondents recounted being told to "join the party line" or "mark X in the right spot" to retain jobs. Importantly, such practices were not confined to Fidesz mayors: many independents also acted as vote brokers within informal networks coordinated by the ruling party.

Central government–mayor relationships Workfare also structured ties between local officials and national elites. Some mayors reported that funds were withheld or delayed until after local elections, suggesting that central authorities used transfers to discipline them (Origo, 2014). Investigative accounts echo this view, portraying mayors as "vassals" of MPs responsible for delivering electoral support in exchange for resources.[14]

4 Data and empirical strategy

4.1 Data

We compile a municipality-level database that combines information from multiple administrative and survey sources. The database covers all 3,176 municipalities in Hungary, with an average population of about 3,100 in 2014. Below we describe each data source.

Public work data We use municipality-month level data from the Ministry of Interior starting in 2011. These data report the total number of public workers employed as well as a breakdown by program type—Start, Long-Term, and National programs. The records capture headcounts rather than full-time equivalents.[15]

Election data We obtain municipality-level results for both parliamentary and municipal elections from the National Election Office, aggregated from polling station results. The dataset includes the number of eligible voters, turnout, and votes cast for each party and candidate.

Although electoral districts were redrawn in 2012, our analysis is not affected by gerrymandering for two reasons. First, we rely on municipality-level data, whose boundaries

[13] In some municipalities, participants were required to show their ballots to local delegates or photograph them as proof of compliance. In others, workers were paid without performing labor after being instructed whom to vote for. Minority and dual-citizen voters were also reported to have faced pressure and intimidation linked to program access. See Átlátszó (2014b); Abcug (1999); OpenDemocracy (2019); Átlátszó (2014a).

[14] One mayor described leading a protest with unemployed residents after promised funds failed to arrive, suspecting the delay was politically motivated and timed to coincide with local elections (Origo, 2014). An investigative journalist later characterized mayors as "political vassals" of MPs, responsible for keeping local loyalty in order. Source: https://youtu.be/1hNRah82D8Q?t=679 . See also Gyulai (2017).

[15] Cseres-Gergely and Molnár (2014) provides estimates of full-time equivalents for 2011–2013, but no consistent series is available for later years.

remained unchanged. Second, we focus on the proportional component of parliamentary elections, using list votes as our main measure of partisan support. In national elections, we track support for Fidesz, which ran jointly with the Hungarian Democratic Forum in 2002 and, starting in 2006, with the Christian Democratic People's Party.

For municipal elections, we focus on incumbent mayors. We identify incumbents by matching candidates across elections by name within a municipality. A mayor is classified as incumbent if they won the previous election. We note that results for some incumbents are missing if they chose not to run again.

Other data sources We include several additional municipality-level controls. From the 2011 census, we obtain data on educational attainment and the share of the Roma population. The T-STAR database provides yearly information on income, demographics, and employment by 1-digit ISCO code. We collect municipality-month level data on registered unemployment from the National Employment Service. Data on EU Cohesion and Structural Fund subsidies come from official government sources compiled and cleaned by the Corruption Research Center Budapest (CRCB, 2021). Finally, we webscraped municipality-level campaign spending in the 2014 national election from Transparency International.

Survey data To complement the municipality-level analysis, we use the October 2014 wave of the nationally representative TÁRKI Monitor Survey. The survey records respondents' employment status and political preferences, allowing us to compare support for Fidesz between public workers and other individuals. These microdata allow us to directly test whether individual public work participation is associated with support for the incumbent, complementing our municipality-level findings.

4.2 Measuring workfare exposure

We measure workfare exposure at the municipality level as the share of workfare participants in the working-age population (15–64):

$$WF_{it} = \frac{N_{it}^{WF}}{N_{it}^{WAP}},$$

where N_{it}^{WF} denotes the number of workfare participants in municipality i at time t, and $N^{WAP}it$ is the working-age population in the same municipality and period.

Figure A.3 displays municipality-level exposure in April 2014, when national elections were held. Shading corresponds to deciles of $WF_{i,2014m4}$. In the lowest deciles, only a few percent of the working-age population participated, while the median municipality had about 5 percent. In the top decile, more than 15 percent of working-age residents were in public work.

Participation rates vary strongly with local labor market conditions. Because the program was designed as an alternative to unemployment benefits and other transfers, exposure is

higher where labor markets are weaker. To document this, we regress April 2014 exposure on municipality characteristics (unemployment, income, education, employment share, and population size), weighting by the number of eligible voters and clustering standard errors at the microregion level (175 units). Table 2 reports bivariate correlations: education, income, employment, and population size are negatively associated with workfare, while unemployment is positively associated. We also examine whether exposure is correlated with baseline political support. Regressing 2014 exposure on Fidesz's 2010 vote share shows only a weak correlation.

When analyzing the *increase* in workfare prior to the 2014 election in Table A.1, the correlations with socioeconomic characteristics are much weaker, and the relationship with past Fidesz support is statistically insignificant. This suggests that strategic targeting of workfare was limited.

In our main analysis, we restrict the sample to smaller municipalities. This choice is motivated by two considerations. First, public work is concentrated in smaller settlements: Figure A.4 shows that while the working-age population is relatively evenly distributed across settlement types, only 11% of participants live in major cities, compared to 30% in towns and 59% in villages.[16] Second, clientelist exchanges rely on direct and repeated personal contact between politicians and voters. These interactions are easier to sustain in smaller municipalities, where mayors can personally monitor behavior, enforce implicit quid pro quo arrangements, and maintain dense social ties.[17] To confirm our results are not sensitive to this restriction, we also estimate effects using the full sample in Appendix A; the results are similar to our main findings.

4.3 Empirical strategy

We estimate the political effects of Hungary's workfare program using a difference-in-differences design that exploits cross-sectional variation in program intensity. Specifically, we compare changes in electoral support for the incumbent Fidesz party before and after the 2011 labor code reform across municipalities with different levels of workfare exposure. Workfare intensity is measured as the share of participants relative to the working-age population in April 2014, coinciding with the national election. We estimate the following regression model:

$$Fidesz_{it} = \alpha_i + \delta_t + \beta WF_{i,2014m4} \times Post_t + \Gamma X_{it} + \varepsilon_{it}, \tag{1}$$

where $Fidesz_{it}$ represents the proportion of eligible voters who supported Fidesz in municipality i during election year t. The variable $WF_{i,2014m4}$ denotes the share of workfare participants relative to the working-age population in April 2014 in municipality i. The dummy variable $Post_t$ equals one for election years after the 2011 labor code reform and zero otherwise. α_i and δ_t represent municipality and election year fixed effects, respectively.

[16] Major cities are defined as cities with county rights.

[17] See, for example, Finan and Schechter (2012) and Duarte et al. (2019).

The control variables consist of municipality characteristics from the year 2013 interacted with $Post_t$. These covariates include educational attainment shares, log population, log after-tax income per capita, employment share relative to the working-age population, and unemployment rate relative to the working-age population. The coefficient of interest, β, measures the effect of workfare on Fidesz support. Note, the only control variables for the elections between 2002 and 2010 are the the year and firm fixed effects. Thus α_i reflects the average support of Fidesz at municipality i during these years. While the control variables show how much the support of Fidesz changes by municipality characteristics between 2014 and the 2002-2010 period. [18]

Using a similar research design, we estimate the effect of workfare on the political support for incumbent mayors:

$$IncumbentMayor_{ijt} = \alpha_i + \delta_t + \beta WF_{i,2014m10} \times Post_t + \Gamma X_{it} + \varepsilon_{ijt}, \tag{2}$$

where $IncumbentMayor_{ijt}$ represents the vote share of incumbent mayor j relative to the number of eligible voters in municipality i during election year t. The variable $WF_{i,2014m10}$ denotes the share of workfare participants in October 2014, when local elections were held.

For the estimation, we focus on elections held between 2002 and 2014. Results for later elections are reported separately. Two factors motivate this distinction. First, after 2014 the electoral calendar changed: national elections continued every four years, but municipal elections shifted to a five-year cycle, breaking the previous alignment. Second, the intensity of the workfare program declined after 2014 as labor market conditions improved and relative wages fell, reducing its political salience. Nevertheless, results for later elections—including the 2018 and 2022 national contests, the 2019 municipal election, and European parliamentary elections—are qualitatively similar to those from the main period. In both the national and local election analyses, regressions are weighted by the number of eligible voters and standard errors are clustered at the microregion level (175 units).

For both types of elections, we measure political preferences by the proportion of votes relative to the number of eligible voters. Unlike the vote share (the proportion of a candidate's or party's votes relative to all votes cast), this measure is less sensitive to the number of candidates or parties running in an election. For example, in local elections where only one candidate runs, the vote share would always be 100 percent, making it less informative. Additionally, vote share can be influenced by changes in voter turnout, especially if turnout changes disproportionately affect certain candidates or parties across elections. For these reasons, our primary focus is on political support measured by the proportion of votes relative to eligible voters. Nevertheless, we also report results separately for vote share and turnout.

There are two major differences between measuring the effect of workfare on national

[18] This regression would be mathematically equivalent with a first-difference regression if we would use only the election years of 2010 and 2014. The results remain the same in his case and are available upon request.

elections (Equation (1)) and local elections (Equation (2)). First, while Fidesz participated in all elections, incumbent mayors may choose not to run again, resulting in missing electoral data for some incumbents. Second, incumbent mayors can change within a municipality over time, meaning that the municipality fixed effect captures the average support of all incumbent mayors who have served in that municipality, rather than just one specific mayor. This motivates the use of lagged political support of incumbent mayors as a control, for which the results are robust.

The main identifying assumption for both regressions is the parallel trend assumption: in the absence of the workfare program, political preferences for incumbents—whether Fidesz at the national level or mayors at the local level—across municipalities would have evolved similarly. Although not directly testable, we assess its plausibility by examining the evolution of political preferences in high- and low-workfare municipalities during the 2002, 2006, and 2010 elections, prior to the 2011 labor code reform.

5 The effect of workfare on national and local elections

5.1 National elections

Table 3 presents our main estimates of the effect of workfare on political support for the incumbent Fidesz party in elections between 2002 and 2014. In Column 1, we estimate a difference-in-differences regression controlling only for municipality and election-year fixed effects. The results show that a one percentage point increase in the share of workfare participants relative to the working-age population increases Fidesz's electoral support among eligible voters by about 0.13 percentage points.

In Column 2, we add a rich set of controls for pre-treatment municipality characteristics, including educational shares, log per capita income, unemployment rate, log population, employment-to-population ratio, and municipality type. These controls are interacted with the post-reform dummy ($Post_t$) to allow for differential trends. The coefficient rises to 0.156 and remains statistically significant: a ten percentage point increase in workfare participation increases Fidesz votes relative to the number of eligible voters by 1.56 percentage points. The fact that estimates strengthen once we condition on observables suggests that omitted municipal characteristics are not driving the results, consistent with the validity of our identification strategy.

The identifying assumption of our difference-in-differences design is that, absent the workfare program, political preferences in municipalities with higher versus lower workfare intensity would have followed parallel trends. While this assumption cannot be directly verified, we assess its plausibility by studying pre-reform trends in the relationship between workfare exposure and Fidesz support.

To do so, we estimate the following ~~dynamic~~ specification:

$$Fidesz_{it} = \alpha_i + \delta_t + \sum_{\neq 2010} \beta_j WF_{i,2014m4} \times \mathbb{1}(j = t) + \Gamma X_{it} + \varepsilon_{it}, \tag{3}$$

where $\mathbb{1}(j = t)$ is a dummy for election year t, with 2010 as the omitted baseline. Interacting $WF_{i,2014m4}$ with pre-reform election dummies captures whether municipalities that would later receive more workfare were already on different electoral trajectories before the reform.

Figure 3 plots the estimated β_j coefficients from this specification. The pre-reform estimates are small and statistically indistinguishable from zero, suggesting no systematic differences in electoral trajectories between municipalities with high and low subsequent workfare exposure. After the 2011 reform, however, the pattern changes: by 2014, the coefficient rises to 0.16, indicating that workfare substantially increased support for Fidesz in the national election.

A potential threat to identification is the strategic, non-random allocation of workfare. The government sharply expanded the program in the months leading up to the 2014 national election, raising concerns that distribution may have been politically motivated. In April 2014, participation was more than 50 percent higher than a year earlier, despite improving labor market conditions. Historically, workfare followed a clear seasonal cycle: participation rose in the summer months and declined toward the end of the year, reflecting the nature of available jobs. This pattern broke ahead of the 2014 election, when the government scaled up participation instead of allowing the usual seasonal decline.[19] If this pre-election expansion disproportionately rewarded pro-Fidesz municipalities (Maurer, 2018), our estimates may be biased upward, since these areas may have supported the ruling party even without the program. Conversely, if the expansion targeted opposition-leaning municipalities to win them over, the estimates could be biased downward. Although the pre-election expansion of workfare is uncorrelated with political preferences measured in 2010, we directly test whether such strategic allocation can explain our results.

To address this concern, we exploit the program's allocation in April 2013 as an instrument for April 2014. By that point, public work was already widespread, and its distribution still reflected local needs and available funding rather than electoral considerations. Historically, the number of participants followed a clear seasonal cycle: participation rose in the summer and declined toward the end of the year, reflecting the nature of available jobs (Figure 2). This pattern broke in late 2013, when the government scaled up the program instead of allowing the usual seasonal decline. As a result, participation increased by about 50 percent between April 2013 and April 2014.

While the sharp expansion before the 2014 election may have been politically motivated, the April 2013 allocation still conformed to the long-standing seasonal pattern. This makes it a natural instrument for April 2014 participation. The validity of this instrument rests on the fact that April 2013 allocations reflected structural determinants of workfare demand—such as

[19] This is consistent with Akhmedov and Zhuravskaya (2004), who argue that political cycles in spending can only be identified using high-frequency data.

unemployment and fiscal capacity—rather than short-term political calculations. To the extent that municipalities with weaker labor markets both received more workfare and may have been more likely to support Fidesz, this confounding channel is absorbed by our covariates on income, education, and labor market conditions. Under these conditions, April 2013 participation provides exogenous variation in April 2014 workfare exposure, isolating the component driven by administrative routines and local needs rather than by electoral strategy.

We implement this strategy using a two-stage least squares specification. In the first stage, we instrument April 2014 workfare exposure with its allocation one year earlier:

$$WF_{i,2014m4} \times Post_t = \alpha_i^{FS} + \delta_t^{FS} + \pi^{FS} WF_{i,2013m4} \times Post_t + \Gamma^{FS} X_i \times Post_t + \varepsilon_{it}^{FS}.$$

The predicted values from this first stage are then used in the second stage:

$$Fidesz_{it} = \alpha_i^{IV} + \delta_t^{IV} + \beta^{IV} \widehat{\mathrm{WF}_{i,2014m4} \times Post_t} + \Gamma^{IV} X_i \times Post_t + \varepsilon_{it}^{IV}. \tag{4}$$

The first-stage regression shows that April 2013 workfare allocation is a very strong predictor of participation in April 2014, with an F-statistic of 475. This magnitude rules out weak instrument concerns. Column 3 of Table 3 reports the IV estimate: a one percentage point increase in workfare participation raises Fidesz support by 0.17 percentage points. The closeness of this IV estimate to the OLS coefficients reported in Columns 2 suggests that strategic allocation around the 2014 election is not driving our results and reinforces the interpretation that the observed effect of workfare on electoral outcomes reflects the causal impact of the program itself.

The positive effect of workfare on Fidesz support can operate through two margins: by increasing Fidesz's vote share among those who turn out, or by mobilizing additional voters. In Columns 4 and 5 of Table 3, we re-estimate Equation (1) separately for Fidesz vote share and for turnout. A one percentage point increase in workfare participation raises Fidesz's vote share by 0.16 percentage points and increases turnout by 0.09 percentage points, both statistically significant. Figure A.6a and Figure A.6b plot the dynamic coefficients, showing no pre-trends and a sharp post-reform rise, consistent with a causal interpretation. These results suggest that both persuasion and mobilization played a role. Workfare shifted vote choice toward Fidesz among those who might otherwise have supported other parties, but it also expanded the pool of voters turning out, consistent with turnout-buying (Nichter, 2008).

Magnitude of the estimates Based on the coefficient in Column 3 of Table 3, the workfare program delivered roughly 36,600 additional votes to Fidesz in our sample of smaller municipalities. This corresponds to about 0.8 percent of the eligible electorate, or 1.3 percent of actual voters in 2014. Combining our estimates with information on the wage costs, we can calculate the implied cost per vote, which is XX HUF, or XXX USD PPP. For details on the calculation and sensitivity tests see Appendix D.

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Because the wage costs of workfare are publicly available, we can also approximate the cost per vote. The annual net wage of a full-time workfare participant was 608,000 HUF (about 4,700 USD in PPP terms). Combining this with the estimated electoral gains yields a cost of XX HUF, or XX USD PPP, per additional Fidesz vote.

what does the clientelism lit find?

Effect of workfare on other parties something does not add upTo assess whether Fidesz's electoral gains came at the expense of specific rival parties, we re-estimate Equation (3) for other political parties. Figure A.7 presents dynamic estimates for the center-left, green, far-right, and other parties. The results show that between 2010 and 2014—the key period of workfare expansion—support for these parties remained largely flat across municipalities, with only minor declines observed for the far-right, greens, and others. Notably, support for the center-left did not decline during this period at conventional levels. The figure does, however, reveal a sharp political realignment in 2010: municipalities with high subsequent workfare exposure experienced a significant shift in support from the center-left to the far-right.[21]

This temporal distinction is crucial for our identification strategy. The 2010 sorting reflects structural changes in the party system that precede treatment, while the stability of opposition support between 2010 and 2014 supports the parallel trends assumption. These findings bolster our interpretation that the increase in Fidesz support reflects a targeted electoral response to the workfare program, rather than a general collapse of opposition parties.

Individual survey evidence A potential concern with our municipality-level analysis is ecological inference (King, 1997): aggregate patterns may not reflect individual-level behavior. To address this, we draw on the October 2014 wave of the nationally representative Tárki Monitor survey, which covers about 1,000 respondents and records both employment status and political preferences. Although the sample is modest, its representative design ensures that the results are informative for the Hungarian adult population and provide a useful complement to our municipality-level data.

We estimate a linear probability model comparing public workers to the unemployed. Column 1 of Table A.2 shows that public workers were 23 percentage points more likely to support Fidesz, significant at the 10 percent level. Adding individual-level controls slightly reduces the coefficient, but it remains significant. Columns 3 and 4 examine voting intentions, showing that public workers were also 23 percentage points more likely to express a willingness to vote than the unemployed, a result robust to controls.

[20] Estimating on the full sample including larger cities as well, yields somewhat smaller estimates. Workfare led to an extra 41,500 votes for Fidesz, 0.52 percent of eligible voters or 0.84 percent of valid votes.

[21] This shift occurred prior to the reform and reflects the political fallout from a household debt crisis (Gyöngyösi and Verner, 2022), rather than anticipation of workfare.

Taken together, these findings corroborate our municipality-level analysis: workfare influenced electoral outcomes through higher support for Fidesz and greater willingness to vote.

5.2 Local elections

We next examine how workfare influenced the political support of incumbent mayors. Table 4 reports the results. Column 1 estimates a difference-in-differences specification with only municipality and year fixed effects. The coefficient is 0.21 and highly significant. In Column 2, adding demographic and economic controls increases the coefficient to 0.38, suggesting that the positive effect of workfare on incumbent support is robust to observable differences across municipalities.

To assess the parallel trend assumption, we estimate the dynamic specification in Equation (3) with the incumbent mayor's political support as the outcome. Figure 4 shows that the coefficients before 2014 are close to zero and statistically insignificant, indicating no differential trends between high- and low-workfare municipalities prior to the reform. In 2014, however, the estimated effect rises sharply to 0.34 and is highly significant, consistent with a causal interpretation.

In Column 3, we further control for the lagged electoral result of the incumbent mayor. Because incumbents may not always recontest elections, the municipality fixed effect captures the average support of different mayors over time. To avoid potential Nickell bias, we estimate this specification without municipality fixed effects. The point estimate rises to 0.46 and remains highly significant, underscoring the strong positive effect of workfare on incumbent support.

To address concerns about strategic allocation, Column 4 instruments workfare participation in October 2014 with its allocation one year earlier. The IV estimate is 0.29, close to the OLS coefficients, suggesting that the local effects of workfare are not driven by politically motivated targeting but reflect a causal impact of the program itself.

Finally, Columns 5 and 6 decompose the effect into vote share and turnout. A one percentage point increase in workfare participation raises the incumbent's vote share by 0.58 percentage points, while also significantly boosting turnout. Dynamic estimates for these two outcomes (Figure A.9a and Figure A.9b) confirm the absence of pre-trends, reinforcing the validity of our design. The relative magnitudes suggest that persuasion—higher vote shares for incumbents—accounts for most of the effect.

Comparing across electoral levels, the effect of workfare is stronger in local elections than in national elections. This pattern aligns with our theoretical framework: mayors have stronger incentives and greater capacity to mobilize participants in local contests, where their own political survival is directly at stake. These findings highlight how mayor–voter relationships, embedded in discretionary workfare allocation, amplify the clientelistic use of the program.

Incumbency advantage Incumbents often enjoy an incumbency advantage (Lee, 2008), and control over workfare programs may further increase their chances of re-election. This aligns with the broader literature on incumbency effects, which shows that access to public resources can yield significant electoral benefits (e.g., Brollo et al., 2013; Magalhaes, 2015).

We examine this by estimating the effect of workfare intensity on the likelihood that the incumbent mayor remains in office. As shown in Table A.3, a one percentage point increase in public work participation raises the probability of incumbent re-election by 0.92 percentage points. Restricting the sample to incumbents who actually recontest, the effect remains nearly the same (0.81 pp) and highly significant. This similarity suggests that selection into candidacy is weak: the main channel is a higher probability of winning conditional on running, rather than changes in incumbents' recontest decisions.

To probe these mechanisms directly, Column 3 examines whether workfare affects the probability that incumbents recontest, yielding an insignificant estimate. Column 4 considers whether workfare deters challengers, by estimating its effect on the number of candidates using Pseudo Poisson Maximum Likelihood; the coefficient is again small and insignificant.

Overall, access to workfare improves the electoral position of incumbents, increasing their vote shares and helping them stay in office. This suggests that control over a large public employment program is a valuable political asset. The pattern echoes the "political resource curse" described by Brollo et al. (2013), where access to public funds strengthens those in power and weakens competition. In this case, the relevant spending is not an exogenous windfall but a transfer administered by the central government, creating political advantages for those who control its allocation. These results suggest that fiscal dependence within decentralized systems can undermine local accountability by reinforcing incumbents' hold on power.

5.3 Robustness checks

Labor market shocks Unobserved labor-market shocks could jointly affect workfare participation and electoral outcomes, potentially biasing our estimates. While worsening local conditions typically reduce support for incumbents, we test whether such shocks drive our results.

First, we absorb time-varying local conditions with subregion-by-post fixed effects. Column 1 of Panel A in Table D.15 shows the coefficient remains positive and significant (0.158), closely matching the baseline. Second, we directly control for the change in employment between 2013–2014; the estimate slightly increases to 0.174 (Column 2). Finally, including both sets of controls yields a similar coefficient (0.155) that remains statistically significant (Column 3). Panel B repeats the exercise for support for incumbent mayors and finds similarly stable estimates.

Unobserved campaigning efforts Politicians seeking re-election may deploy tools beyond workfare, and correlation between such efforts and local workfare exposure could bias our estimates. We proxy for campaigning along two dimensions. First, we use campaign spending in the April 2014 national election. Although spending is heavily regulated, parties typically exceed the formal limits; Transparency International compiled local spending data, which we normalize by the number of eligible voters. The estimate is robust to including this measure (Column 4 of Table D.15). Second, we control for European Union Cohesion and Structural Funds, which are susceptible to political favoritism in Hungary (Muraközy and Telegdy, 2016). Adding per-capita EU transfers received by the municipality over 2010–2014 leaves the results unchanged (Column 5).

Other elections To assess the scope and persistence of workfare's political effects, we extend the analysis beyond the 2014 national and local elections. We begin with the European Parliamentary elections, re-estimating Equation (1).[22] Table A.7 reports the effect of workfare on Fidesz support and turnout, while Figure A.10 presents the dynamic effects. The estimates are positive and significant, and the event-study plot supports the parallel trends assumption. Despite the different nature of EP contests, the magnitude of the effects is similar to those observed in national elections.

We next turn to subsequent elections and estimate the following specification:

$$Y_{it} = \alpha_i + \delta_t + \beta WF_{it} + \Gamma X_{it} + \varepsilon_{it}, \tag{5}$$

where Y_{it} denotes the electoral outcome in municipality i at time t, WF_{it} is the intensity of public work participation, and X_{it} is the same vector of controls as in the main analysis. The sample covers the 2014–2022 period, and regressions are run separately for national, local, and European Parliamentary elections.[23] Table A.8 shows that the estimated coefficients closely match the main results, indicating that workfare's political effects were not limited to the 2014 contests but persisted across later elections as well.

Alternative samples and weighting Because public work is correlated with many municipal characteristics, we use propensity score matching to verify that our results are not driven by limited overlap in observable characteristics across municipalities with high and low workfare shares. We split the sample into two groups based on public work share in April 2014 and match high-workfare municipalities to comparable low-workfare municipalities. The propensity score is calculated using population size, educational shares, unemployment,

[22] European Parliamentary elections provide a useful test case because they are second-order contests with lower turnout, weaker party mobilization, and fewer local stakes compared to national elections.

[23] In the main analysis, treatment intensity is fixed at April 2014 for national elections and October 2014 for local elections to capture pre-election exposure without contamination from post-treatment changes. For later elections, however, keeping treatment fixed at 2014 levels would miss the substantial decline in workfare intensity that occurred in subsequent years. We therefore use contemporaneous WF_{it} to assess whether political effects persisted as the program evolved.

income per capita, employment share, and the share of Roma minority. Table A.4 shows that the matched sample is balanced on these covariates, although some differences remain in occupational structure: in particular, the share of employed workers in occupation code 9 is higher in high-workfare municipalities.

Panel A of Table A.5 shows that the estimated effect of workfare on Fidesz support is stable across specifications. Using the matched sample (Column 1), the coefficient is positive, significant, and close in magnitude to the baseline estimate. Including major cities in the full sample (Column 2) yields nearly identical results. Running the regressions without weights (Column 3) also produces similar results. Panel B repeats the same exercises with incumbent mayor support as the outcome, and the results mirror those for Fidesz: workfare consistently increases electoral support across all specifications.

6 Distinguishing Clientelism from Other Distributive Logics

The positive effect of workfare on Fidesz support is consistent with clientelism, but it could also reflect alternative distributive logics. Programmatic politics and pork barrel spending are likewise designed to win votes and may help explain why workfare participants support Fidesz.[24] These different logics imply different mechanisms linking distributive policy to political support: programmatic politics relies on voters rewarding benefits they receive, while clientelism hinges on the threat of exclusion.

Disentangling these forms of distributive politics is both theoretically and normatively important. Whereas programmatic transfers allocate benefits according to rules or need, clientelistic allocation depends on loyalty and political cooperation. Identifying which mechanism dominates has implications for accountability, equity, and the democratic quality of welfare provision.

To separate clientelism from other distributive logics, we present two complementary tests consistent with our model's predictions: one examines whether access to workfare is contingent on electoral performance, and the other exploits variation in who administers the program locally.

6.1 Contingent workfare

To empirically distinguish clientelism from other distributive logics, we focus on its defining feature: contingency. Under clientelism, Fidesz provides funding for workfare *in exchange for*

[24] Hicken (2011) distinguishes among three main types of distributive politics based on whether transfers are targeted and contingent. National public goods and programmatic policies are non-targeted, while targeted benefits can be either non-contingent (club goods or pork barrel spending) or contingent (clientelism). Stokes et al. (2013, p. 7) provide a similar classification.

votes, and both participants and mayors understand that benefits can be withdrawn if loyalty falters. Participants support Fidesz out of fear of losing access to public work, while mayors broker votes because their local quotas depend on continued cooperation with the governing party.

This logic implies that when Fidesz performs poorly in a locality despite abundant pre-election workfare funding, the central government interprets it as weak mayoral cooperation. In response, it becomes optimal for Fidesz to reduce allocations. Municipalities with low electoral support should therefore experience a subsequent contraction in workfare funding, generating a positive correlation between Fidesz's electoral results and future provision.

By contrast, under programmatic politics or pork barrel spending, the allocation of workfare is unconditional. Fidesz may still target specific groups or regions, but voters support the party because they value the jobs, income, and local spillovers that public work provides.[25] Since the official aim of public work is to address unemployment, its funding should remain stable as long as local labor market conditions are unchanged. In this case, there should be no correlation between Fidesz's electoral results and subsequent workfare provision.

Empirical design To test between these logics, we construct an observable proxy for mayoral vote-brokering. Following the idea that effective monitoring enables parties to incentivize brokers (Larreguy, 2012; Larreguy et al., 2016), we measure the extent to which a mayor delivered more votes for Fidesz than expected given local characteristics. Specifically, we estimate Equation (3) to predict expected Fidesz support in the 2014 national election as a function of municipal covariates. This provides a fitted value, $\widehat{Fidesz}_{i,2014m4}$, for each municipality.

We define the vote-brokering residual, denoted by $BrokerResidual_{i,2014m4}$, as the difference between the actual and predicted electoral support for Fidesz in municipality i during the April 2014 national election. The prediction accounts for observable municipal characteristics, including workfare intensity:

$$BrokerResidual_{i,2014m4} = Fidesz_{i,2014m4} - \widehat{Fidesz}_{i,2014m4}. \tag{6}$$

$BrokerResidual_{i,2014m4}$ isolates variation in *unexpected* Fidesz performance, a high value indicates that Fidesz performed better than expected in municipality i during the 2014 national election. We interpret this as evidence of stronger mayoral cooperation in mobilizing votes for the governing party. Accordingly, the residual serves as our proxy for vote brokering — a key mechanism in our clientelistic framework. Alternative proxies such as raw election results are discussed in the Appendix.

To test whether workfare allocation responds to these brokering efforts, we use monthly

[25] Public work provides jobs and income for unemployed individuals and may also generate positive spillovers, such as higher private-sector wages and improved local amenities (Franklin et al., 2024; Muralidharan et al., 2023; Szabó, 2020).

data on workfare participation around the April 2014 national election and the October 2014 local election. Specifically, we estimate the following difference-in-differences regression:

$$WF_{it} = \alpha_i + \delta_t + \gamma BrokerResidual_{i,2014m4} \times POST(t > 2014m4) + \Gamma X_{it} + \varepsilon_{it}, \tag{7}$$

where WF_{it} is the share of workfare participants relative to the working-age population in municipality i at time t, and $BrokerResidual_{i,2014m4}$ measures the deviation of Fidesz's actual vote share from its predicted vote share in the April 2014 national election. The variable $POST(t > 2014m4)$ is an indicator equal to one for months after April 2014 and zero otherwise. The coefficient of interest, γ, captures the extent to which subsequent workfare allocation is correlated with Fidesz's local electoral performance relative to predicted support. Because $BrokerResidual_{i,2014m4}$ is a generated regressor, we compute confidence intervals using a bootstrap procedure.

Given that the scaling up of workfare began in autumn 2013, we focus on the period between July 2013 and October 2014 for our main analysis. We also report results for a longer time horizon to assess how workfare allocations evolve when there is no immediate electoral pressure on mayors. Regressions are weighted by the number of eligible voters, and standard errors are clustered at the subregion level (175 units).

This specification provides a direct test of whether workfare allocation is contingent on electoral performance—as implied by clientelistic logics—or independent of it, as in programmatic allocation.

Results Table 5 reports the effect of Fidesz's electoral performance on subsequent workfare allocation. Column 1 presents estimates with only municipality and time fixed effects. The coefficient is 0.07 and statistically significant, indicating that a one percentage point increase in Fidesz support is associated with a 0.07 percentage point increase in workfare participation relative to the working-age population. Column 2 adds our baseline controls, and the results remain virtually unchanged.

A potential concern is that deteriorating labor market conditions in pro-Fidesz municipalities could drive the increase in workfare. However, prior research suggests the opposite: elections tend to raise economic sentiment among winning-party voters, which should boost employment and thereby reduce demand for public work (Gillitzer and Prasad, 2018; Mian et al., 2023). To further address this, column 3 introduces subregion-by-month fixed effects and controls for monthly unemployment rates.[26] The coefficient remains large and highly significant, indicating that labor market shocks do not account for the observed relationship.

To gauge the magnitude, municipalities at the 90th percentile of Fidesz support received about 0.5 percentage points more workfare than those at the 10th percentile, equivalent to roughly 10 percent of the average participation rate in October 2014. In standardized terms,

[26] We define 175 subregions that approximate local labor markets.

a one-standard-deviation increase in Fidesz support corresponds to a 0.04 standard-deviation increase in workfare participation.[27]

We next assess the dynamic impact of Fidesz support using an event-study specification of the following form:

$$WF_{it} = \alpha_i + \delta_t + \sum \gamma_k BrokerResidual_{i,2014m4} \times I(t = k) + \Gamma X_{it} + \varepsilon_{it}. \tag{8}$$

where WF_{it} denotes the share of workfare participants in municipality i at time t, α_i and δ_t are municipality and time fixed effects, and $I(t = k)$ is an indicator for the post-election months. Figure 5 shows that workfare evolved similarly across municipalities with high and low Fidesz support until the April 2014 national election, which supports the parallel trends assumption and strengthens the causal interpretation of our estimates. After the national election, workfare expanded more strongly in municipalities with greater Fidesz support, but the effect was temporary and disappeared following the October 2014 local elections. This dynamic pattern indicates that the central government used workfare allocations to discipline mayors based on their revealed performance in the national contest, with the punishment concentrated in the months before the local elections and lifted once that contest had passed.

To shed light on the mechanism, we examine heterogeneity across workfare subprograms. Mayor-managed programs, where incumbents directly control access to positions, are the domain in which Fidesz can effectively discipline or reward mayors. By contrast, SOE-managed programs bypass the mayor, making them ineffective for disciplining local intermediaries based on electoral performance. Consistent with this logic, column 5 shows that mayor-managed workfare increased significantly with Fidesz support, while column 6 shows no effect for SOE-managed programs. The magnitude of the estimate for mayor-managed programs is nearly identical to the total effect, underscoring that Fidesz punished uncooperating mayors precisely where it hurt them — by reducing their ability to distribute jobs and income to local constituents before the local elections.

These findings support the principal–agent logic of our model. The reduction in workfare funding following weak electoral performance appears to target mayors who fail to deliver votes, rather than voters themselves. This distinction is crucial: it points to a decentralized clientelist equilibrium, where the central government rewards or punishes local intermediaries to enforce electoral cooperation. If voters were being punished directly, the mechanism would more closely resemble a centralized, top-down form of coercion, inconsistent with the observed pattern of subprogram variation and mayoral targeting.

Finally, while our interpretation emphasizes the disciplining of underperforming mayors, these sanctions inevitably affect local constituents. Because mayors control access to public

[27] The difference in workfare participation relative to the working-age population is calculated as $0.035 \times (34.29 - 20.76) = 0.48$, which represents approximately 10.5 percent of the October 2014 average. A one-standard-deviation increase in Fidesz support corresponds to a 3.7 percent of a standard-deviation increase in workfare participation.

work, reducing quotas not only punishes intermediaries but also deprives vulnerable households of one of their few formal income sources. Given the reliance of many families on public work, the withdrawal of quotas after weak electoral performance can have severe welfare consequences. This suggests that the costs of clientelism extend beyond inefficiency, deepening the vulnerability of politically unaligned communities.

Robustness We conduct several additional tests to assess the robustness of our findings.

We begin by considering alternative measures of Fidesz popularity. In Table A.9, we replace the residual measure of mayoral cooperation with Fidesz's raw electoral results. The results are qualitatively similar, suggesting that our findings do not depend on how popularity is measured.

Next, we ask whether our results could reflect spurious correlations with past partisan support. If this were the case, earlier electoral outcomes should also predict subsequent workfare allocations. Table A.11 shows no such relationship: vote shares from previous elections have no effect on workfare allocations in 2014. This supports the interpretation that the 2014 national election uniquely triggered the punishment mechanism.

A further concern is that our estimates might be driven by a boom–bust cycle in workfare. The government may have temporarily expanded workfare in opposition-leaning municipalities before the election to sway voters, only to cut these programs afterwards. Because Fidesz nevertheless performed poorly in these areas, such a pattern could mechanically generate the observed correlation between electoral support and post-election workfare. To address this possibility, we control for the level of workfare in April 2014, comparing municipalities with the same workfare intensity at the time of the national election. The effect of Fidesz support remains robust, indicating that our results are not explained by a pre-election boom and post-election bust.

Finally, we test whether the punishment mechanism reflects partisan targeting rather than disciplining of underperforming mayors. Under a partisan-targeting logic, the government would reduce workfare in opposition-led municipalities regardless of electoral performance. To distinguish between these possibilities, we split municipalities according to the mayor's party affiliation in 2014 and re-estimate Equation (7) separately for Fidesz-affiliated and independent mayors.[28] Table A.10 shows that the punishment effect is not limited to municipalities with independent mayors: Fidesz-aligned mayors who failed to deliver votes also experienced reductions in workfare funding. This is difficult to reconcile with partisan targeting alone. Instead, it supports our interpretation that Fidesz conditions workfare allocations on mayors' electoral performance and disciplines underperforming brokers, even within its own party — a pattern consistent with clientelism.

[28]The number of opposition mayors is too small to support separate estimation.

6.2 The role of mayor in workfare's electoral impact

To understand how local political actors mediate the electoral effects of workfare, we exploit variation in program administration. Under programmatic politics, voters should reward Fidesz for the benefits of public work regardless of whether it is managed by incumbent mayors or state-owned enterprises (SOEs). By contrast, clientelism implies that the identity of the local administrator matters: when mayors control access to workfare, they can allocate jobs selectively to reward loyalty and mobilize electoral support.

This administrative variation provides a direct test of conditionality — the defining feature of clientelism. Only mayor-managed programs allow for discretionary, politically contingent access to public work. If clientelism is operative, we should observe stronger electoral returns from mayor-managed workfare than from SOE-managed workfare.

We test this implication by decomposing total workfare into two components — mayor-managed and SOE-managed — and re-estimating Equation (1) and Equation (2). Table 6 presents the results. Column 1 shows that mayor-managed workfare has a significant positive effect on Fidesz's vote share relative to the eligible electorate. Column 2 shows that SOE-managed workfare has a small and statistically insignificant effect. When both components are included jointly in column 3, only mayor-managed workfare remains significant.

We then examine how these two types of workfare affect the popularity of incumbent mayors. Columns 4–6 repeat the analysis with mayoral support as the dependent variable. The results mirror those for Fidesz: mayor-managed workfare significantly boosts mayors' electoral performance, while SOE-managed workfare has no discernible effect.

Why does SOE-managed workfare fail to generate comparable returns? In principle, employees of SOEs could also condition participation on political support. In practice, however, SOEs lack the localized political networks and incentives that make vote brokering viable. Mayors face direct accountability to voters and depend on goodwill from the central government — giving them both the capacity and the motivation to act as brokers. By contrast, SOE staff are less embedded in local political life and are not held responsible for electoral outcomes. Moreover, the organizational structure of SOEs typically places hiring decisions at arm's length from village-level politics — making it difficult to selectively reward or punish individuals based on political behavior. As a result, the capacity for conditional enforcement is much weaker in SOE-managed programs. This interpretation aligns with the evidence in Section 6.1, which shows that municipalities failing to broker votes face cuts in mayor-managed programs, but not in those administered by SOEs.

Together, these findings indicate that the political returns to workfare depend critically on local control. Electoral gains materialize only when mayors administer the program — consistent with a clientelistic mechanism in which local brokers leverage public jobs as a political resource. This conclusion resonates with Frey (2019), who show that unconditional cash transfers — programs politicians cannot manipulate — reduce the incumbency advantage

of mayors.

6.3 Heterogeneous Effects of Workfare

If workfare functions as a clientelistic tool rather than a programmatic policy, its political effects should vary systematically with local political and socioeconomic conditions. In particular, the effectiveness of clientelistic exchange depends on the incentives of local brokers — such as mayors — to monitor and mobilize voters. We explore this by examining heterogeneity along four dimensions that shape the incentives and capacity of local brokers to deliver votes: (i) electoral competition, (ii) mayoral popularity, (iii) mayoral party affiliation, and (iv) economic dependence.

Electoral competition The returns to vote brokering depend on the local political environment. Where elections are competitive, mayors have stronger incentives to mobilize workfare participants in support of Fidesz (Bardhan et al., 2024). We proxy competition using the number of candidates in the 2010 mayoral election and split municipalities into high- and low-competition groups. Panel A of Table 7 shows that the electoral return to workfare is significantly stronger in municipalities with higher competition. Panel B confirms a similar pattern for incumbent mayors — those facing tighter races benefit more from workfare expansion. These results are consistent with the idea that uncertain re-election prospects increase the incentives to engage in clientelist strategies.

Popularity of the mayor The incentive to rely on clientelism should be weaker when mayors are already secure in office. To test this, we compare municipalities where mayors won the 2010 election with high versus low vote shares. Panel A of Table 7, columns 3–4, shows that the effect of workfare on Fidesz support is smaller in municipalities led by highly popular mayors. Panel B reports a similar pattern for incumbent mayor support: workfare has a weaker effect where the mayor already enjoyed a strong electoral mandate. This is consistent with the notion that clientelistic mobilization is primarily a tool of electoral insurance, not dominance.

Mayor's party affiliation We next examine whether effects vary by mayoral partisanship. If the political returns to workfare depend on the willingness of local brokers to cooperate with the national government, one might expect stronger effects under Fidesz-affiliated mayors. While the number of opposition mayors in small municipalities is too small for separate estimation, we split the sample into Fidesz-led and independent mayor subsamples. Columns 5–6 of Table 7 show that the electoral return to workfare is positive and significant in both groups, with somewhat larger magnitudes in Fidesz-led municipalities. This suggests that partisan alignment facilitates coordination, but independent mayors may also broker votes for Fidesz — likely in exchange for continued access to public work resources. This pattern is consistent with a decentralized model of clientelism, where vote trading occurs even without formal party ties.

Economic dependence Finally, we examine whether the political returns to workfare are stronger where voters depend more heavily on public employment. In line with our model, we hypothesize that mayors can more effectively use workfare for electoral gain in poorer municipalities, where public work represents a critical source of income and outside options are scarce. This is consistent with prior research suggesting that political loyalty is more cheaply bought in low-income, vulnerable settings (Bobonis et al., 2022). Splitting municipalities by local unemployment rates, we find that workfare significantly increases Fidesz support in both groups, but the effect is substantially larger in high-unemployment municipalities (column 2) than in low-unemployment ones (column 1). Using educational attainment as a proxy for local poverty yields similar results: workfare's effect is strong and significant in low-education municipalities (column 3), but smaller and only marginally significant in high-education ones (column 4). These findings are consistent with the logic of contingent exchange, where the political returns to workfare increase with voter dependence. However, they could also reflect non-clientelistic mechanisms, since poorer voters may place higher value on public work.

7 Conclusion

This paper examines how discretionary welfare programs can be leveraged as instruments of political clientelism. We develop a model in which the central government allocates resources across municipalities while delegating recipient selection to ~~local~~ mayors. This institutional arrangement generates a two-layered clientelist equilibrium: the central government disciplines mayors based on electoral performance, and mayors, in turn, condition access to workfare on voter support. Using administrative and electoral data from Hungary, we show that exposure to public work after the 2011 labor code reform significantly increased support for the incumbent Fidesz party and incumbent mayors.

To separate clientelism from alternative distributive strategies, we provide two key pieces of evidence. First, municipalities with weak electoral support for Fidesz in 2014 experienced sharp reductions in workfare funding after the election. Second, only mayor-managed programs produced electoral returns, while programs administered by state-owned enterprises—lacking local discretion and monitoring—had no political impact. Together, these results suggest that the political returns to workfare hinge not only on who benefits, but on who controls the distribution of benefits.

Our findings underscore the institutional risks of clientelism, particularly in hybrid regimes. In such systems, where elections exist but the playing field is uneven, clientelist tools allow incumbents to maintain power without overt repression. Delegated clientelism transforms welfare programs into mechanisms of political control: rather than enabling voters to hold politicians accountable, it enables politicians to hold voters accountable. In this way, clientelism blurs the line between social protection and political coercion.

Beyond electoral consequences, clientelism also distorts the composition of public spending.

Because targeted, reversible benefits are electorally attractive and easier to condition on political loyalty, resources are reallocated away from broad public goods—such as infrastructure, education, and health—toward private or club goods that can be withheld or promised at the margin (e.g., Wantchekon, 2003; Keefer and Khemani, 2005; Khemani, 2015). This crowd-out reduces allocative efficiency and can depress welfare in the longer run, even when total transfers rise, by substituting short-horizon vote buying for investments with diffuse, nonexcludable returns.

Although our empirical setting is Hungary, the mechanisms we identify are relevant to many decentralized democracies. In countries from India to Brazil, national governments often provide social benefits through subnational intermediaries who face re-election and operate under the shadow of central discretion. In these contexts, clientelism may emerge as a dominant strategy, especially when poverty is widespread and program reversibility makes threats credible.

These insights carry important policy implications. Safeguarding targeted welfare programs from political manipulation requires limiting discretion at both the central and local levels. Formula-based allocation rules can reduce the scope for central punishment or reward, while objective, verifiable eligibility criteria can prevent mayors from conditioning access on political loyalty. Tools such as centralized databases, algorithmic targeting, or third-party audits may further reduce opportunities for favoritism and strengthen the democratic accountability of welfare provision.

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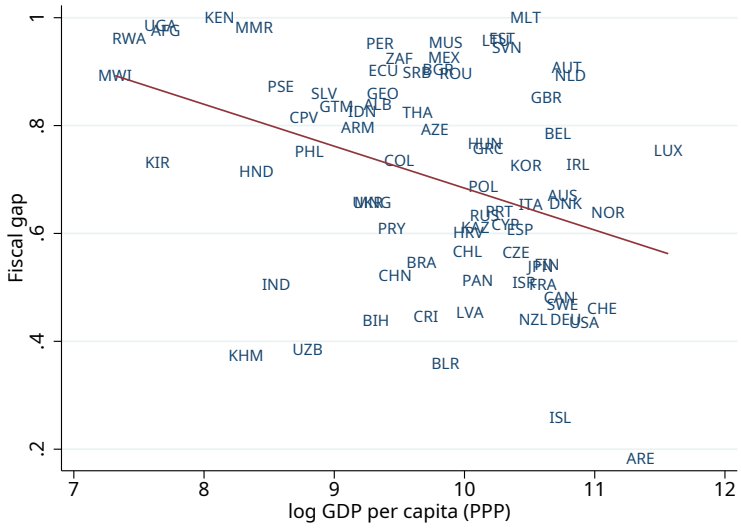
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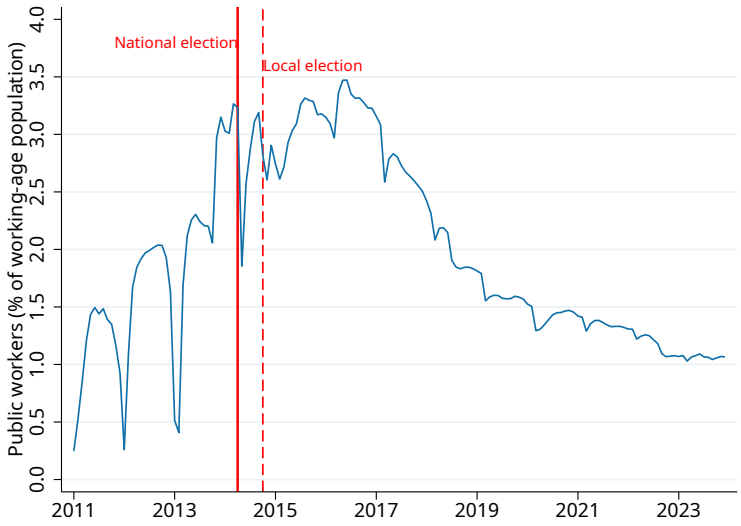
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Figure 1: Fiscal gap and economic developmnent



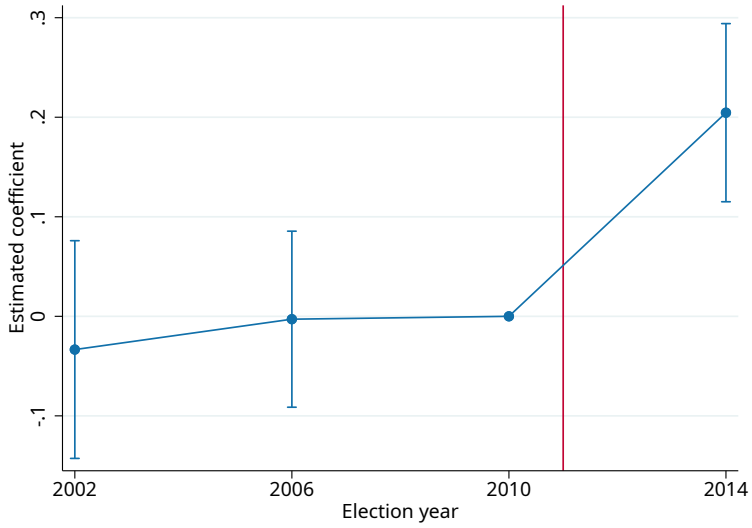
Note: The figure plots the fiscal gap in 2014 against log GDP per capita (PPP) in 2014. The fiscal gap is defined as the share of subnational revenues not covered by subnational tax revenues, following Gadenne and Singhal (2013). Data sources: IMF Government Finance Statistics and World Bank.

Figure 2: Aggregate share of public workers



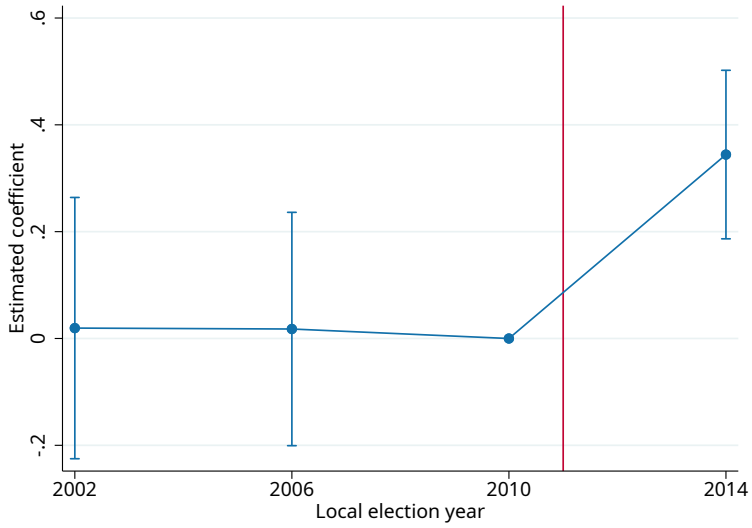
Note: This figure shows the evolution of the total number of individuals employed in public work programs as a share of the working-age population (ages 15–64). The solid vertical line marks the date of the national election (April 2014), and the dashed vertical line marks the date of the local election (October 2014).

Figure 3: The impact of workfare intensity on Fidesz support



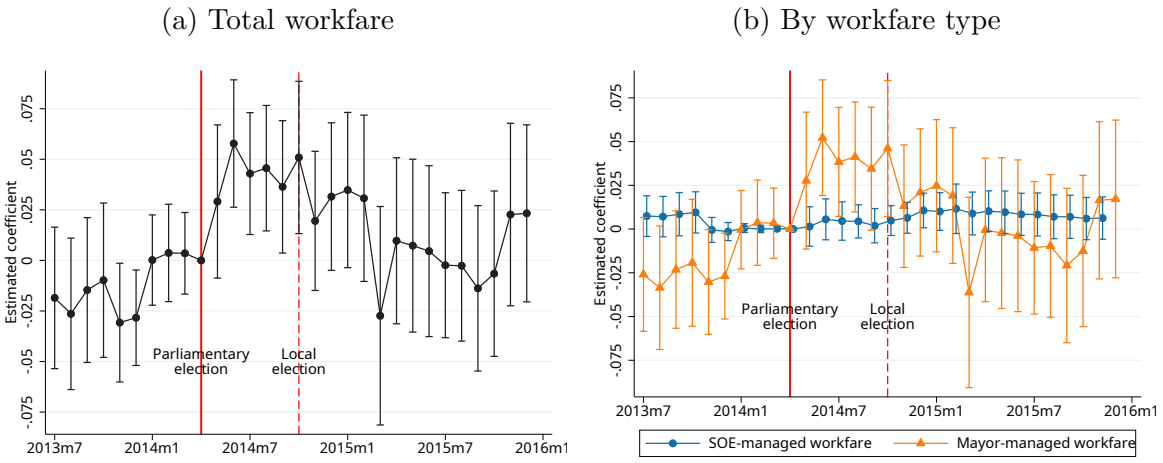
Note: This figure plots the estimated coefficients $\hat{\beta}_j$ from Equation (3), where the dependent variable is the number of Fidesz votes as a share of eligible voters. The specification includes pre-2014 municipality characteristics (educational attainment shares, unemployment rate, log income per capita, log population, share of Roma minority, employment rate, and one-digit occupational shares), each interacted with election-year fixed effects. The vertical line marks the timing of the 2011 welfare reform. Standard errors are clustered at the microregion level (175 units). Error bars represent 95% confidence intervals.

Figure 4: The impact of workfare intensity on incumbent mayor support



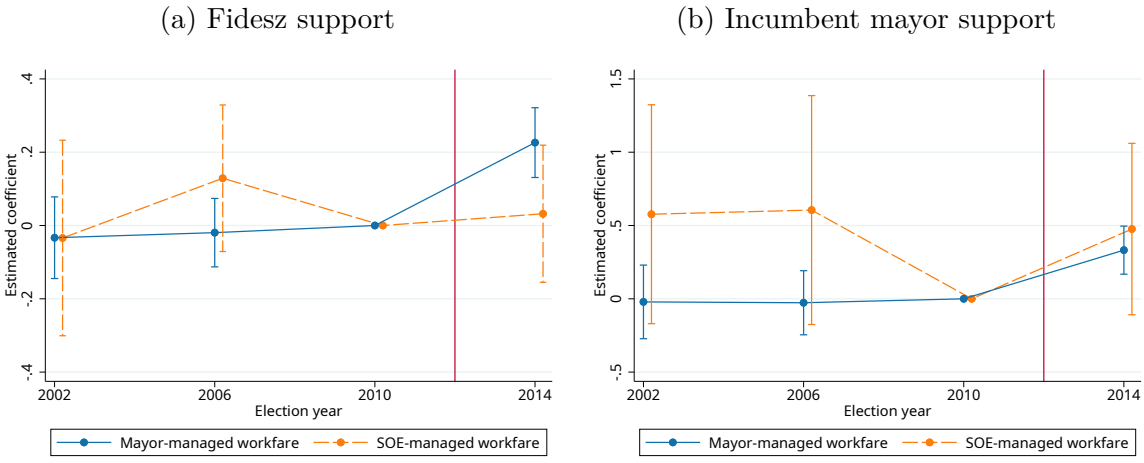
Note: This figure plots the estimated coefficients $\hat{\beta}_j$ from Equation (3), where the dependent variable is the number of incumbent-mayor votes as a share of eligible voters. The specification includes pre-2014 municipality characteristics (educational attainment shares, unemployment rate, log income per capita, log population, share of Roma minority, employment rate, and one-digit occupational shares), each interacted with election-year fixed effects. The vertical line marks the timing of the 2011 welfare reform. Standard errors are clustered at the microregion level (175 units). Error bars represent 95% confidence intervals.

Figure 5: The effect of residual Fidesz support on workfare allocation



Note: These figures plot the estimated coefficients $\hat{\gamma}_j$ from Equation (7). Panel (a) shows results where the dependent variable is the number of workfare participants as a share of the working-age population. Panel (b) shows results from two separate regressions in which the dependent variables are mayor-managed workfare and state-owned enterprise-managed workfare, each expressed as a share of the working-age population. All specifications include pre-2014 municipality characteristics (educational attainment shares, unemployment rate, log income per capita, log population, share of Roma minority, employment rate, one-digit occupational shares, and microregion fixed effects), each interacted with month fixed effects. The solid vertical line marks the date of the national election (April 2014), and the dashed vertical line marks the date of the local election (October 2014). Standard errors are clustered at the microregion level (175 units). Error bars represent 95% confidence intervals..

Figure 6: The impact of mayor-managed and SOE-managed workfare on election outcomes



Note: These figures plot the estimated coefficients $\hat{\beta}_j$ from Equation (3). Panel (a) reports results from two separate regressions where the dependent variable is Fidesz votes as a share of eligible voters, and the key explanatory variables are mayor-managed and state-owned enterprise (SOE)–managed workfare as a share of the working-age population. Panel (b) reports analogous regressions using incumbent-mayor votes as the dependent variable. All specifications include pre-2014 municipality characteristics (educational attainment shares, unemployment rate, log income per capita, log population, share of Roma minority, employment rate, and one-digit occupational shares), each interacted with election-year fixed effects. The vertical line marks the timing of the 2011 welfare reform. Standard errors are clustered at the microregion level (175 units). Error bars represent 95% confidence intervals.

Table 1: Election results and turnout

Panel A: National elections

	Fidesz & KDNP	Center left	Far right	Far left	Green	Turnout
2002	41.82	**47.62**	4.37	2.16	.	70.53
2006	42.03	**49.71**	2.2	.41	.	67.83
2010	**52.73**	19.3	16.67	.11	7.48	64.38
2014	**43.55**	26.21	20.69	.57	5.47	61.24
2018	**47.36**	17.95	19.8	.28	7.31	70.22
2022	**54.13**	34.44	5.88	.	.	69.59

Panel B: Mayoral elections

	Fidesz & KDNP	Center left	Far right	Far left	Green	Independent	Turnout
2002	3.82	6.3	.06	.22	0	87.59	51.05557
2006	7.34	4.62	.19	.06	0	85.06	53.06083
2010	18.87	1.55	.13	.06	.03	78.12	46.54561
2014	19.76	1.07	.44	.03	0	77.44	44.34478
2019	18.81	.44	0	.03	.69	78.24	48.59381

Note: This table reports aggregate electoral outcomes. Panel (a) presents results for parliamentary elections from 2002 to 2022 for party lists, and Panel (b) presents results for mayoral elections from 2002 to 2019. Fidesz ran jointly with the Hungarian Democratic Forum (Magyar Demokrata Fórum) in 2002, and with the Christian Democratic People's Party (Keresztény Demokrata Néppárt) from 2006 to 2022. Center-left parties include the Hungarian Socialist Party (Magyar Szocialista Párt), the Alliance of Free Democrats (Szabad Demokraták Szövetsége), the Democratic Coalition (Demokratikus Koalíció), and Dialogue for Hungary (Párbeszéd Magyarországért). Far-right parties include the Movement for a Better Hungary (Jobbik) and the Hungarian Justice and Life Party (Magyar Igazság és Élet Pártja). The far-left party is the Workers' Party (Munkáspárt), and the green party is Politics Can Be Different (Lehet Más a Politika). Bold numbers denote the parties of the governing coalition.

Table 2: Correlates of public work share

	Coefficient	Standard error	N	R^2
Primary school share	25**	1.6	3176	.55
Vocational share	22**	4.1	3176	.1
High school share	-39**	2.1	3176	.49
College share	-22**	4.2	3176	.31
Unemployment rate	62**	3.1	3152	.52
Log income per capita	-11**	.86	3176	.55
Log population	-.83**	.082	3176	.31
Share of Roma minority	55**	3.7	3176	.43
Share of employed	2.6	2.2	3176	.0096
Fidesz support, 2010	.0042	.035	3174	.000048
Fidesz voteshare, 2010	.11**	.037	3174	.068
Turnout, 2010	-27**	2	3174	.19

Notes: This table reports correlates of workfare as a share of the working-age population. Each row shows a bivariate regression where the dependent variable is the workfare share in April 2014 ($WF_{i,2014m4}$) and the independent variable is listed in the first column. Regressions are weighted by the number of eligible voters. Standard errors are clustered at the microregion level (175 units). +, *, ** indicate significance at the 10, 5, and 1 percent levels, respectively.

Table 3: The effect of workfare on national election outcomes

	Fidesz votes as a share of eligible voters		Fidesz vote share	Turnout
	(1)	(2)	(3)	(4)
Workfare × Post	0.107*	0.217**	0.248**	0.0767*
	(0.0425)	(0.0452)	(0.0546)	(0.0347)
Municipality & election year FE	Yes	Yes	Yes	Yes
Controls		Yes	Yes	Yes
R^2	0.888	0.894	0.897	0.896
N	12488	12484	12484	12484

Notes: This table reports the effect of workfare intensity on political support for Fidesz and voter turnout in national elections between 2002 and 2014. The dependent variable in Columns 1–3 is the number of Fidesz votes as a share of eligible voters; Column 5 reports the Fidesz vote share among valid votes, and Column 6 shows effects on overall turnout. Controls include pre-2014 municipality characteristics (educational attainment shares, unemployment rate, log income per capita, log population, share of Roma minority, employment rate, and one-digit occupational shares), each interacted with a $Post_t$ dummy variable. Regressions are weighted by the number of eligible voters, and standard errors are clustered at the microregion level (175 units). +, *, ** indicate significance at the 10, 5, and 1 percent levels, respectively.

Table 4: The effect of workfare on local election outcomes

	Incumbent mayor votes as a share of eligible voters			Incumbent mayor vote share	Turnout
	(1)	(2)	(3)	(4)	(5)
Workfare × Post	0.213**	0.325**	0.520**	0.534**	0.0697
	(0.0482)	(0.0645)	(0.0732)	(0.176)	(0.0577)
Municipality & election year FE	Yes	Yes		Yes	Yes
Controls		Yes	Yes	Yes	Yes
Lagged support of the incumbent			Yes		
R^2	0.622	0.624	0.380	0.473	0.768
N	10262	10259	6188	10259	12422

Notes: This table reports the effect of workfare intensity on political support for incumbent mayors and voter turnout in local elections between 2002 and 2014. The dependent variable in Columns 1–4 is the number of incumbent mayor votes as a share of eligible voters; Column 5 reports the incumbent mayor vote share among valid votes, and Column 6 shows effects on overall turnout. Controls include pre-2014 municipality characteristics (educational attainment shares, unemployment rate, log income per capita, log population, share of Roma minority, employment rate, and one-digit occupational shares), each interacted with a $Post_t$ dummy variable. Regressions are weighted by the number of eligible voters, and standard errors are clustered at the microregion level (175 units). +, *, ** indicate significance at the 10, 5, and 1 percent levels, respectively.

Table 5: The effect of residual Fidesz support on workfare allocation

	Total workfare				Mayor-managed workfare	SOE-managed workfare
	(1)	(2)	(3)	(4)	(5)	(6)
BrokerResidual × Post	0.0572**	0.0573**	0.0321**	0.0321**	0.0329**	-0.000865
	(0.0152)	(0.0141)	(0.00904)	(0.00895)	(0.00983)	(0.00423)
Municipality & month FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls		Yes	Yes	Yes	Yes	Yes
Subregion-time FE			Yes	Yes	Yes	Yes
Unemployment			Yes	Yes	Yes	Yes
Workfare 2014m4				Yes	Yes	Yes
R^2	0.914	0.915	0.960	0.960	0.949	0.843
N	49872	49872	49872	49872	49872	49872

Notes: This table reports the effect of residual Fidesz support on workfare allocation by estimating Equation (7). The residual measure, $BrokerResidual$, is constructed as described in Equation (6), capturing unexplained variation in Fidesz votes relative to eligible voters after conditioning on local characteristics. Columns 1–4 present results for total workfare allocation, Column 5 focuses on mayor-managed workfare, and Column 6 reports results for workfare managed by state-owned enterprises (SOEs). Controls include pre-2014 municipality characteristics (educational attainment shares, unemployment rate, log income per capita, log population, share of Roma minority, employment rate, and one-digit occupational shares), each interacted with a $Post_t$ dummy variable. Regressions are weighted by the number of eligible voters, and confidence intervals, shown in brackets, are calculated using the bootstrap method.

Table 6: The effect of mayor-managed and SOE-managed workfare on election outcomes

	Full sample		Positive SOE exposure	
	(1) Fidesz support	(2) Incumbent-mayor support	(3) Fidesz support	(4) Incumbent-mayor support
Mayor-managed workfare × Post	0.244**	0.341**	0.268**	0.427**
	(0.0509)	(0.0692)	(0.0526)	(0.0838)
SOE-managed workfare × Post	0.00117	0.0670	-0.0102	-0.205
	(0.0866)	(0.238)	(0.0968)	(0.278)
Municipality & election-year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
p-value: equal effects	0.0234	0.282	0.0179	0.0354
R^2	0.894	0.624	0.896	0.611
N	12484	10259	9071	7534

Notes: This table reports the effect of mayor-managed and state-owned enterprise (SOE)–managed workfare on political outcomes. Columns 1–3 show the effect on Fidesz vote share relative to the number of eligible voters by estimating Equation (1), while Columns 4–6 report the effect on incumbent mayor votes relative to eligible voters by estimating Equation (2). Controls include pre-2014 municipality characteristics (educational attainment shares, unemployment rate, log income per capita, log population, share of Roma minority, employment rate, and one-digit occupational shares), each interacted with a $Post_t$ dummy variable. Regressions are weighted by the number of eligible voters, and standard errors are clustered at the microregion level (175 units). +, *, ** indicate significance at the 10, 5, and 1 percent levels, respectively.

Table 7: Heterogeneous effect of workfare

Panel A: Heterogeneous Effects of Workfare on Fidesz Support						
	Mayoral competition		Political affiliation of incumbent mayor		Education	
	(1) Low	(2) High	(3) Fidesz	(4) Independent	(5) Low	(6) High
Workfare × Post	0.140*	0.313**	0.355**	0.176**	0.168**	0.213*
	(0.0583)	(0.0770)	(0.0722)	(0.0511)	(0.0550)	(0.107)
p-value: equal effects	0.050		0.029		0.709	
Municipality & year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.877	0.901	0.896	0.890	0.809	0.929
N	6163	3008	1841	10515	4163	4157
Panel B: Heterogeneous Effects of Workfare on Incumbent Mayor Support						
	Mayoral competition		Political affiliation of incumbent mayor		Education	
	(1) Low	(2) High	(3) Fidesz	(4) Independent	(5) Low	(6) High
Workfare × Post	0.263*	0.508**	0.498**	0.202**	0.338**	0.424
	(0.116)	(0.138)	(0.136)	(0.0666)	(0.0811)	(0.268)
p-value: equal effects	0.193		0.046		0.753	
Municipality & year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.591	0.591	0.659	0.608	0.557	0.589
N	5150	2367	1581	8572	3514	3306

Notes: This table reports the effect of workfare on Fidesz support by using subsamples. Column 1 and 2 split the sample by educational attainment, column 3 and 4 split the sample by unemploment rate in 2013, and column 5 and 6 split the sample by local electoral competition in 2010. Mayoral election competition is measured by the number of candidates. Regressions are weighted by the number of eligible voters and standard errors are clustered at the municipality level. +, *, ** indicate significance at the 0.1, 0.05 and 0.01 levels, respectively.

Decentralized but Dependent: Clientelism through Workfare

Online Appendix

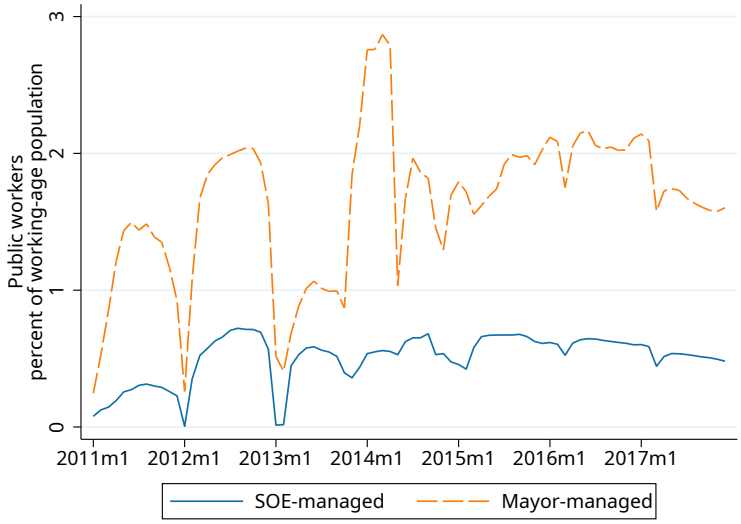
Attila Gáspár[*] Győző Gyöngyösi[†] Balázs Reizer[‡]

- Appendix A presents additional tables and figures
- Appendix B presents the model
- Appendix C provides proofs of the propositions

[*]Gáspár: KRTK-KTI, gaspar.attila@krtk.hu.
[†]Gyöngyösi: Utrecht University; g.gyongyosi@uu.nl.
[‡]Reizer: KRTK-KTI, reizer.balazs@krtk.hu.

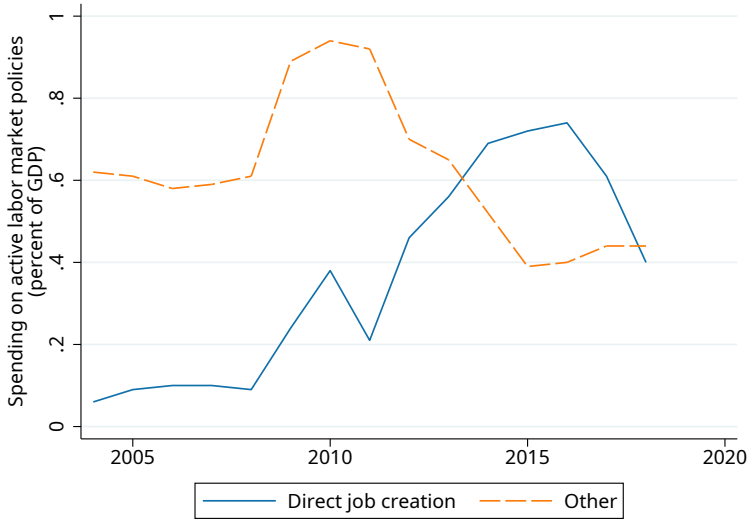
A Additional figures and tables

Figure A.1: Share of public workers relative working age population by subprograms



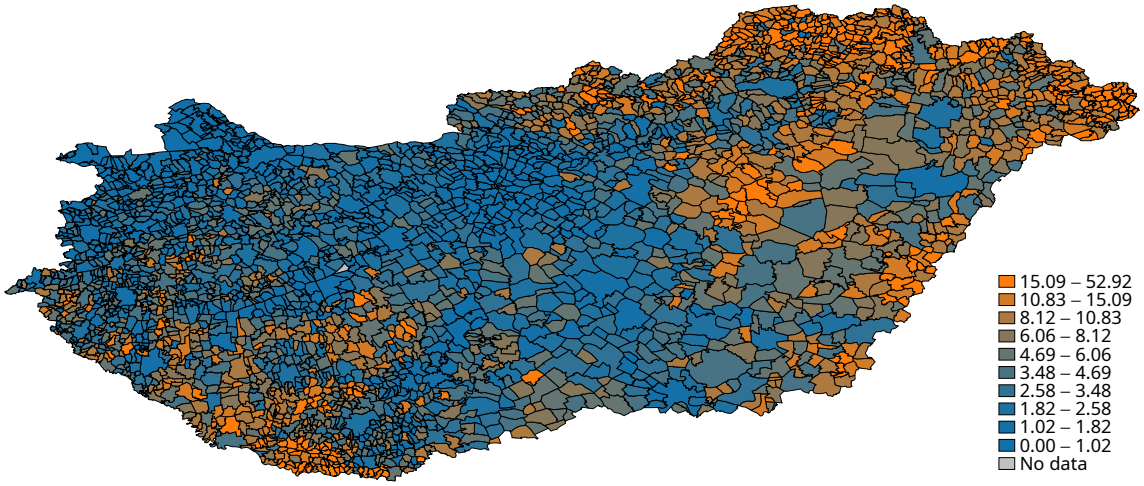
Note: This figure displays the participation rate in various public work subprograms, calculated as the number of participants divided by the working-age population.

Figure A.2: Spending on active labor market policies in Hungary



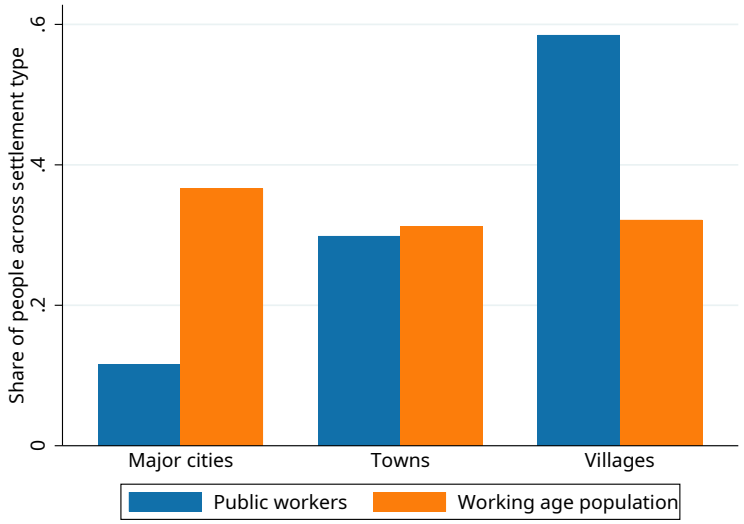
Note: This figure plots the spending on active labor market policies in Hungary as a share of GDP. The blue line represents spending on direct job creation and the orange line represents spendingon all other policies. Data source: OECD.

Figure A.3: Spatial distribution of the share of public workers in April 2014



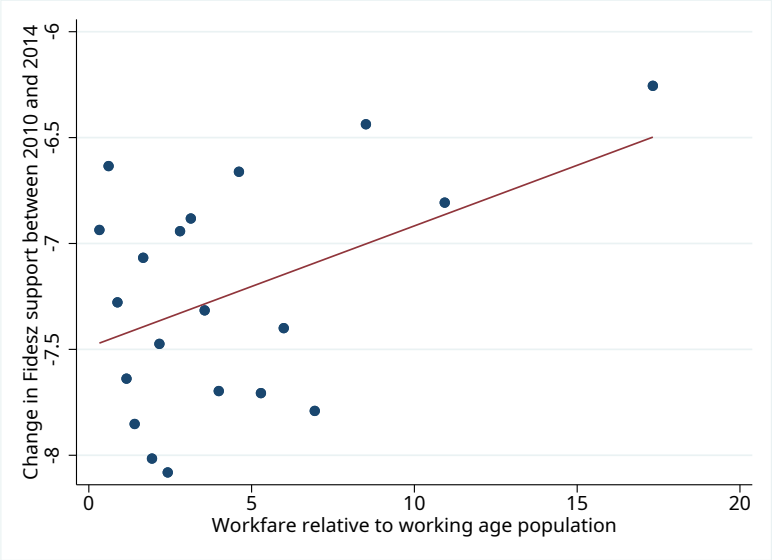
Note: This figure shows that spatial distribution of the share of public workers relative to working age population. The coloring corresponds to the deciles of public work share.

Figure A.4: Public workers and working age population by municipality type



Note: This figure plots the share of public workers and working age population in April 2014 across municipality types. Municipalities are categorized into three groups: major cities (cities with county rights), towns and villages.

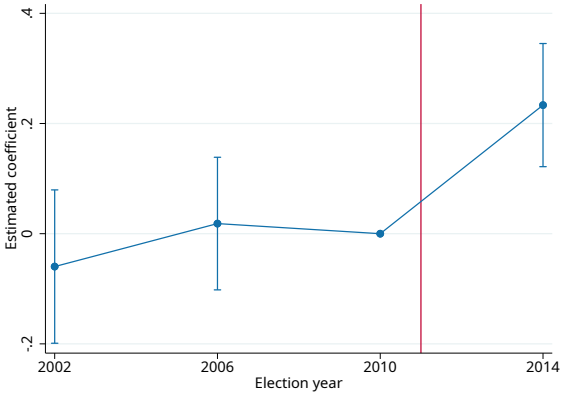
Figure A.5: Workfare and change in Fidesz supportnew



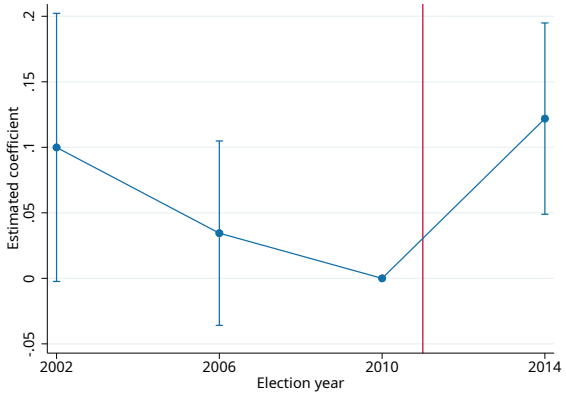
Note:

Figure A.6: Dynamic impact of workfare on national elections

(a) Fidesz vote share



(b) Turnout

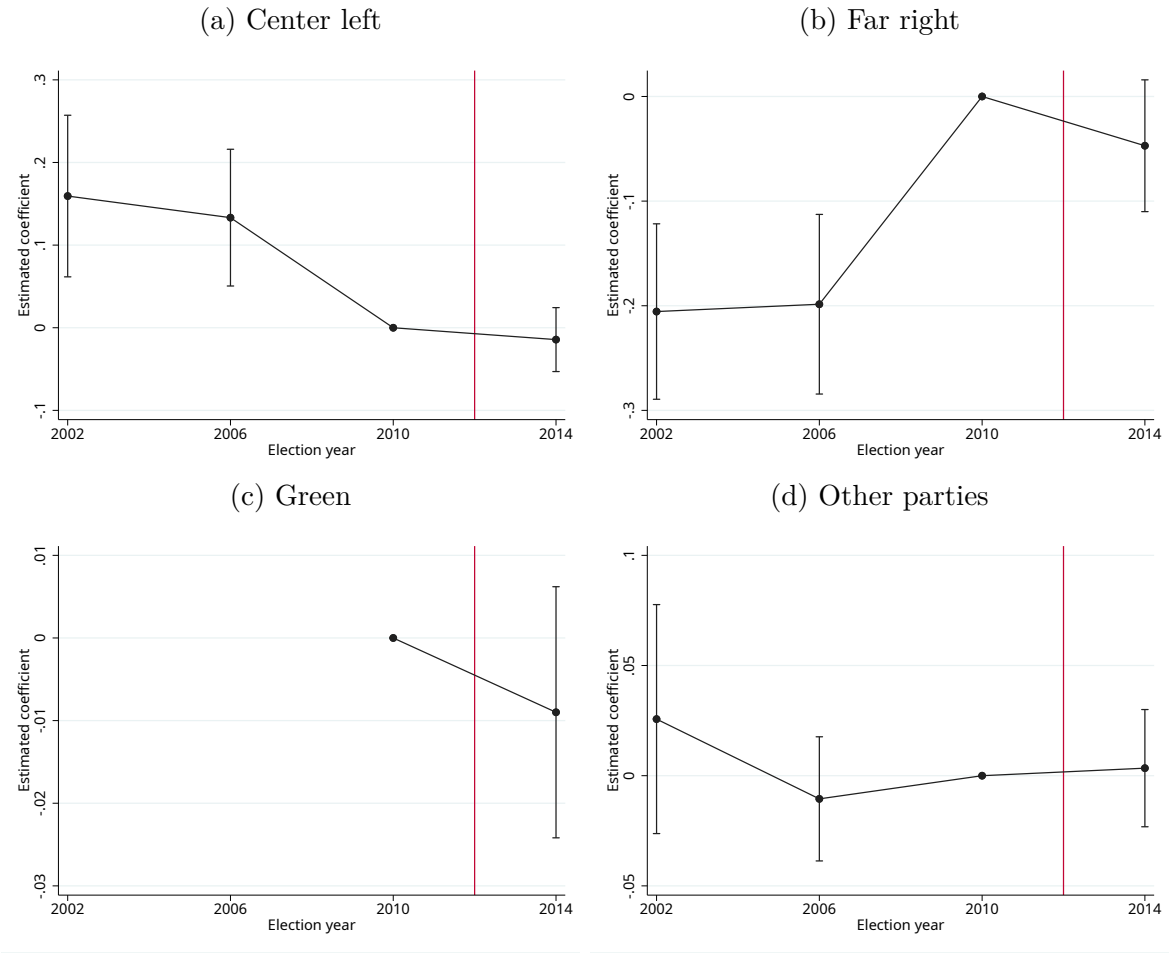


Note: These figures plots the $\hat{\beta}_j$ coefficients from estimating the effect of workfare on Fidesz vote share and turnout by estimating Equation (3):

$$Y_{it} = \alpha_i + \delta_t + \sum_{j \neq 2010} \beta_j WF_{i,2014m4} \times I(j = t) + \Gamma X_{it} + \varepsilon_{it}.$$

Controls are pre-2014 municipality characteristics interacted with a *Post* dummy. Controls include log population, educational shares, unemployment rate, log per capita income, share of Roma minority, share of employed, 1-digit occupational shares among employed. Regressions are weighted by the number of eligible voters and standard errors are clustered at the municipality level. .

Figure A.7: Dynamic impact of workfare on other parties

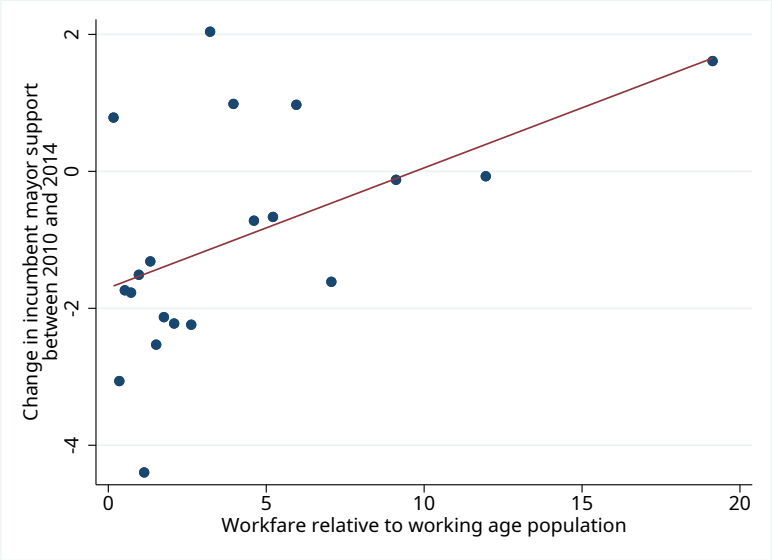


Note: This figures plots the $\hat{\beta}_j$ coefficients from estimating the effect of workfare on the political support of other parties from the following difference-in-differences regression:

$$Y_{it} = \alpha_i + \delta_t + \sum_{j \neq 2010} \beta_j WF_{i,2014m4} \times I(j = t) + \Gamma X_{it} + \varepsilon_{it}.$$

The center left parties are Hungarian Socialist Party, Alliance of Free Democrats, Democratic Coalition, Dialogue for Hungary. The green party is Politics Can Be Different. The far right parties are Movement for a Better Hungary and Hungarian Justice and Life Party. Political support is measured by the share of votes relative to the eligible number of voters. Controls are pre-2014 municipality characteristics interacted with a *Post* dummy. Controls include log population, educational shares, unemployment rate, log per capita income, share of Roma minority, share of employed, 1-digit occupational shares among employed. Regressions are weighted by the number of eligible voters and standard errors are clustered at the municipality level.

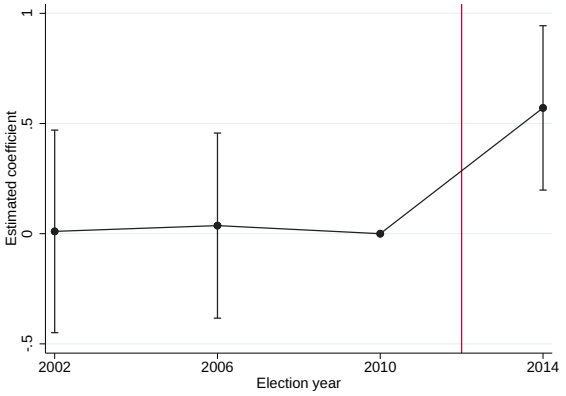
Figure A.8: Workfare and change in incumbent mayor supportnew



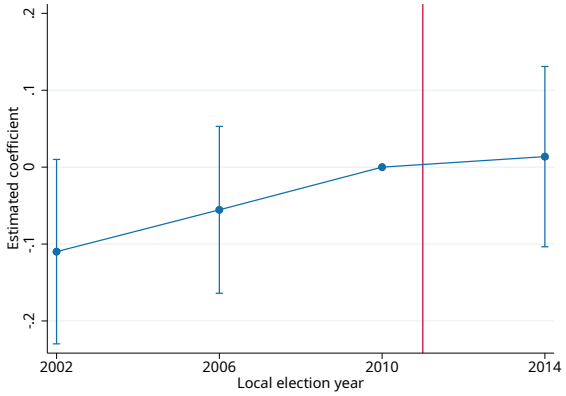
Note:

Figure A.9: Dynamic impact of workfare on local elections

(a) Incumbent mayor vote share



(b) Turnout



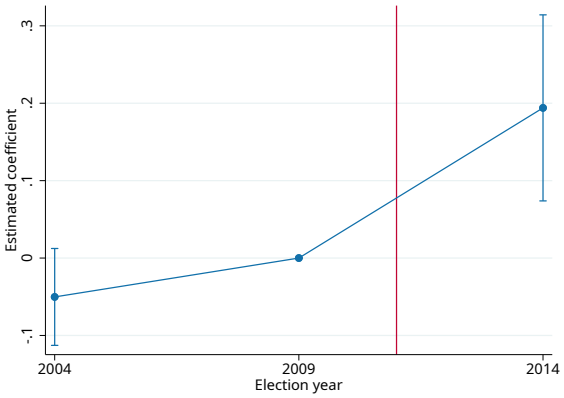
Note: This figures plots the $\hat{\beta}_j$ coefficients from estimating the effect of workfare on incumbent mayor vote share and local election turnout from the following difference-in-differences regression:

$$Y_{it} = \alpha_i + \delta_t + \sum_{j \neq 2010} \beta_j PW_{i,2014m4} \times I(j = t) + \Gamma X_{it} + \varepsilon_{it}$$

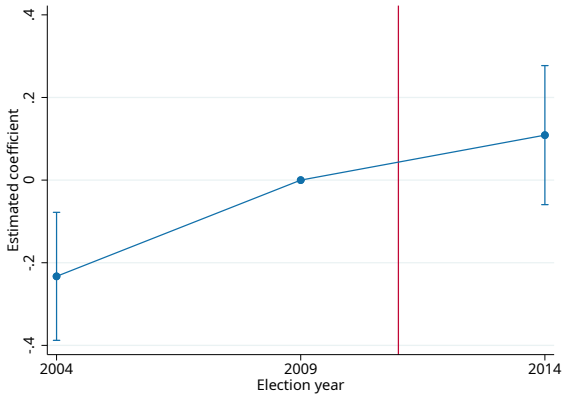
Controls are pre-2014 municipality characteristics interacted with a *Post* dummy. Controls include log population, educational shares, unemployment rate, log per capita income, share of Roma minority, share of employed, 1-digit occupational shares among employed. Regressions are weighted by the number of eligible voters and standard errors are clustered at the municipality level.

Figure A.10: Dynamic impact of workfare on European Parliamentary election outcomes

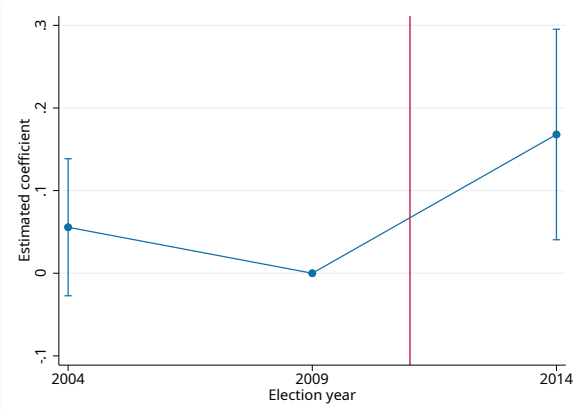
(a) Fidesz votes relative to eligible voters



(b) Fidesz vote share



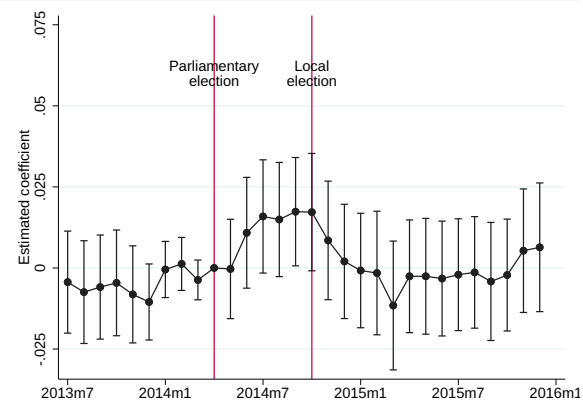
(c) Turnout



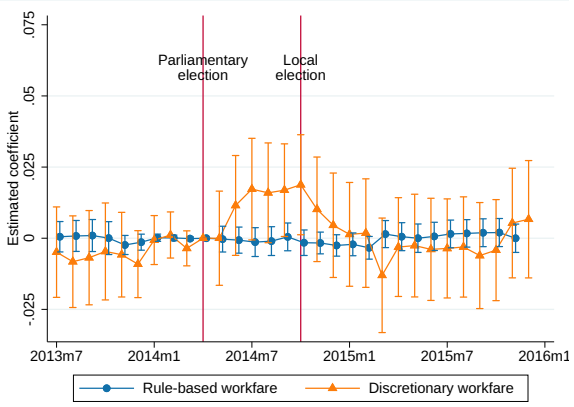
Note: This figures plots

Figure A.11: The effect of Fidesz support on workfare

(a) Total workfare



(b) By workfare allocation type



Note: This figure plots the $\hat{\gamma}_j$ coefficients from estimating the effect of Fidesz vote share in April 2014 on the public work share from the following difference-in-differences regression:

$$PW_{it} = \alpha_i + \delta_t + \gamma Fidesz_{i,2014m4} \times I(j = t) + \Gamma X_{it} + \varepsilon_{it}$$

Table A.1: Correlates of change in public work share between 2013m10 and 2014m4

	Coefficient	Standard error	N	R^2
Primary school share	6.3**	.62	3176	.15
Vocational share	5.8**	2.1	3176	.032
High school share	-9.3**	1.2	3176	.13
College share	-5.9**	.68	3176	.098
Unemployment rate	18**	1.6	3152	.18
Log income per capita	-2.6**	.29	3176	.14
Log population	-.21**	.024	3176	.092
Share of Roma minority	16**	1.9	3176	.17
Share of employed	.49	.81	3176	.0015
Fidesz support, 2010	.00063	.013	3174	5.0e-06
Fidesz voteshare, 2010	.026+	.014	3174	.016
Turnout, 2010	-6.5**	1.3	3174	.05

Notes: This table reports correlates of workfare share. Each row represents a bivariate regression where the left hand side variable is change in workfare share between October 2013 and April 2014, $WF_{i,2014m4}$, and the right hand side variable is listed in the first column. The regressions are weighted by the number of eligible voters. Standard errors are clustered at the microregion level (175 units). +, *, ** indicate significance at the 0.1, 0.05 and 0.01 levels, respectively.

Table A.2: Survey evidence on the party preference and voting intention of public workers

	Pr(Fidesz support)			Pr(Intends to vote)		
	(1)	(2)	(3)	(4)	(5)	(6)
Workfare participant	0.144**	0.134**	0.113*	0.168**	0.169**	0.174**
	(0.0464)	(0.0466)	(0.0446)	(0.0515)	(0.0512)	(0.0505)
Wave FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls		Yes	Yes		Yes	Yes
County FE			Yes			Yes
R^2	0.00505	0.0111	0.0687	0.0210	0.0528	0.0735
Observations	9280	9280	9280	9280	9280	9280

Notes: The table presents the estimates of public worker status on Fidesz support and turnout using linear probability models. The omitted baseline category is the unemployed. The survey data was collected in October 2014.

The control variables are education, gender, age, household size, employment status. The regressions are weighted. Robust standard errors are in parentheses.

** = significant at 1-percent level; * = significant at 5-percent level; + = significant at 10-percent level.

Table A.3: Entrenchment of the incumbent mayor

	Incumbent mayor wins		Incumbent mayor runs	Number of candidates
	(1)	(2)	(3)	(4)
	Unconditional	Conditional on running		
Workfare × Post	1.218**	0.900**	0.478	-0.00345
	(0.380)	(0.340)	(0.332)	(0.00409)
Municipality & election year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
R^2	0.231	0.288	0.255	.
N	12422	10259	12422	12420

Notes: This table reports the effect of

Table A.4: Balancedness for the propensity score matched sample

	Treatment	Control	Treatment-Control Diff.	t-statistic	Normalized Diff.
Primary school share	0.48	0.47	0.01	0.99	0.07
Vocational school share	0.23	0.24	–0.00	-0.37	-0.02
High school share	0.21	0.21	–0.00	-1.02	-0.07
College share	0.07	0.08	–0.00	-0.53	-0.04
Unemployment rate	0.10	0.10	0.00	1.15	0.08
Log income per capita	7.12	7.15	–0.02	-1.39	-0.13
Log population	8.04	8.26	–0.21	-1.21	-0.13
Share of Roma population	0.05	0.04	0.01	1.59	0.12
Employment share	0.70	0.71	–0.00	-0.28	-0.02
Occupation code 1 share	0.04	0.05	–0.01**	-3.81	-0.35
Occupation code 2 share	0.08	0.08	–0.00	-0.07	-0.00
Occupation code 3 share	0.12	0.12	–0.01*	-2.14	-0.14
Occupation code 4 share	0.05	0.06	–0.00*	-2.17	-0.20
Occupation code 5 share	0.12	0.13	–0.01**	-3.94	-0.30
Occupation code 6 share	0.02	0.01	0.00*	2.41	0.13
Occupation code 7 share	0.12	0.12	–0.00	-0.84	-0.06
Occupation code 8 share	0.13	0.14	–0.01**	-3.08	-0.22
Occupation code 9 share	0.32	0.28	0.05**	6.61	0.44

Notes: This table reports the effect of

Table A.5: Robustness checks for the effect of workfare on Fidesz vote share

Panel A: Fidesz support	Propensity score matched sample	Full sample	Unweighted
	(1)	(2)	(3)
Workfare × Post	0.124*	0.187**	0.123**
	(0.0509)	(0.0474)	(0.0470)
Municipality & Year FE	Yes	Yes	Yes
Municipality controls	Yes	Yes	Yes
N	8197	12576	12484
Panel B: Incumbent mayor support	Propensity score matched sample	Full sample	Unweighted
	(1)	(2)	(3)
Workfare × Post	0.232**	0.308**	0.223**
	(0.0773)	(0.0712)	(0.0588)
Municipality & Year FE	Yes	Yes	Yes
Municipality controls	Yes	Yes	Yes
N	6837	10328	10259

Notes: This table reports the effect of

Table A.6: Robustness checks

Panel A: Fidesz support					
	Labor market shocks and poverty			Campaigning proxies	
	(1)	(2)	(3)	(4)	(5)
Workfare × Post	0.158**	0.184**	0.151**	0.218**	0.215**
	(0.0457)	(0.0466)	(0.0473)	(0.0453)	(0.0450)
Municipality & Year FE	Yes	Yes	Yes	Yes	Yes
Municipality controls	Yes	Yes	Yes	Yes	Yes
Labor market controls	Yes		Yes		
Social transfers		Yes	Yes		
EU subsidy				Yes	
Campaign spending					Yes
N	12475	12484	12475	12484	12484
Panel B: Incumbent mayor support					
	Labor market shocks and poverty			Campaigning proxies	
	(1)	(2)	(3)	(4)	
Workfare × Post	0.324**	0.318**	0.310**	0.328**	
	(0.0943)	(0.0683)	(0.0939)	(0.0643)	
Municipality & Year FE	Yes	Yes	Yes	Yes	
Municipality controls	Yes	Yes	Yes	Yes	
Labor market controls	Yes		Yes		
Social transfers		Yes	Yes		
EU subsidy				Yes	
N	10250	10259	10250	10259	

Notes: This table reports the effect of

Table A.7: Workfare and European Parliamentary elections

	Fidesz votes as a share of eligible voters		Fidesz vote share	Turnout
	(1)	(2)	(3)	(4)
Workfare × Post	0.237**	0.211**	0.221**	0.152*
	(0.0421)	(0.0623)	(0.0670)	(0.0673)
Municipality & election year FE	Yes	Yes	Yes	Yes
Controls		Yes	Yes	Yes
R^2	0.893	0.901	0.869	0.917
N	9377	9368	9368	9368

Notes: This table reports the effect of

Table A.8: Effect of workfare on later elections

	(1) National (Fidesz)	(2) Local (Mayor)	(3) EP (Fidesz)
Panel A: Workfare exposure fixed at its 2014 level			
2014 workfare exposure × Post	0.111*	0.263**	0.141*
	(0.0448)	(0.0602)	(0.0560)
Municipality & election year FE	Yes	Yes	Yes
Controls	Yes	Yes	Yes
R^2	0.864	0.582	0.888
N	18738	12796	12381
Panel B: Workfare measured contemporaneously, 2014–2022			
Contemporaneous workfare	0.144**	0.483**	0.246**
	(0.0342)	(0.155)	(0.0383)
Municipality & election year FE	Yes	Yes	Yes
Controls	Yes	Yes	Yes
R^2	0.943	0.779	0.955
N	9381	4336	6014

Notes: This table reports the effect of

Table A.9: The effect of Fidesz voteshare in Parliamentary elections on workfare

	Total workfare		Mayor-managed workfare		SOE-managed workfare	
	(1)	(2)	(3)	(4)	(5)	(6)
Fidesz support × Post	0.0178**		0.0200**		-0.00221	
	(0.00479)		(0.00479)		(0.00224)	
Fidesz vote share × Post		0.0104**		0.0111**		-0.000713
		(0.00366)		(0.00378)		(0.00157)
Municipality & month FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Subregion-time FE	Yes	Yes	Yes	Yes	Yes	Yes
Unemployment	Yes	Yes	Yes	Yes	Yes	Yes
Workfare 2014m4	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.960	0.960	0.949	0.949	0.843	0.843
N	49888	49888	49888	49888	49888	49888

Notes: This table reports

Table A.10: The effect of Fidesz voteshare in Parliamentary elections on workfare by the incumbent mayor's party affiliation

	Total workfare		Mayor-managed workfare		SOE-managed workfare	
	(1) Fidesz mayor	(2) Independent mayor	(3) Fidesz mayor	(4) Independent mayor	(5) Fidesz mayor	(6) Independent mayor
Fidesz × Post	0.0456*	0.0236**	0.0498**	0.0257**	-0.00418	-0.00203
	(0.0184)	(0.00889)	(0.0185)	(0.00869)	(0.00679)	(0.00210)
Municipality & month FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Microregion-post	Yes	Yes	Yes	Yes	Yes	Yes
Occupation-post	Yes	Yes	Yes	Yes	Yes	Yes
Workfare (2014m4)-post	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.935	0.914	0.923	0.900	0.870	0.836
N	7376	42112	7376	42112	7376	42112

Notes: This table reports

Table A.11: The effect of Fidesz support in former Parliamentary elections on workfare

	Total workfare					
	(1)	(2)	(3)	(4)	(5)	(6)
Fidesz support in 2010 × Post	0.00753					
	(0.00522)					
Fidesz vote share in 2010 × Post		0.00463				
		(0.00435)				
Fidesz support in 2006 × Post			0.00553			
			(0.00436)			
Fidesz vote share in 2006 × Post				0.00205		
				(0.00352)		
Fidesz support in 2002 × Post					0.00336	
					(0.00463)	
Fidesz vote share in 2002 × Post						0.00153
						(0.00365)
Municipality & month FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Microregion-post	Yes	Yes	Yes	Yes	Yes	Yes
Occupation-post	Yes	Yes	Yes	Yes	Yes	Yes
Workfare (2014m4)-post	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.918	0.918	0.918	0.918	0.918	0.918
N	49888	49888	49776	49776	49616	49616

Notes: This table reports

Table A.12: Correlates of SOE-managed public work share

	Coefficient	Standard error	N	R^2
Primary school share	3.4**	.24	3176	.23
Vocational share	4.1**	.59	3176	.085
High school share	-5.3**	.47	3176	.22
College share	-3.3**	.44	3176	.16
Unemployment rate	6.9**	.77	3152	.14
Log income per capita	-1.5**	.1	3176	.25
Log population	-.13**	.0092	3176	.18
Share of Roma minority	5.8**	.87	3176	.11
Share of employed	.51	.39	3176	.0083
Fidesz support, 2010	.011*	.0052	3174	.0079
Fidesz voteshare, 2010	.023**	.0058	3174	.066
Turnout, 2010	-3.4**	.6	3174	.072

Notes:

Table A.13: Correlates of mayor-managed public work share

	Coefficient	Standard error	N	R^2
Primary school share	22**	1.6	3176	.52
Vocational share	18**	3.6	3176	.083
High school share	-33**	1.9	3176	.45
College share	-19**	3.8	3176	.28
Unemployment rate	55**	2.6	3152	.5
Log income per capita	-9.4**	.82	3176	.51
Log population	-.7**	.075	3176	.28
Share of Roma minority	49**	3	3176	.44
Share of employed	2.1	1.8	3176	.0078
Fidesz support, 2010	-.0069	.031	3174	.00016
Fidesz voteshare, 2010	.091**	.031	3174	.054
Turnout, 2010	-23**	1.7	3174	.18

Notes:

B The model

B.1 Voters and welfare

We build on the clientelism model of Bardhan and Mookherjee (2012). Clientelism is the exchange of political support (votes) for private goods offered by politicians. This model looks at how the policy bundles offered by politicians differ with and without clientelism and how they relate to the welfare optimal allocation. This model allows for k voter groups and a bundle of m elements. We first simplify it to have two only goods: one public (consumed by all voters) and one private (which is targetable); and to have two voter groups: the Poor and the Rich. The single private good is public work (i.e. participation in the workfare program), and it only gives positive utility to the Poor. For the sake of simplicity, we also simplify political competition at the national level. There is a Party in Government (G) who is running for re-election, and wants to maximize its re-election probability (its expected vote share). We assume away the policy platforms of the opposition candidate; these are incorporated in the random shocks to the popularity of G. Thus the re-election probability of G is fully characterized by its policies and the random shocks to its popularity.

Next we enrich this setting with an agency problem: for clientelism to happen, the principal (the Party in Government) needs an agent (the Mayor) to exert costly effort on its behalf. We do this to show what are the conditions under which clientelism is sustained in equilibrium.

The electorate consists of two groups (indexed by i): the Poor ($i = 1$) and the Rich ($i = 2$). Let μ_i denote the population share of group i. There are two policy dimensions: a common public good g, and a private good (workfare participation). Let q_i be the share of group i who receive workfare from the government. Group i voter's expected utility from the policy bundle is:

$$W_i = q_i v_i + V_i(g),$$

where v_i is group i-s valuation of workfare, and $V_i(g)$ is the group's (concave, increasing) utility from public services. We assume that $v_2 = 0$, so Rich voters derive no utility from workfare. From this also follows that $q_2 = 0$.

Let's assume that the government has a fixed budget (A) that can can be spent on the electorate, that workfare has a fixed unit cost of t, and that the level of public services (g) is continuous and has a unit cost of 1. Then the budget constraint of the government can be expressed as

$$\sum_i \mu_i q_i t + g = A.$$

Since $q_2 = 0$, a policy allocation is the vector $\{q_1, g\}$ with $g = A - \mu_1 q_1 t$, so the share of the Poor who receive workfare (q_1) in practice fully characterizes the allocation.

The utilitarian planner would maximize total utility, weighting each group's utility with their share in the population:

$$\max_{q_1} \ \mu_1 \left(q_1 + V_1(A - \mu_1 q_1 t)\right) + \mu_2 V_2(A - \mu_1 q_1 t)$$

In the optimal allocation the marginal utility of the Poor from workfare equals the population weighted marginal utilities from public service provision:

$$\frac{v_1}{t} = \mu_1 \frac{\partial V_1}{\partial g} + \mu_2 \frac{\partial V_2}{\partial g} \tag{B.9}$$

This implicitly pins down the optimal level of g^*, from which q_1^* can be calculated.

B.2 The allocation problem under elections

An individual voter has two motives to vote. The non-instrumental motive represents the political preference for the policy platform of the Party in Government (G). This is the intrinsic value of voting for a candidate of one's choice. The instrumental motive means that the election outcome can directly enter voter utility through the decisions of the winner. For example, if a winner can punish those who did not vote for them, this creates an instrumental motive for voting as opposed to the more "abstract" non-instrumental political preference. One may want to vote for a candidate who supports public work because they also like the abstract idea of workfare; another voter may want to vote for the same candidate because of the threat of *losing* workfare they already have. Clientelism operates through the instrumental motive. The weights of the two motives are θ and $(1-\theta)$ in our model.

Consider a workfare-recipient Poor voter. If the voter votes for G and G is reelected, the voter will have workfare with probability q_1. However, if the voter did not vote for G and G is reelected, non-cooperating workfare recipients will be excluded from workfare with probability z, so the expected probability of retaining workfare is $q_1(1-z)$. Consequently, the instrumental utility will depend on the ex ante assessment of the voter that G would win the election, which we denote by γ. The total impact on instrumental utility of voting for G is thus $\gamma z q_1 v_1$.

We assume that a voter votes for G if their expected utility from choosing G exceeds a random utility shock ϵ_i which incorporates their personal preferences and the exogenous popularity of the opposition party. We do not model opposition policy choices beyond this. So voter i votes for G if the weighted average of their evaluation of the policy platform of G and the potential threat of being excluded from workfare exceeds a random threshold:

$$\theta\left(V_i(g)+q_i v_i)\right)+(1-\theta)\left(\gamma z q_i v_i\right)>\epsilon_i.$$

We assume that popularity shocks ϵ_i are both distributed uniformly, but we let their parameters differ for the Poor and the Rich capturing that one of the two groups might be more likely to swing either way in the elections (the one that has higher σ_i). The mean values of the shocks are l_i, the densities are σ_i, the ranges are $1/\sigma_i$. Since $v_2=0$ and consequently $q_2=0$, the Rich voters do not have an instrumental motive to vote, so the probability of voting for the government (π, which equals the expected vote share $E[s]$) is given by

$$\pi=E[s]=\kappa+\mu_1\sigma_1\left(\theta\left(V_1(g)+q_1 v_1)\right)+(1-\theta)\left(\gamma z q_1 v_1\right)\right)+\mu_2\sigma_2\theta V_2(g), \tag{B.10}$$

where $\kappa=1/2+\sum_i \mu_i\sigma_i l_i$ is the baseline probability of winning that is coming from the relative popularity of G disregarding its policy platform. The goal of G is to maximize this vote share in the election.

Lemma, from Bardhan and Mookherjee (2012): In this setting G will provide less public services and more workfare if clientelism is possible, compared to both the welfare-maximizing allocation (where a benevolent dictator decides over the policy bundle, exclusively considering voter utility). and the allocation under elections without clientelism (where the only motivation to deviate from the welfare-maximizing allocation is that some voters are more likely to swing their votes than others, see the Appendix A for details).

$$(q_1^{*,O}<)\,q_1^{*,E}<q_1^{*,C}.$$

B.3 Clientelism with a principal-agent problem

Assume now that there are two separate elections: a national, and a local. National elections come first, but during both elections only another player, the mayor can enforce clientelism.

This means that in our model z is a choice variable of the mayor (henceforth called M). They decide whether to monitor/coerce voters before any election. If M pays an exogenous cost $c > 0$, they can set $z = \overline{z} > 0$; if they decide not to, $z = 0$ and voters are neither monitored nor coerced.

M has an incentive to co-operate with G, because the amount of workfare received has an impact on their own re-election probability $m(q_1)$, which which we assume to be strictly increasing and concave in q_1.

If M could commit to a cooperation decision openly, then G would set $q_1 = q_1^{*,C}$ if M paid the cost, while $q_1 = q_1^{*,E}$ if they did not. We assume, however, that this decision is not observed by the central government. Instead, the game proceeds as follows:

1. G decides whether to co-opt the mayor or not. If it co-opts, then it sets $q_1 = q_1^{*,C}$ and announces $\underline{s}$ minimum required vote share during national elections. If G does not co-opt, it sets $q_1 = q_1^{*,E}$.

2. If co-opted, the mayor decides whether to cooperate (pay the effort cost and engage in clientelism during national elections for G's sake).

3. National election is held.

4. If the vote share of G is above the threshold $\underline{s}$, nothing happens, G maintains the level of public work allocated to the town until the mayoral elections. If the vote share falls below $\underline{s}$, the amount of public work allocated to the town is cut back to $q_1 = q_1^{*,E}$ as a punishment meted out against M. [29]

5. M decides whether or not to engage in clientelism during mayoral elections.

6. Mayoral election is held.

To characterize the conditions under which clientelism happens in this setting, let's introduce two probabilities, which are endogenous variables of the model. Let p_H denote the probability that M gets punished before their own election given they have not cooperated. Let p_L denote the probability that they get punished in case she has cooperated with G ($p_H > p_L$). We call the difference $p^H - p^L$ *incentive efficiency*: the higher is the difference between the chance of getting "punished" when "guilty" and the chance of getting "punished" when "innocent", the more likely that the prospect of punishment deters from non-cooperation.

Proposition 1: the condition for clientelism. G and M will engage in clientelism during national elections if

$$c < (p^H - p^L)\left(m(q_1^{*,C}) - m(q_1^{*,E})\right). \tag{B.11}$$

This means that the mayor is ceteris paribus more likely to engage in clientelism on behalf of the party in government

1. when incentive efficiency is higher,

2. and when public work has a higher marginal impact on mayoral races.

[29] It is not cut back even further, because that would mean hurting some voters who would have voted for G even without clientelism. This cut back might hurt re-election probability of G in an (unmodeled) future election.

Proof: We solve the game by backward induction. For the sake of simplicity we assume that the mayor always wants to engage in clientelism for their own sake.[30] How about national elections? Cooperation with G is optimal for M if their expected re-election probability under cooperation is higher than under non-cooperation, net of the cost of clientelism:

$$p^H m(q_1^{*,E}) + (1-p^H) m(q_1^{*,C}) < p^L m(q_1^{*,E}) + (1-p^L) m(q_1^{*,C}) - c$$

Rearranging this results in Inequality B.11. The mayor cooperates if the cost of cooperation is smaller than the product of two terms: incentive efficiency (the probability of being caught if not co-operating voters minus the probability of looking uncooperative when in fact the mayor had been coercing voters) and the marginal impact of clientelism on mayoral elections.

Corollary: no clientelism without negative incentives. If $p_H \leq p_L$ the mayor will not engage in clientelism as Inequality B.11 does not hold. This will be the case when $p_H = 0$ (for any reason G cannot take away public work from M).

Proposition 2: the determinants of incentive efficiency. Incentive efficiency is monotonically increasing in μ_1, σ_1, γ, z, $1-\theta$ and ν_1, so mayoral cooperation with G is more likely in the following cases: if the share of Poor is higher; if their vote is more likely to swing; if G is ex-ante perceived as more likely to win the national election; if non-cooperative voters are more easily excluded; if instrumental voting is relatively more important; and if Poor voters value workfare more.

Sketch of the proof: The Party in Government wants to maximize the difference between p^H and p^L as this ceteris paribus makes a mayor more likely to cooperate (by Proposition 1). It can do this by setting $\underline{s}$, as p^H (p^L) is the probability that the actual vote share falls below the threshold vote share $\underline{s}$ without (with) cooperating with G.

Let's denote the expected vote share as π^C if the mayor cooperates, and π^{NC} if the mayor does not. These are given by substituting $z = \overline{z}$ or $z = 0$ into Equation B.10, respectively. Then p^H is given by $p^H = Pr\left(s < \underline{s} | E(s) = \pi^{NC}\right)$ and p^L is given by $p^H = Pr\left(s < \underline{s} | E(s) = \pi^{C}\right)$. We can calculate the limiting values of these expressions using the central limit theorem.

From this we can calculate the optimal $\underline{s}$ for G, which is a weighted average of π^C and π^{NC}, in a way that the optimal $\underline{s}$ is closer to π^{NC} if π^{NC} is low, and closer to π^C if π^{NC} is high. The maximized $p^H - p^L$ value is monotonically increasing in the product

$$\mu_1 \sigma_1 (1-\theta) \gamma \overline{z} q_1^{*,C} \nu_1.$$

Since all of the parameters are positive, the product is an increasing function of all parameters.

C Proof of propositions

Lemma 1 from Bardhan and Mookherjee (2012): Let's denote the level of public services in utilitarian optimum by "$g^{*,O}$", the optimal choice with elections but without clientelism by "$g^{*,E}$" and the optimal choice under clientelism by "$g^{*,C}$". Then we have

$$g^{*,E} > g^{*,C},$$

If $\sigma_1 > \sigma_2$ is also true (the Poor are more likely to swing), then

[30] If the mayor does not want or need clientelism in their own election, she cannot be punished for not cooperating with G through taking away public work, so she will not be co-opted by the government. This would be the case if any of ν_1 or μ_1 were sufficiently low (there are few poor people and/or they value workfare less), or if there is a high enough baseline popularity for M. This is also the case if c is prohibitively high, because of high transparency of public life or because the mayor personally dislikes clientelism.

$$g^{*,O} > g^{*,E} > g^{*,C},$$

The converse is true for the share of workfare recipients, so

$$(q_1^{*,O} <) q_1^{*,E} < q_1^{*,C}.$$

That is, workfare is overproduced (and the public good is underproduced) in the electoral equilibrium if poor voters are relatively more likely to swing than rich voters; workfare is always overproduced (and the public good is underproduced) in a clientelistic equilibrium relative to the electoral equilibrium.

Proof: The first order condition for G's decision is:

$$\frac{\upsilon_1}{t}\sigma_1\left(1+\frac{1-\theta}{\theta}\gamma z\right)=\mu_1\sigma_1\frac{\partial V_1}{\partial g}+\mu_2\sigma_2\frac{\partial V_2}{\partial g} \tag{C.12}$$

Imagine first that $z=0$, so the clientelistic motive is not present, as recipients cannot be excluded from workfare. Note that even in this case the vote-maximizing allocation is different from the welfare-maximizing allocation. If $\sigma_1 > \sigma_2$, meaning that the Poor vote is more amenable to swings than the Rich vote, then workfare will be underprovided while the private good (consumed by the Poor only) will be overprovided relative to the welfare-maximizing allocation. Conversely, the public good will overprovided if the Rich vote is more likely to swing.

The term in parenthesis, $1+\frac{1-\theta}{\theta}\gamma z$ represents the scope for clientelism. Note that it is always greater then one when $\theta < 1$, $z > 0$ and $\gamma > 0$, that is, if instrumental voting has non-zero weight, "deserting" workfare recipients can be excluded with at least some probability, and G has a non-zero ex ante chance of re-election.

Proposition 2: Let's denote the probability of voting for the government in national elections under clientelism as:

$$\pi^C=\kappa+\mu_1\sigma_1\left(\theta\left(V_1(g)+q_1\upsilon_1\right)\right)+(1-\theta)\left(\gamma z q_1\upsilon_1\right)\right)+\mu_2\sigma_2\theta V_2(g)$$

.

If the mayor shirks his clientelistic duties ($z=0$), this reduces to

$$\pi^{NC}=\kappa+\mu_1\sigma_1\theta\left(V_1(g)+q_1\upsilon_1\right)\right)+\mu_2\sigma_2\theta V_2(g)$$

.

From the point of view of the mayor, every individual ballot cast is a Bernoulli-trial with success probabilities $\pi^{C,NC}$ depending on the mayors' action; with corresponding variance $\delta^2_{C,NC}=\pi^{C,NC}(1-\pi^{C,NC})$. The realized vote share is the sample average of successes, which we denote by $s\%$, while the expected value of the vote share is the voting probability itself.

The probability that the mayor does not pass the vote share threshold set by the government is given by Pr $\left(s\%<\underline{s}\right)$. By subtracting, multiplying with and diving both sides in the parentheses by the same terms (expected value, square root of the number of trials and standard deviation) we can expand this formula as

$$Pr\left(\frac{\sqrt{n}\left(s\%-\pi^{C,NC}\right)}{\delta_{C,NC}}<\frac{\sqrt{n}\left(\underline{s}-\pi^{C,NC}\right)}{\delta_{C,NC}}\right).$$

The central limit theorem implies that the term on the left hand side converges in

distribution to a standard normal distribution, implying that

$$p^H = \Phi\left(\frac{\sqrt{n}\left(\underline{s} - \pi^{NC}\right)}{\delta_{NC}}\right)$$

and

$$p^L = \Phi\left(\frac{\sqrt{n}\left(\underline{s} - \pi^{C}\right)}{\delta_{C}}\right),$$

where Φ is the cumulative density function of the standard normal distribution function. The government wants to maximize

$$p^H - p^L = \Phi\left(\frac{\sqrt{n}\left(\underline{s} - \pi^{NC}\right)}{\delta_{NC}}\right) - \Phi\left(\frac{\sqrt{n}\left(\underline{s} - \pi^{C}\right)}{\delta_{C}}\right)$$

according to $\underline{s}$. The first order condition can be reorganized as

$$\left(\frac{\sqrt{n}\left(\underline{s} - \pi^{NC}\right)}{\delta_{NC}}\right)^2 = \left(\frac{\sqrt{n}\left(\underline{s} - \pi^{C}\right)}{\delta_{C}}\right)^2.$$

The solution is a maximum if

$$\left(\frac{\sqrt{n}\left(\underline{s} - \pi^{NC}\right)}{\delta_{NC}}\right) = -\left(\frac{\sqrt{n}\left(\underline{s} - \pi^{C}\right)}{\delta_{C}}\right).$$

We can express the optimal $\underline{s}$ as

$$\underline{s} = \frac{\delta_C}{\delta_C + \delta_{NC}}\pi^{NC} + \frac{\delta_{NC}}{\delta_C + \delta_{NC}}\pi^{C}$$

This is the weighted average of expected vote shares, and the weights are given by the relative variances of the voting probabilities. These all are functions of optimal public work levels $q_1^{*,C}$, $q_1^{*,NC}$ and the model's parameters. In particular, the marginal impact of clientelism, $\pi^C - \pi^{NC}$ is given by $\mu_1\sigma_1(1-\theta)\gamma z q_1^{*,C}\nu_1$.

The maximized $p^H - p^L$ value simplifies to

$$p^H - p^L = \Phi\left(\frac{\sqrt{n}\left(\pi^{C} - \pi^{NC}\right)}{\delta_C + \delta_{NC}}\right) - \Phi\left(\frac{\sqrt{n}\left(\pi^{NC} - \pi^{C}\right)}{\delta_C + \delta_{NC}}\right) = 2\Phi\left(\frac{\sqrt{n}\left(\pi^{C} - \pi^{NC}\right)}{\delta_C + \delta_{NC}}\right) - 1$$

For any π_{NC}, the above value is increasing in $\pi_C - \pi_{NC}$, which will be increasing in z, γ and $1-\theta$.

D Cost per vote calculation

This

Private appendix

Table D.14: Effect on Fidesz whether incumbent mayor runs or not

	Incumbent mayor runs		Incumbent mayor does not run	
	(1)	(2)	(3)	(4)
Workfare × Post	0.0654	0.235*	0.111*	0.177**
	(0.0906)	(0.111)	(0.0436)	(0.0495)
Municipality & Year FE	Yes	Yes	Yes	Yes
Municipality controls		Yes		Yes
N	1697	1697	10791	10779

Notes: This table reports the effect of

Table D.15: Heterogeneity by winning margin of incumbent mayor

Panel A: Heterogeneous Effects of Workfare on Fidesz Support	Winning margin	
	(1) High	(2) Low
Workfare × Post	0.205**	0.151*
	(0.0513)	(0.0662)
Municipality & year FE	Yes	Yes
Controls	Yes	Yes
R^2	0.884	0.901
N	6231	6241
Panel B: Heterogeneous Effects of Workfare on Incumbent Mayor Support	Winning margin	
	(1) High	(2) Low
Workfare × Post	0.313**	0.526**
	(0.110)	(0.113)
Municipality & year FE	Yes	Yes
Controls	Yes	Yes
R^2	0.616	0.632
N	5198	5050

Notes: This table reports the effect of