The Political Effects of Inequality-Increasing Policy: Evidence from a Tax and Welfare Reform

Yonatan Berman[*] [†]

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Abstract

This paper studies the effects of tax and welfare cuts on electoral behavior. It exploits a major reform in Israel occurring in 2003. The 2003-elected government sharply cut welfare benefits and decreased tax progressivity. Low-income parents to several children could lose benefits accounting for more than half of their household income. High-income voters gained 5% to 7% of their income in tax cuts. By combining electoral and socio-economic administrative data and survey panel data, I show that the reform had a significant impact on subsequent general elections. The effect was asymmetric. The major welfare benefit cut had a mild negative impact on the support for the coalition parties implementing the reform. This weak response can be attributed to the salience of both expressive and instrumental identity-based voting. At the same time, the tax cut led to increased support for the coalition among those benefiting from it. The results indicate that the weak political response to the rising inequalities over the past decades could be driven by a lower electoral sensitivity of poorer voters to monetary treatments compared to richer voters.

Keywords: Inequality, Political economy, Public economics, Tax reform, Voting behavior, Welfare programs
JEL Codes: D31, D72, H53, I38, P00

[*]King's College London, London School of Economics, and IZA, yonatan.berman@kcl.ac.uk

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1 Introduction

Income inequality has risen significantly in many developed countries over the past several decades. Policymakers, academics, and journalists alike have described this trend as "the defining challenge of our time."[1] A considerable portion of this increase can be attributed to changes in redistributive policies (Saez and Zucman, 2019b; Blanchet, Chancel and Gethin, 2022). Over the past five decades, inequality-increasing policies, such as reductions in income tax rates and welfare spending, have been widespread. Surprisingly, however, these changes have not been accompanied by a substantial increase in public support for redistribution (Kenworthy and McCall, 2008; Cavaillé, 2023).

This paper provides evidence from the case of Israel, demonstrating that changes in tax and welfare policy can have significant electoral effects. Notably, these effects are asymmetric: wealthier voters who benefit from inequality-increasing policy changes are more likely to increase their support for the implementing parties, whereas poorer voters negatively impacted by such changes are less likely to withdraw their support. This asymmetry offers insights into why inequality-increasing policies are not necessarily met with greater public demand for redistribution.

To study this phenomenon, the paper examines a major economic reform in Israel implemented in 2003. Orchestrated by a center-right coalition between the 2003 and 2006 parliamentary elections, the reform introduced several policy changes that disproportionately disadvantaged poorer voters and families with multiple children. The most significant and publicly controversial aspect of the reform was a drastic cut in child benefits, which reduced payments for some voters by more than 50% almost overnight. Additionally, the reform included substantial income tax reductions. While these tax cuts had minimal impact on the effective tax rates of lower-income households, they resulted in a significant reduction of 5–7 percentage points in the effective tax rates for higher-income deciles.

I proceed as follows. First, I combine the exact details of the reform with rich individual-level survey data. These data include longitudinal information on voting and a set of socio-economic and socio-demographic variables. This allows accurate identification of the monetary effect of the reform in the voter level. I create an additional panel dataset in the municipality level. It combines administrative data on socio-economic and socio-demographic variables from the national census with the official election results.

[1] The full quote is: "And that is a dangerous and growing inequality and lack of upward mobility that has jeopardized middle-class America's basic bargain – that if you work hard, you have a chance to get ahead. [...] I believe this is the defining challenge of our time: Making sure our economy works for every working American." (Obama, 2013)

Using a difference-in-differences design I find that the major cut in child benefits had a small negative impact on the support for the coalition parties that implemented it. A reduction of 1% in a voter's income led to a reduction of 0.2–0.3 percentage points in their probability to vote for the coalition parties in the subsequent elections. The effect is consistently larger among ultra-orthodox Jewish voters.

Using a similar difference-in-differences design I find that the tax cut had a larger positive impact on the support for the coalition parties. An increase of 1% in a voter's after-tax income led to an increase of 1–2 percentage points in their probability to vote for the coalition parties in the subsequent elections.

I then explore these effects and their origins. First, I find the results inline with the rising importance of identity-based voting, where more than purely material payoff, but also the status gained from voting as a part of a group one identifies with, plays a big role (Shayo, 2009; Klor and Shayo, 2010; Besley and Persson, 2021). In particular, I show that when considering municipalities in which voters were consistently very supportive of the Likud (the leading party in the coalition) up to 2003, the change in the Likud vote share between 2003 and 2006 was independent of both treatments (cut in child benefits and income tax cut). This is indicative of identity-based voting.

The results are thus indicative of identity-based voting that manifests itself in two distinct ways. The first is purely expressive voting, where voters support parties they identify with for various reasons, but are unlikely to promote policies that are materially beneficial for them. Yet, I also observe instrumental identity-based voting, where the social identity of a specific group within society, ultra-orthodox Jews, is electorally aligned with improving their material payoff.

The asymmetry between the small negative effect of the massive cut in child benefits and the large positive effect of the substantially smaller tax cut suggests that voters react more positively to positive treatments than they react negatively to negative treatments (*c.f.*, Park (2019)). In addition, an asymmetry between a negative material treatment affecting poorer voters, and a positive material treatment affecting richer voters, can be indicative of additional mechanisms. For example, it can be due to higher salience for material issues among richer voters, in comparison to other issues, such as security. I find this hypothesis to be supported by individual-level survey data.

This paper is related to several strands in the literature. First, the paper highlights that backward-looking monetary payoffs are a nonnegligible factor to understand electoral behavior. This is inline with the median-voter model assumptions (Downs, 1957). However, the findings lie in clear contrast with the classic result that higher inequality, and thus a

larger gap between the average income and that of the median voter, would lead to increased demand for redistribution (Meltzer and Richard, 1981).

Scholars have recently explained the lack of political response to rising inequalities by showing how unrealistic people's perceptions of inequalities are. This is particularly reflected in ill-understanding of income and wealth distributions and the impact policies may have on them (Benabou and Ok, 2001; Norton and Ariely, 2011; Kuziemko et al., 2015; Karadja, Mollerstrom and Seim, 2017; Alesina, Stantcheva and Teso, 2018; Fisman, Kuziemko and Vannutelli, 2021; Stantcheva, 2021; Londoño-Vélez, 2022; Alesina, Miano and Stantcheva, 2023). Studies mainly use surveys and experiments that elicit individual redistributive preferences. Such preferences are implicitly assumed to also reflect voters' electoral preferences. Yet, this link is rarely tested empirically, leaving a gap in the literature, which the current paper is addressing.

Identifying a direct link between inequality-increasing policy and political outcome is challenging. Voting behavior is complex and determined by a plethora of variables. Even if such a link exists, one cannot expect it to explain much of the variation in voting. Moreover, the magnitude of most inequality-related policy changes is typically limited. For example, very rarely it is the case that almost the entire voting population is losing or gaining 10% or more of its income to due policy reforms. The set of reforms studied in this paper is therefore unique in its magnitude and scale. Furthermore, a key advantage in studying electoral outcomes in Israel is the lack of any regional aspect, as well as the limited effect of personal candidates on voting, as the elections are based on proportional representation, and use a party-list system, where voters vote for political parties as a whole.

The existing literature that directly links inequalities, policy, and electoral behavior is scant. More specifically, the electoral impact of inequality-increasing policy is debatable. Fetzer (2019) showed that voters who were exposed to severe austerity measures in the United Kingdom were more likely to support Brexit. Alesina, Carloni and Lecce (2013), on the other hand, "find no evidence that governments which quickly reduce budget deficits are systematically voted out of office." Gabriel, Klein and Pessoa (2022) found that fiscal consolidation in Europe in the 2010s lead to an increase in "extreme parties' vote share, lower voter turnout, and a rise in political fragmentation" in the regional level. Similarly, Autor et al. (2020) found "evidence of an ideological realignment in trade-exposed local labor markets that commences prior to the divisive 2016 US presidential election." In addition, Fuest et al. (2021) find that politicians may behave strategically to reduce the electoral impact of tax hikes and "postpone tax rate increases to after elections." On the other hand, Ahrens and Bandau (2023) find that "a wide range of statistical specifications provide practically no

evidence for electoral consequences of welfare state changes even under favorable conditions."

Furthermore, the extent to which voters are willing to exchange their vote for material payoff, or as a result of negative policy-driven monetary shock, is unclear. While "many scholars have documented voters' responsiveness to macroeconomic conditions and policies [. . . ,] the existing empirical work faces obvious econometric concerns" (Manacorda, Miguel and Vigorito, 2011) (see also Kramer (1971); Nordhaus (1975)). Manacorda, Miguel and Vigorito (2011) have shown that a large anti-poverty cash transfer program in Uruguay had a sizable positive effect on recipients' support for the government that implemented that program. Yet, the change in support was evaluated in surveys after the implementation of the program, and was not based on actual voting. Reiff and Szabó (2022) show similar results for a housing support program in Hungary using electoral data. Importantly, the existing evidence on specific welfare programs mostly addresses cases in which the treated voters are positively treated, and can be thought of as a form of vote-buying and pork-barrel politics (Giger and Nelson, 2011; Finan and Schechter, 2012; Elinder, Jordahl and Poutvaara, 2015; Blattman, Emeriau and Fiala, 2018; Huet-Vaughn, 2019; Reiff and Szabó, 2022; Levy, 2022; Gromadzki, Sałach and Brzeziński, 2024).

This paper uniquely contributes to this vast literature by exploring actual observed voting behavior in the individual and the municipality levels. In addition, it addresses a large negative monetary treatment, rather than the predominantly-studied positive treatments. Doing this, it enables identifying the potential asymmetry between such treatments.

The paper also contributes to the understanding of the electoral impact of tax policy. This is of particular relevance in light of a plethora of innovative tax proposals of income and wealth, for which there is a potential misalignment between public support and political support (Saez and Zucman, 2019a,b; Advani, Chamberlain and Summers, 2020; Landais, Saez and Zucman, 2020; Jakobsen et al., 2021; Bachas et al., 2022; Guvenen et al., 2023). In addition, this understanding is key in light of the rise in populist regimes in recent decades, where tax and welfare policies are explicitly used by politicians to affect voters (Gidron and Hall, 2017; Funke, Schularick and Trebesch, 2023; Ahrens and Bandau, 2023; Danieli et al., 2022; Gethin, Martínez-Toledano and Piketty, 2022; Guriev and Papaioannou, 2022; Reiff and Szabó, 2022).

In the Israeli context specifically, the relevant literature focuses on Israel's unique political aspects. This is demonstrated in studies of the impact of terrorism on political outcomes (Berrebi and Klor, 2006, 2008; Gould and Klor, 2010), and in the importance of religious institutions (Freedman, 2020). In addition, the literature also uses Israel as a test-case for a diverse society with multiple identity groups, reflected mainly in ethnicity and religion

(Smooha, 1978; Shamir and Arian, 1999; Rahat, Hazan and Ben-Nun Bloom, 2016; Oshri, Yair and Huddy, 2021; Atmor, Harsgor and Kenig, 2022; Berman, 2022). Enos and Gidron (2018), for example, study how preferences for exclusion among the Jewish majority predict discriminatory behavior toward Palestinian citizens of Israel. Similarly to the explanations above, these studies rarely address specific policy reforms or the interaction between economic inequalities, policy and political outcomes.

From a theoretical perspective the paper contributes to the understanding the mechanisms of how policy affects voting. In general, policy changes can affect voting behavior in two main channels. The first is by affecting voters' preferences and the salience of issues due to ideologies, norms and beliefs, but abstracting from the policy's direct material impact on voters. The second channel is through the direct material impact. For example, a change in immigration policy could influence voters from a material perspective, but could also matter to voters due to certain norms and beliefs they hold. In the specific context of the tax and welfare reform, some voters are materially worse-off and some are better-off as the result of its implementation, yet it may also affect voters' preferences and the salience of inequality regardless of these effects. In this paper, I focus on the direct material, or "pocketbook", channel. Furthermore, I am focusing on backward-looking voting, while there is mixed evidence, both theoretically and empirically, on whether voters tend to be forward- or backward-looking (Smyth, Dua and Taylor, 1994; Elinder, Jordahl and Poutvaara, 2015). I find that voters are at least to some extent backward-looking and are affected by material payoffs.

The rest of the paper is organized as follows. Section 2 presents the major economic reform and the specific policy changes studied in the paper, as well as the necessary institutional background. Section 3 discusses the data sources used for the analysis and describes the empirical strategy. Section 4 presents the main results and investigates the effect of the described policy changes on voting behavior, and Section 5 provides insight into the channels behind the results. I conclude in Section 6.

2 Background

2.1 Israel's economy and the 2003 reforms

Israel, a rich economy and a member of the OECD, experienced rapid economic growth in the second half of the 1980s and the 1990s. Its economy went through a gradual transition from a semi-planned economy into a modern market economy since the late 1970s (Fischer,

1984, 1987). In particular, the country has a flourishing tech industry, the most productive sector in the economy. Following the dot-com crash and a period of intense clashes between Israelis and Palestinians (known as the *Second Intifada*), the economy experienced a severe economic crisis in the early 2000s (Morag, 2006).[2]

Cut in child benefits

At the height of the recession, in January 2003, the parliamentary elections in Israel enabled the newly-formed government to implement a series of economic reforms, trying to stabilize the economy. The reforms were unique in their large magnitude, especially compared to other rich economies, and mainly consisted of fiscal measures – tax cuts and reduced government spending.

Above all, one of the major steps taken was a severe cut in child benefits. Before the reform, child benefit payments in Israel were very generous. In 2002, a family with five under-18 children received a monthly payment equivalent to more than 50% of the median wage. After the reform, in 2005, a similar family would only receive a payment of about 28% of the median wage. The change is clearly larger for families with more under-18 children, as depicted in Figure 1. Overall, the reform cut these benefits by 30%–60% for families with 3 children or more (14% for families with 1–2 children), amounting to a loss that for many families exceeds the median wage. The implementation of this change was immediate, yet gradual, meaning that for the purpose of identification, as will be discussed below, it is necessary to compare child benefits in the years just before the 2003 elections and the 2006 elections, *i.e.*, 2002 and 2005. Importantly, the share of households with at least four under-18 children in the population was fairly high: 16%.[3]

The cut was especially severe for families with many children. Thus, the reform impacted mainly ultra-orthodox Jewish families and Arab-Bedouin families, two of the most deprived groups in the Israeli society.[4] Notably, child benefits in Israel are not means-tested and do not require an application. They are received automatically (after registering a newborn child) from the National Insurance Institute. Thus, there is no issue of eligibility or take up for identification (see also Section 4.1). The child benefit cut materially disincentivized giving birth, but in practice the overall impact it had on fertility was mild (see Manski and

[2]Between 2002 and 2006, per capita income remained unchanged, the poverty rate increased from 29 percent to 36 percent and unemployment surpassed 14 percent (see also below).

[3]This statistic is taken from the 2008 census (Central Bureau of Statistics, 2009), the closest to the 2006.

[4]When referring to *ultra-orthodox Jews* I am referring to the population also defined as *Haredi* in the literature. Colloquially, this population is sometimes called *Hasidic*. In the Israeli context ultra-orthodox is a more general term than Hasidic, and refers to a heterogeneous population, but with very distinct religious and social characteristics (Friedman and Heilman, 1996).

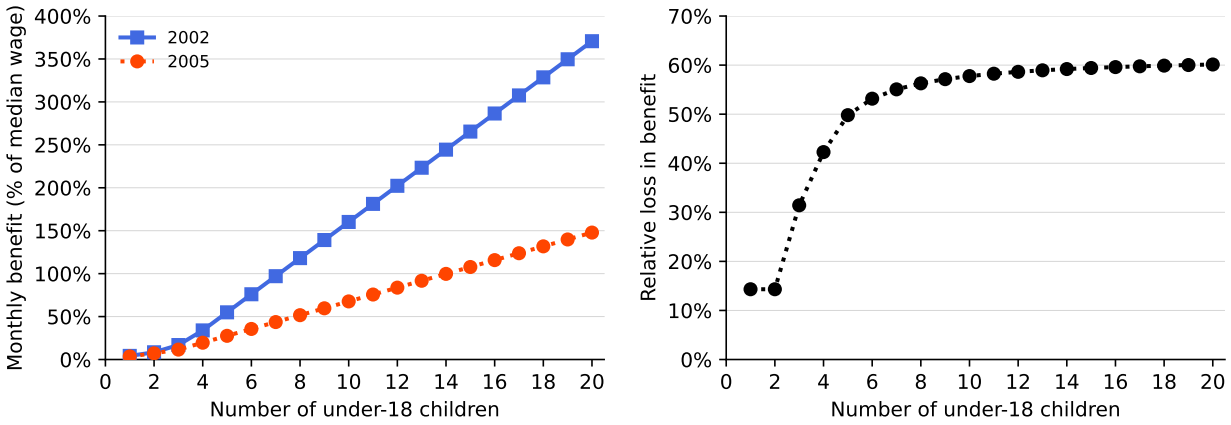


Figure 1: Child benefits in Israel before and after the 2003 reforms. Left) The benefits are calculated as a fraction of the median wage at the corresponding year; Right) The relative benefit loss before and after the reform. The loss is calculated as a share of the benefit received just before the changes implemented in 2003. Source: Author's calculation based on Mey-Ami (2008) and confidential tax and income data from the Israeli Central Bureau of Statistics (Central Bureau of Statistics, 2021).

Mayshar (2003); Frish (2008) and Appendix A).

The cut in child benefits was followed by a massive public backlash, and was perceived as an act hurting the weakest communities in the society. The magnitude of this reform and its salience hence suggest that it had a major political impact that can be observed electorally. The detailed available data (see below) enable the clear identification of the impacted and non-impacted voters, which would allow testing this hypothesis.

Tax cuts

An additional important policy change that occurred as a part of the 2003 reforms is a major change in taxation. The reform in income tax was a complicated one, as different income sources and income from different asset classes are taxed separately in Israel and at different rates. A part of the reform began slightly before the 2003 elections, increasing the capital gains tax on various asset classes. However, the most important part of the reform was a change in the tax schedule applied to business income and wages, about 75% of the national income. This change was implemented mainly between 2003 and 2005, and was effectively a tax cut.

The tax cut differentially affected various groups. In particular, the tax schedule after the reform was substantially less progressive than prior to the reform. The bottom deciles barely enjoyed any cut, and their effective tax rate declined by less than one percentage point. The

top 40% of the population enjoyed a decrease of more than 4 percentage points, with the top decile effective tax rate decreasing by 7 percentage points, from about 40% to 33%.

I define the effective tax rate as the tax collected out of the total market income as documented by tax authorities. It is more accurate than the declared tax rate, which is rarely paid in full due to exemptions, evasion, and avoidance. It also allows taking into account all taxable income sources together. Figure 2 shows the effective tax rates by income decile for 2002 and 2005, just before the reforms and after the implementation of the reforms, but before the 2006 elections.

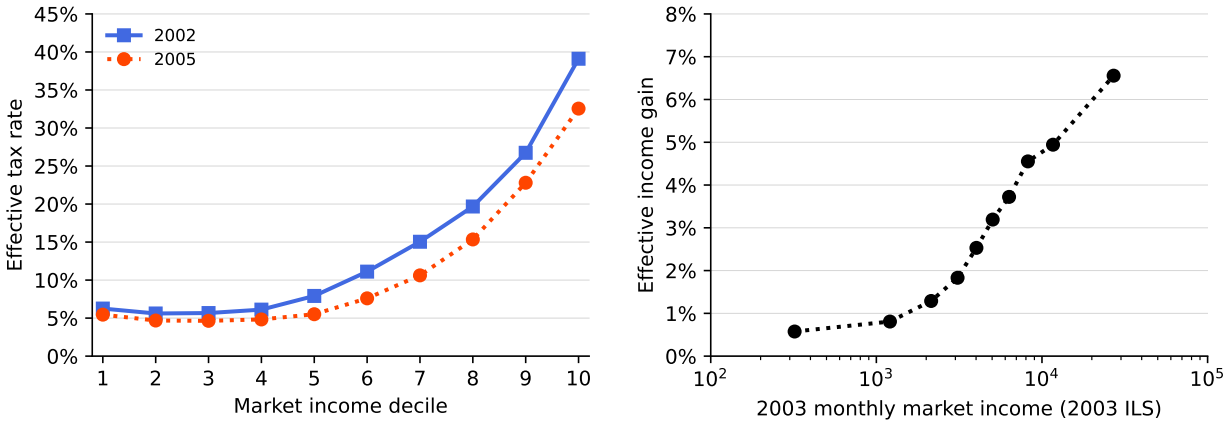


Figure 2: The effective income tax rate in 2002 and 2005 by market income decile. Left) The tax rate is calculated as the total amount of tax collected as a share of the total market income of every market income decile; Right) The after-tax income gain by income level as a result of the income tax cut. The calculations are based on confidential tax and income data from the Israeli Central Bureau of Statistics (Central Bureau of Statistics, 2021).

Once again, the magnitude of the reform suggests that it may have affected voting among those impacted by it. In this case, the reform involves a positive impact that might have increased the support for the government among richer voters. While individual income data that are linked to individual voting are unavailable, it is still possible to address this hypothesis using municipality-level data, as detailed below.

An additional important aspect of the reforms is their impact on inequality and poverty. The implementation of the reforms was followed by a clear rise in inequality and poverty (after taxes and transfers). This is reflected in Figure 3. In the years before and after the period 2003–2006 the Gini coefficient of market income (before taxes and transfers) moved in a similar trend to the Gini coefficient of net income (after taxes and transfers). Between 2003 and 2006, however, the trends dramatically differ. Net income inequality increased, while market income inequality remained stable. According to Dahan (2017), the reforms were indeed a key driver of the increase in net income inequality, pushing many families into

poverty and reducing tax progressivity.

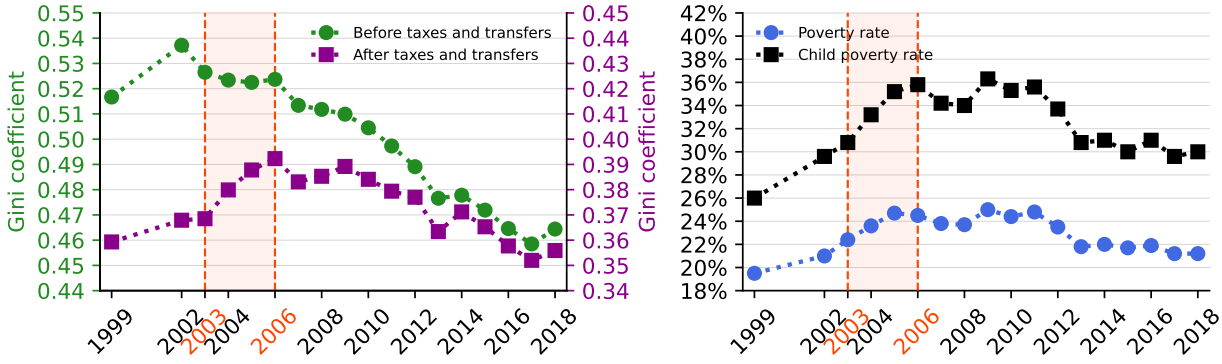


Figure 3: Income inequality (left) and poverty rates (right) in Israel, 1999–2018. Source: Author's calculation based on Endeweld et al. (2019).

The rise in poverty and inequality was followed, in turn, by a major public backlash, which was not restricted to ultra-orthodox Jews and Arab-Bedouins, but included other deprived groups in the society, such as single parents (Herbst, 2013). This, together with additional evidence as discussed below, demonstrates the importance of the 2003 reforms to the political discourse in Israel in the few years that followed their implementation, and thus in the 2006 elections.

2.2 The political system in Israel and the 2003 and 2006 elections

Israel is a parliamentary republic, in which the parliament (the Knesset) is elected every 4 years or less. The prime minister is usually the leader of the biggest party. So far, there have been 25 parliamentary elections, the first in 1949 and the last in 2022. The elections are based on proportional representation, with the number of seats a party receives in the Knesset being proportional to the number of votes it receives.[5] All Israeli citizens who are 18 or older are eligible to vote.

The elections use a party-list system, where voters vote for political parties as a whole (closed-list method). Thus, voters have no direct influence on the order of candidates within lists, and do not choose any individual candidates. This is crucial for the empirical analysis in this paper. It makes voting less reliant on the identity of candidates within parties than

[5]The number of seats a party receives is proportional to the number of votes it receives provided that it gained votes which met or exceeded the electoral threshold, according to D'Hondt method. The electoral threshold was 1% before 1992 and was raised to 1.5% just before the 1992 elections. It was mildly raised again to 2% in 2004 (in a way that did not change the minimum number of seats won by parties that are just past the threshold – 2 seats). The latest increase, before the 2015 elections, was to 3.25%.

when voting is for a particular candidate. This is because candidates' identities (as well as their beliefs and agendas) change from one election to the other, where the change in the variety of parties between consecutive elections is usually mild.

One of the outcomes of the proportional representation system, together with a relatively low electoral threshold, and the heterogeneity of the Israeli society, is that no single party can realistically achieve a majority in the parliament. A coalition of parties is always required in practice, making major reforms harder to implement.

This makes the reforms studied in this paper rather unique. The Likud won the 2003 elections by a large margin and formed a coalition with four other smaller parties. The newly-formed government then quickly implemented a large set of reforms, as described above. Tensions within the coalition and within the Likud led to instability, resulting in the next elections, originally scheduled to October 2007, to be brought forward, to March 2006.[6]

Arian and Shamir (2017) discuss various issues which were particularly salient in the 2006 elections:

- The socio-economic situation
- The aftermath of the unilateral withdrawal from Gaza in August 2005
- The split within the Likud and the forming of Kadima

Post-elections surveys conducted by Israel National Election Studies (Arian et al., 2018) (see more information in Section 3) show that different issues were perceived as the most salient in the 2006 elections by voters. Survey respondents were requested to answer the question "what were these elections about?". The left panel in Figure 4 shows that the socio-economic situation is the issue perceived as the most salient. In similar pre- and post-election surveys, conducted every elections, respondents had to choose the most important problem in the country. The right panel in Figure 4 shows that the salience of the socio-economic situation was particularly high in the 2003 and 2006 elections compared to 2001 and 2009. These results indicate that despite the importance of other issues, socio-economic issues in the 2006 elections are particularly salient. This is a working assumption for the empirical analysis below, drawing also on the large magnitude of the 2003 reforms and the public reactions to them, as described above.

[6]Several months before the 2006 elections the Likud split, and the prime minister and Likud leader, Ariel Sharon, formed a new party, Kadima. Kadima was largely composed of Likud members, with additional few Members of the Knesset joining from other parties (Hazan, 2007; Shamir et al., 2017), and went on to become the largest party after the 2006 elections. Sharon, who was a popular prime minister, suffered two strokes in the two months following the forming of Kadima, just two months before the 2006 elections. He

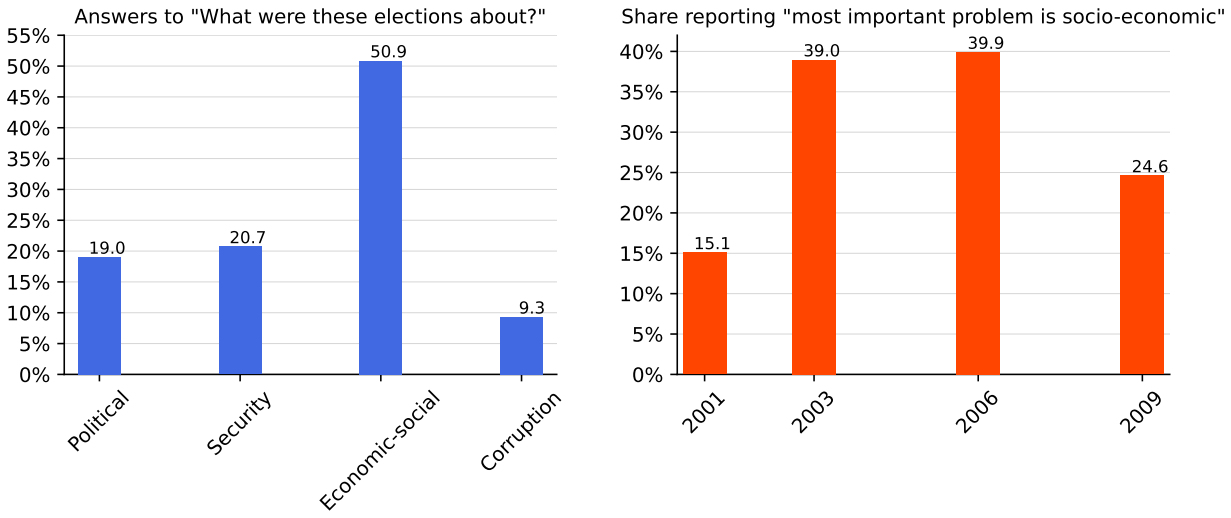


Figure 4: The salience of socio-economic issues in the elections. The results are based on pre- and post-elections surveys conducted by Israel National Election Studies (Arian et al., 2018). The left panel shows the share of respondents answering the question "What were these elections about?" by either political issues, security issues, socio-economic issues, or corruption. The right panel shows the share of respondents defining the most important problem in Israel as socio-economic in surveys conducted before and after the 2001, 2003, 2006 and 2009 elections.

3 Data and Methods

3.1 Data

The main goal of the empirical analysis is to test two hypotheses which follow from the 2003 reforms:

- The child benefit cut had a negative effect on the support for the coalition parties implementing the cut among those affected by it
- The tax cut had a positive effect on the support for the coalition parties implementing the cut among those affected by it

Almost all voters have been somewhat affected by both treatments. A poor voter earning 2000 ILS per month with one child could see their after-tax income increases mildly by about 1%, *i.e.*, 20 ILS, while the child benefits they receive decreased by a similar amount. Overall, the effect on their income is negligible. At the same time, a family with salaries amounting to

entered a coma, and was replaced by his deputy, Ehud Olmert, who succeeded him as the leader of Kadima, and following the elections, as prime minister.

5000 ILS per month with 10 children, would experience a decrease of more than 30% to their total income due to the reduction in child benefits. A rich voter with two children earning 30000 ILS per month would be effectively treated only by the tax cut, whereas the cut in child benefits will only have a negligible impact on their total income. For these reasons the two treatments will be analyzed separately, as voters heavily affected by each do not overlap. Thus, it is possible to test the hypotheses separately.

To test these hypotheses, voting data linked to socio-economic variables are needed. I use two main data sources. The first source is a database of pre- and post-election surveys conducted by Israel National Election Studies (Arian et al., 2018). These surveys provide rich individual-level data, allowing to control for multiple socio-economic and socio-demographic variables. Most importantly, they have a panel component which allows observing the vote of the same individual, for example, in both 2003 and 2006. The surveys also include questions on voters' preferences and opinions, which are informative on mechanisms, and allow evaluating the salience of various issues, as demonstrated in Figure 4, and discussed in more detail in Section 5.[7]

I use all surveys conducted between 1996 and 2009, as they are designed in a way that allows standardization (the survey questions and sample construction are similar). I then pool together all individual voters across all surveys, amounting to 5447 unique voters. The data include retrospective questions on voting in the two last elections, so pooling together all voters creates an incomplete panel. The data are very representative – the average absolute difference in parties vote shares between the official results and the survey data is 1.4pp

[7]The full survey database can be accessed at: https://www.tau.ac.il/~ines/, and it is described as follows:

> "National election studies in Israel began in 1969. The two basic elements have been a pre-election survey based on a national sample and an edited volume regarding major aspects of the elections. All surveys were conducted prior to Knesset elections and Prime Ministerial elections (held in 1996, 1999, and 2001). At least one survey was carried out in each election year; in certain years, more than one survey was conducted, and in a few cases a post election survey was added. In some years (1973, 1988, 1999, 2006, 2009, 2013 and 2015), a panel design was used.
>
> The aim of the Israel National Election Studies is to investigate voting patterns, public opinion, and political participation in Israel. Each election study addressed a wide range of substantive themes including expectations about the election outcome; perceptions and evaluations of the major parties and candidates; information about politics; partisanship; assessments of the relative importance of major problems facing the country; attention to campaign coverage in the mass media (in recent studies); feelings of political efficacy; political values; left vs. right positions; trust in government; political participation; vote choice past and present; economic well-being; policy positions on the Arab-Israeli conflict, social welfare, state and religion, economic, social, and civil rights issues; evaluations of political figures and groups; measures of religious affiliation and religiosity; and detailed demographic information."

(1.9pp when weighting by the party size) for 2003 and 2006. See also Appendix B for a more detailed comparison.

Notably, respondents were asked how many people live in their household. The answer to this question is key for identification. It is used as an indication for the number of children in the family. Additional socio-economic and socio-demographic variables that can be used as controls are: age, gender, religion, household expenditure level, self-declared social class, years of schooling, resident of center/periphery locality, ultra-orthodox Jew/not, ethnicity (Ashkenazi Jew, Mizrahi Jew, Arab, or other).

The second main data source used is the official election results by municipality (Central Elections Committee, 2021). I linked the election results to rich socio-economic and socio-demographic administrative data on each municipality, based on the 2008 Population and Housing Census (Central Bureau of Statistics, 2009), in addition to income data by municipality published regularly by the Central Bureau of Statistics (Central Bureau of Statistics, 2010). The combined dataset comprises of 1040 municipalities covering more than 99% of the population in Israel (excluding few very small localities for which key variables were not collected in the 2008 census).

There are several advantages to using the municipality-level data. First, they are based on the official election results, which are not prone to misreporting and representativeness issues like the survey results. In addition, they allow constructing a longer dataset, which is not limited by the survey design. This dataset is also a complete panel (up to several cases in which new municipalities were created, and several cases where local authorities were unified). Furthermore, the municipality-level data include average income data for each municipality. Income information is not included in the surveys.

The municipality-level data are not, however, in the individual level. Thus, using the municipality-level data is implicitly under an assumption of homogeneity of socio-economic variables within municipalities. This means that any assertion that is based on these data would be more valid if restricted to smaller municipalities, which tend to be more homogeneous (Dahan, 2022). I show that the results are qualitatively similar when restricted to small municipalities only. They only mildly differ from the baseline estimates.

The municipality-level data are also missing family size. Yet, this dataset includes a variable for the share of households with six or more members in every municipality. It is likely that voters in municipalities in which this share is exceptionally high are more likely to be negatively treated. This variable will be used to test the effect of the cut in child benefits.

3.2 Empirical strategy

I perform three related exercises. First, I estimate a pooled difference-in-differences specification that takes the following form:

$$y_{i,w,t} = \alpha_i + \theta_{w,t} + \delta \times \mathbf{1}_{t>2003}(t) \times Reform_{i,j} + \epsilon_{i,w,t}\,, \tag{3.1}$$

where $y_{i,w,t}$ denotes the coalition vote share (in the case of the municipality-level data) or a dummy for voting for the coalition or not (*i.e.*, $y_{i,w,t} = 0, 1$ in the individual-level case). The fixed effect α_i absorbs any time-invariant differences in political preferences or sentiment across municipalities (or individuals). The subscript w represents regional council association of each municipality (in the case of the municipality-level data). Regional council-by-time fixed effects $\theta_{w,t}$ capture nonlinear time trends specific to each of the 51 regions (cities, which are not considered a part of any regional council, are associated with a single ad-hoc region). In the individual-level case w represents the survey wave. This is important since different individuals were surveyed in each wave, and were asked retrospectively about their vote two elections back. Thus, there is a partial overlap between waves in terms of their coverage of elections. Wave-by-time fixed effects $\theta_{w,t}$ capture nonlinear time trends specific to each survey wave. Throughout the paper, standard errors are clustered at the municipality level (in the case of the municipality-level data) or the individual voter level. The main coefficient of interest is δ, which captures changes in the outcome variable $y_{i,w,t}$ following the exposure of unit i to reform j (which is based on various specifications of the cut in child benefits or the income tax cut, as will be detailed below).

For the individual-level dataset I will also estimate a similar pooled difference-in-differences specification, where I set $\mathbf{1}_{t=E}(t)$ and estimate

$$y_{i,w,t} = \alpha_i + \theta_{w,t} + \delta_E \times \mathbf{1}_{t=E}(t) \times Reform_{i,j} + \epsilon_{i,w,t}\,, \tag{3.2}$$

where E specifies the election. In this specification δ_E captures the specific changes in the outcome variable $y_{i,w,t}$ following the exposure of unit i to reform j in election E (before the 2006 elections this is a placebo treatment).

Second, for the municipality-level data I estimate a difference-in-differences specification, where only changes between two consecutive elections are considered:

$$y_{i,t} = \alpha + \beta_{reform} \times Reform_{i,j} + \beta_{post} \times Post_t + \delta \times Post_t \times Reform_{i,j} + \beta_X X_{i,t} + \phi_i + \epsilon_{i,t}\,, \tag{3.3}$$

where $y_{i,t}$ denotes the coalition vote share of municipality i in election t (t takes two values: 0

or 1, *i.e.*, earlier or later elections). The fixed effect ϕ_i absorbs any time-invariant differences in political preferences or sentiment across municipalities. $Post_t$ is a dummy for the later election ($Post_t = 0$ for $t = 0$; $Post_t = 1$ for $t = 1$). $X_{i,t}$ are a set of controls. The main coefficient of interest is δ, which captures changes in the outcome variable $y_{i,t}$ following the exposure of unit i to reform j between two consecutive elections. This design allows estimating specifically whether the welfare reform, implemented just after the 2003 elections, had an effect on the 2006 elections. Similarly, before the implementation of the reforms, the treatment is a placebo treatment. Thus, Equation (3.3) would allow testing for parallel trends and lack of pre-trends, as well as confirming null effects before the treatment.

Third, I apply the synthetic controls method using the municipality-level data. It allows addressing both reforms. For the cut in child benefits, I define the treated group of municipalities as the 200 municipalities with the highest share of households with 6 or more members (top 19%), while the donor pool is defined as the 200 municipalities with the least such families (based on the 2008 census). Similarly, for the tax cut, I define the top treated group of municipalities as the richest (by average income) 200 municipalities (top 19%), while the donor pool is defined as the poorest 200 municipalities. By proper weighting, the donor pool municipalities serve as synthetic controls for the treated municipalities.

4 Results

Municipality-level results

I first discuss the pooled difference-in-differences results, before turning to the event study and the synthetic controls estimates.

The results from estimating the specification in Equation (3.1) for the municipality-level data are presented in Table 1. The columns explore the different reforms $Reform_j$. For municipalities $Reform_j$ is defined in two ways: $ShareOf6+$ stands for the cut in child benefits—it uses the share of households with more than 6 members in the municipality as $Reform_j$. This indicator is a measure for the exposure of the municipality to the cut in child benefits; $IncomeGain$ stands for the tax cut—it uses the imputed average gain (in percentage change) from the reduction in income taxes based on the average income in the municipality in 2006 as $Reform_j$. The results are given with and without population weighting, as well as restricting the sample to small municipalities of up to 3000 residents.

As expected, there is a negative effect of the cut in child benefits on voting for the 2003 coalition parties. The effect is significant for the unweighted and small municipalities speci-

Table 1: Pooled difference-in-differences with municipality-level data

	Cut in child benefits $ShareOf6+$			Cut in income tax $IncomeGain$		
	pop. weighted	unweighted	Small munis.	pop. weighted	unweighted	Small munis.
δ	0.112	-0.568***	-0.631***	8.074***	8.548***	10.419***
	(0.123)	(0.043)	(0.049)	(0.654)	(0.344)	(1.427)
R^2	0.733	0.885	0.898	0.822	0.884	0.889
N	7342	7342	6009	7683	7683	6241

fications. With population weighting the effect becomes null. This could be indicative of a small number of large municipalities in which the treatment had little effect on voting for the coalition parties.

The interpretation of the result for the unweighted and small municipalities specifications is that an additional percentage point of households with 6 or more members in a municipality led to a reduction of about 0.6 percentage points in voting for the 2003 coalition parties post-treatment.[8]

The hypothesized effect is also obtained for the cut in income taxes. In this case, all specifications lead to a large and significant effect. An additional percentage point reduction in tax cut increased the support for the coalition parties by 8 to 10 percentage points post-treatment. This large effect also accounts for the outcomes of the 2009 elections, considering them as treated. This greatly amplifies the observed effect. The effect could thus be interpreted as a persistent effect of the tax cut. Yet, it is also possible that it accounts for additional factors that have happened over time between the implementation of the reforms in 2003 and the 2009 elections. To overcome this potential concern, and estimate a possibly more accurate coefficient, the baseline estimate considered is the specification in Equation (3.3) for the 2003 and 2006 elections. The results of this estimation are presented in Figure 5.

Figure 5 first shows that in both treatments there are no pre-trends. In addition, the

[8]The 2003 coalition parties were Likud, Shinui, Haihud Haleumi, Mafdal, and Israel Bealiyah. Between 2003 and 2006 the lists participating in the elections were almost identical, with the important exception of Kadima (composed of Likud members and a few "deserters" from the Labor party). Yet, when going back or forward in time, the political map changes substantially, in a way that could make estimating the support for the 2003 coalition parties effectively impossible. For this reason, when testing for parallel trends I focus on the Likud, the largest and most dominant party in the 2003 coalition. In 2006, it is also possible to add votes for Kadima to the votes for Likud, under the assumption that many Likud supporters in 2003 voted for Kadima in 2006. The vast majority of Likud voters in 2003 voted for Kadima and the Likud in 2006. Many others of them voted for Israel Beitenu in 2006, which was also a member of the coalition in 2003. See also Appendix C.

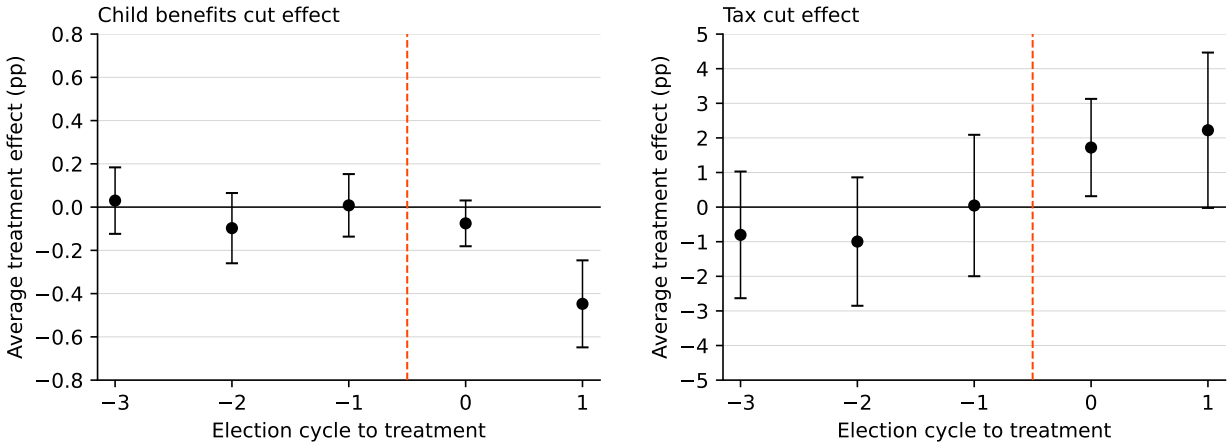


Figure 5: Impact of the 2003 reforms on support for the 2003 coalition parties using municipality-level data. Left) The effect of the cut in child benefits; Right) The effect of the income tax cut. In both cases, election cycle 0 stands for the 2006 election, *i.e.*, after the treatment, occurring between the 2003 and 2006 elections. The error bars represent 95% confidence intervals.

placebo treatment effect – the treatment effects before the reforms were implemented – is not different from 0. The cut in child benefits has a mild negative effect in 2006, lower than reported in Table 1. This effect is also demonstrated in the scatterplots in Figure 6. There is a clear, yet modest, decrease in support for the 2003 coalition parties between 2003 and 2006 in municipalities that are more strongly exposed to the cut in child benefits. Such a decrease is not observed pre-treatment. I further explore this effect more rigorously using the individual-level data below.

The effect of the tax cut in Figure 5 is also lower than reported in Table 1. It is still significant and robust to different specifications. According to Figure 5, an additional percentage point reduction in income tax increased the support for the coalition parties by 1.7 percentage points in 2006. Figure 7 further demonstrates this effect. It shows a clear increase in the support for the 2003 coalition parties between 2003 and 2006 in municipalities that are more strongly exposed to the income tax cut. Such an increase is not observed pre-treatment, as expected.

Figure 8 shows the treatment effect for both reforms using synthetic controls. As explained, for the cut in child benefits, I defined the treated group of municipalities as the 200 municipalities with the highest share of households with 6 or more members (top 19%), while the donor pool is defined as the 200 municipalities with the least such families (based on the 2008 census). Similarly, for the tax cut, I define the top treated group of municipalities as the richest (by average income) 200 municipalities (top 19%), while the donor pool

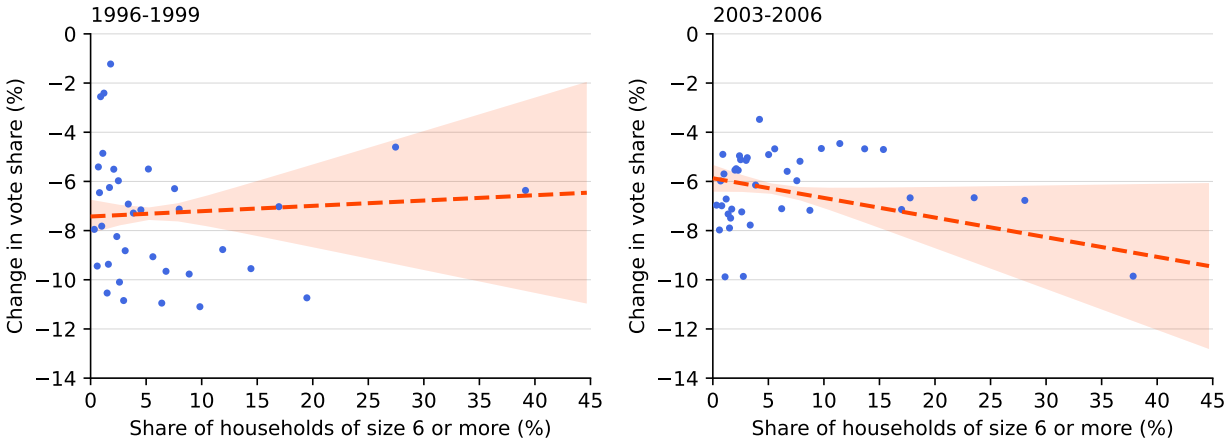


Figure 6: The change in support for the 2003 coalition parties as a function of the share of households with more than 6 members in a municipality. Left) between 1996 to 1999 (pre-treatment); Right) between 2003 to 2006 (after-treatment). The scatterplots use binning and account for population-weighted results after controls (I control for the following variables: Socio-economic cluster (a multidimensional socio-economic indicator ranging from 1, the lowest, to 10, the highest), population, dependency ratio, median age, share of married population, median marriage age, share with 12 years of schooling or above, share with matriculation certificate, share with academic certificate, average weekly working hours per worker, share of households with internet access, share of households with 1 vehicle or more, share of households with 2 vehicles or more, share of households with a cellphone, monthly income per capita, share of earners below minimum wage, share of high income earners (> twice the average)). The shaded areas represent 95% confidence intervals.

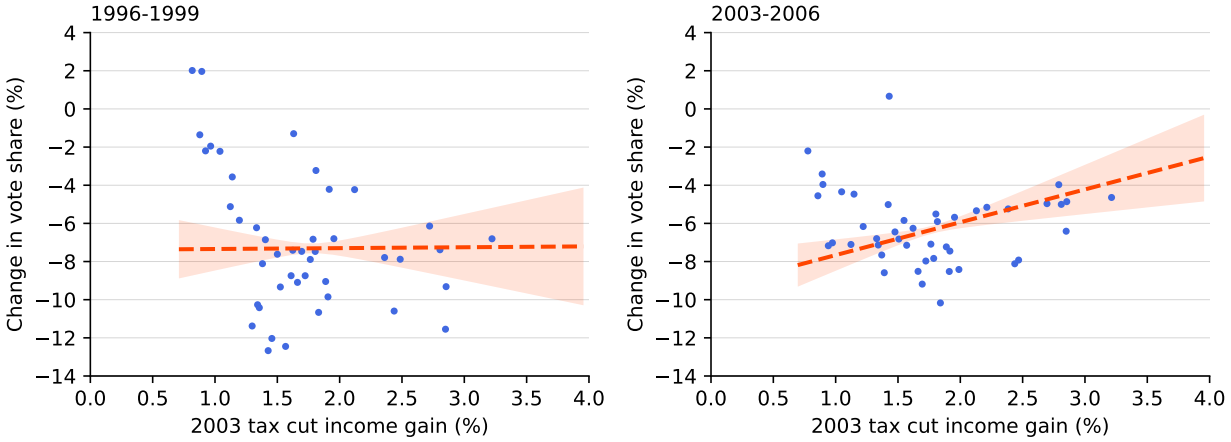


Figure 7: The change in support for the 2003 coalition parties as a function of the imputed average income gain from the tax cuts in a municipality. Left) between 1996 to 1999 (pre-treatment); Right) between 2003 to 2006 (after-treatment). The scatterplots use binning and account for population-weighted results after controls (see Figure 6 for a detailed list of control variables). The shaded areas represent 95% confidence intervals.

is defined as the poorest 200 municipalities. In both cases, the synthetic control provides a nearly-identical match to the treated municipalities when matched on the 2003 coalition vote share in the six elections between 1984 and 2003. From 2006 they diverge, indicating a significant treatment effect.

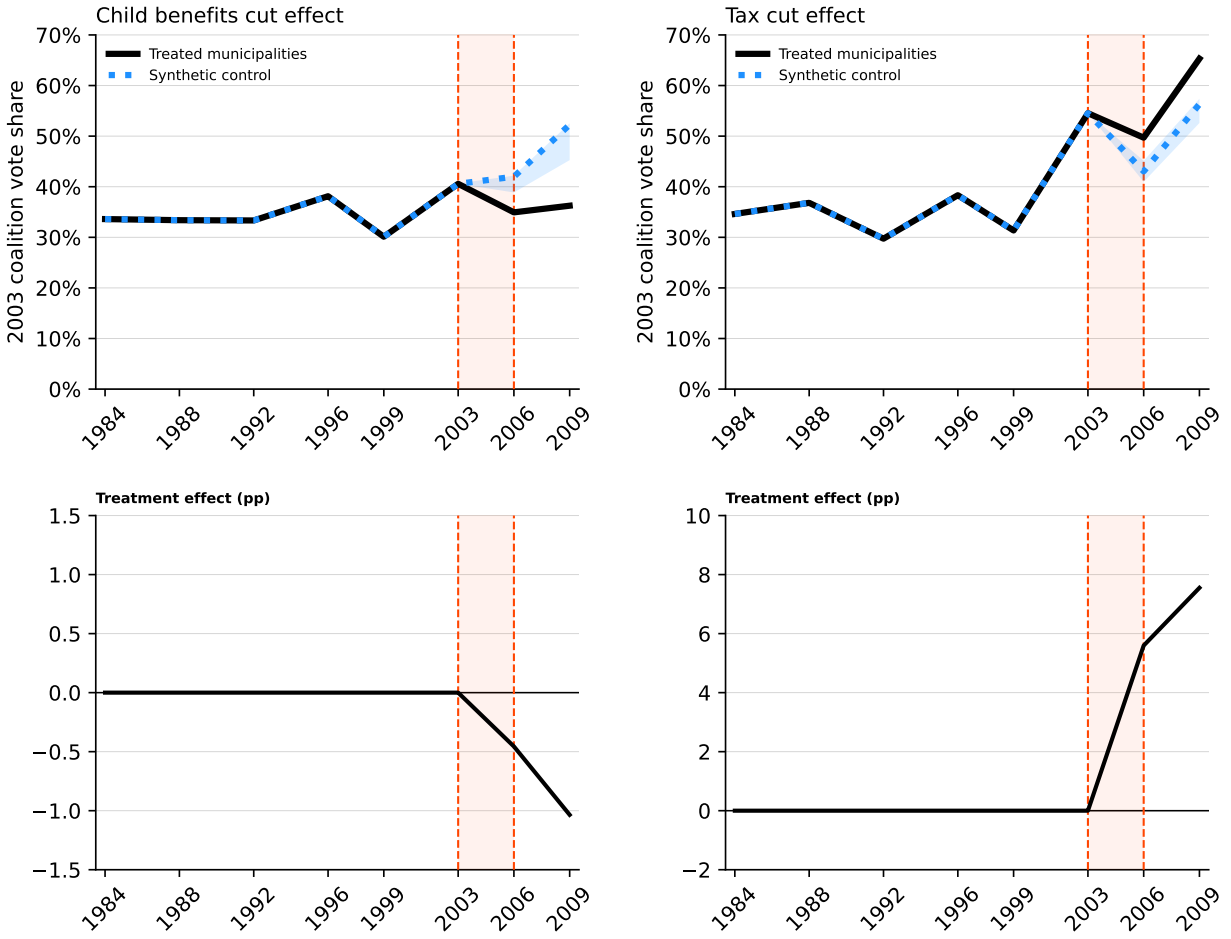


Figure 8: Impact of the 2003 reforms on support for the 2003 coalition parties using municipality-level data with synthetic controls. Left) The effect of the cut in child benefits; Right) The effect of the income tax cut. The shaded area accounts for a leave-one-out error calculation (Abadie, 2021). The bottom panels show the treatment effect per unit of treatment for each of the reforms: an additional percentage point of households with 6 or more members in a municipality for the cut in child benefits; an additional one percent average income gain in a municipality for the income tax cut.

For the cut in child benefits Figure 8 shows that an additional percentage point of households with 6 or more members in a municipality led to a reduction of about 0.5 percentage points in voting for the 2003 coalition parties in 2006. For the income tax cut, an additional one percent average income gain in a municipality led to an increased support of about 6 percentage points in 2006 for the 2003 coalition parties. In both cases, that effects are larger

in magnitude than in the baseline event study estimates (Figure 5). The latter are more reliable, since with synthetic controls the definition of the group of treated municipalities will necessarily be somewhat arbitrary for both reforms. Yet, the synthetic controls results provide additional evidence for the robustness of the results and their significance.[9]

Individual-level results

To study in greater detail the observed effects based on the municipality-level data, I further explore the pooled surveys using a similar empirical strategy as explained above. Importantly, the individual-level data enable better identification of the effect of the cut in child benefits. The key reason is that the surveyed voters responses enable the accurate imputation of the number of children they have. This way, the exposure to the cut in child benefits can be quantified. I define four specifications of this treatment:

i. Benefit relative loss: measured in percentage change relative to the received child benefit before the reform

ii. Benefit monetary loss: measured in monthly ILS amount

iii. Benefit loss as a share of imputed household income

iv. The effect of an additional child in the household

The specifications convey different interpretations of the reform effect. The child benefit loss as a share of imputed household income is of particular importance, as it is the only one comparable to the effect of the income tax cut, which was measured as a share of income. Therefore, to compare the effects of both policy changes this specification would need to be used.

In addition, the individual-level results enable accounting for additional personal characteristics. Importantly, it is possible to deduce whether a voter is ultra-orthodox (*i.e.*, Haredi – see Section 2). Ultra-orthodox voters tend to have many children (see Appendix A), making the cut in child benefits of particular salience to this community. I will explore the analysis results when restricting the exposure to treatment to ultra-orthodox voters only (*i.e.*, multiplying the term $\delta \times \mathbf{1}_{t>2003}(t) \times Reform_{i,j}$ in Equation (3.1) and the equivalent term

[9]Crucially, the synthetic controls analysis assumes that the donor-pool municipalities did not go through the tax-cut treatment. In addition, these municipalities are assumed to have gone through no other "treatment" that could affect voting and that the rich municipalities have not gone through as well. In reality, for example, rich voters in poor municipalities did enjoy the tax cut. Yet, overall, the treatment intensity in those municipalities is expected to be very small, especially when compared to the rich municipalities.

in Equation (3.2) by a dummy indicating whether a voter is ultra-orthodox). Also, since the surveys do not include a specific question about the number of under-18 children in the family, but only about household size, I impute the number of children by subtracting 2 from the household size for voters aged 22 to 60 (or 0, if household size is 1).

The results from estimating the specification in Equation (3.1) for the individual-level data are presented in Table 2. The columns explore the different specifications of the cut in child benefits, overall, and when the treatment is restricted to ultra-orthodox voters only.

Table 2: Pooled difference-in-differences with individual-level data

	Spec. i: Benefit relative loss		Spec. ii: Benefit monetary loss		Spec. iii: Benefit loss from HH income		Spec. iv: # of children	
	Overall	Ultra-orthodox	Overall	Ultra-orthodox	Overall	Ultra-orthodox	Overall	Ultra-orthodox
δ	-0.212**	-0.277**	-0.005	-0.009**	-0.297	-0.614**	-1.846	-2.624**
	(0.081)	(0.101)	(0.003)	(0.003)	(0.200)	(0.211)	(0.751)	(0.918)
R^2	0.787	0.787	0.787	0.787	0.787	0.787	0.787	0.787
N	10894	10894	10894	10894	10894	10894	10894	10894

As expected, there is a negative effect of the cut in child benefits on voting for the 2003 coalition parties. In all specifications the effect is significant for ultra-orthodox voters, but not overall in some cases. For ultra-orthodox voters the magnitude of the effect is also larger than for all voters. The interpretation of the result for specification iii – benefit loss as a share of imputed household income – is that an additional loss of one percentage point of household income led to a reduction of about 0.3 percentage points in support for the 2003 coalition parties post-treatment. For ultra-orthodox voters the effect is 0.6 percentage points. This effect is 3–10 times weaker than the positive estimated effect of the income tax cut.

Similarly to the case of the municipality-level data, the estimates in Table 2 also account for factors that may have happened over time between the implementation of the reforms in 2003 and the 2009 elections. Thus, I also estimate the specification in Equation (3.2), in which $E = 2006$, *i.e.*, the treatment effect on voting in 2006, assuming the treatment only affects the 2006 elections. The results of this estimation are presented in Figure 9.

Figure 9 shows that in all treatment definitions there are no pre-trends. In addition, the placebo treatment effect – the treatment effects before the reforms were implemented – is not different from 0. In all cases, there is a negative treatment effect for ultra-orthodox voters in 2006. It is larger in magnitude and more significant than the baseline in all cases.

For comparability with the baseline results in Figure 5, I use the treatment effect for the benefit loss measured as a share of household income. According to Figure 5, an additional

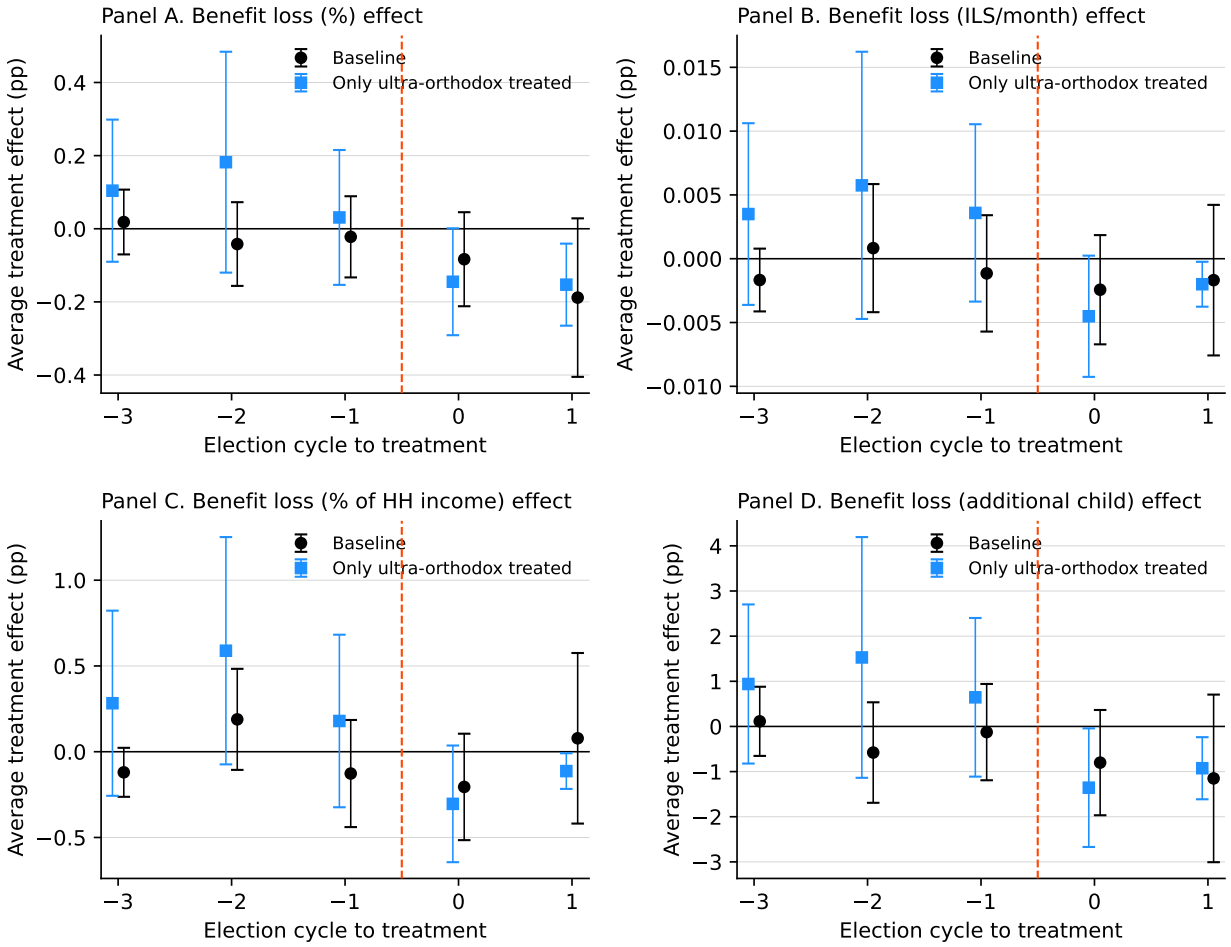


Figure 9: Impact of the 2003 cut in child benefits on support for the 2003 coalition parties using individual-level data. Each panel shows the estimated effect for different treatment definitions. In addition, in each case the effect was estimated when restricting the treated voters to ultra-orthodox voters only (blue). The error bars represent 95% confidence intervals.

percentage point reduction in income tax increased the support for the coalition parties by 1.7 percentage points in 2006. A percentage point loss due to the cut in child benefits led to decreased support by 0.2–0.3 percentage points, *i.e.*, 5.5–8.5 weaker.

The difference between the magnitudes of the effects is illustrated and summarized in Figure 10. It highlights an important finding – the two reforms have asymmetric effects. Positively affected richer voters were more likely to increase their support in the parties implementing the policy change than negatively affected poorer voters were likely to decrease their support. Such an asymmetry demonstrates how inequality-increasing policy is not met by increased support for redistribution overall.

The larger effect observed among ultra-orthodox voters in the loss domain is an indication

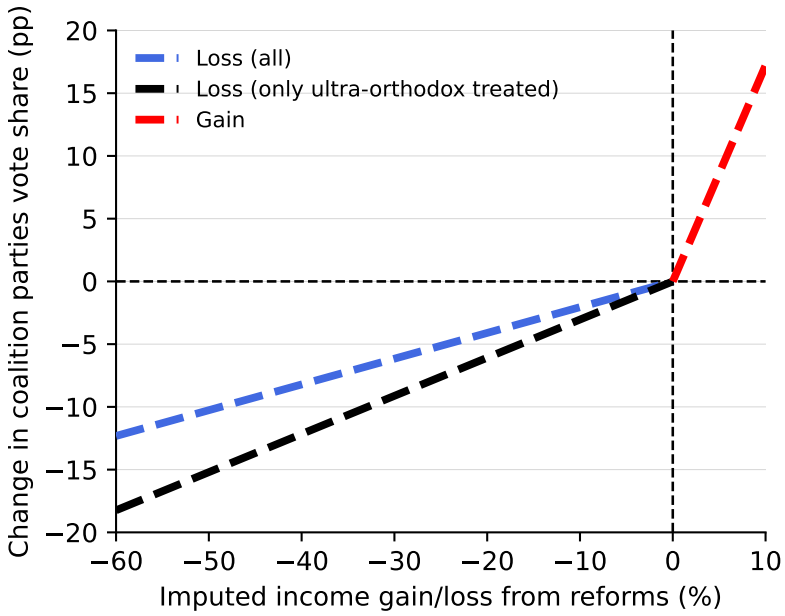


Figure 10: The asymmetric effect of the 2003 reforms on support for the 2003 coalition parties in 2006. The blue and black lines indicate the predicted change in vote share for the 2003 coalition parties as estimated for the cut in child benefits in the loss domain, including the stronger effect on ultra-orthodox voters. The red line indicates the predicted change estimated for the tax cut in the gain domain.

of a key, potentially rare phenomenon of instrumental identity-based voting. Other voters with many children, who are not ultra-orthodox, do not necessarily belong to a certain well-defined identity group with parties that represent their material interests. Ultra-orthodox voters, whose sectoral parties were not among the coalition parties that implemented the 2003 reforms, have such an alternative. Indeed, in 2006, both large sectoral ultra-orthodox parties (Shas and Yehadut Hatorah) gained each one seat in the Knesset compared to 2003.

Additional evidence for identity-based voting

The results so far confirm that the 2003 income tax cuts led to increased support in the coalition parties among richer voters who benefited from the cuts. An additional facet of the main analysis is the effect the 2003 reforms had on the Likud vote share, specifically in its 'strongholds', or bases. These strongholds are municipalities perceived as forming the Likud's base of support. Understanding the effect of the reforms in the Likud bases is important for two main reasons:

- Traditionally, smaller municipalities in the periphery of Israel exhibit high vote shares for the Likud. At the same time they are usually poorer than average (yet not among

the poorest municipalities). Thus, inequality-increasing policies would tend to be harmful to many Likud voters in the Likud bases.

- In the 2006 elections, the head of the Labor party, traditionally the main political rival of the Likud, was Amir Peretz, a former head of the general trade union center and vocal opponent to the 2003 reforms, widely perceived at the time as a "working class hero" and as "the leader of the redistributors" (Lochery, 2007). Peretz, coming himself from a small town in the periphery of Israel, was perceived as a figure that can create a massive move of traditional Likud voters to the Labor party.

This leads to the hypothesis that the 2003 reforms had a negative impact on the Likud vote share among voters in poorer Likud bases. It is also possible that Likud bases that were negatively affected by the cut in welfare benefits exhibit a particularly large reduction in support for the Likud between 2003 and 2006. In practice, as I show below, both treatments are uncorrelated with the change in the Likud vote share across these bases. This could be indicative of identity-based voting, and voters in these municipalities could be less susceptible to change their vote due to material treatment.

I define Likud bases as municipalities in which the Likud received a vote share of at least 25% in each of the 1992, 1996, 1999, and 2003 elections. There are 81 such municipalities in the dataset (about 8% of municipalities), of which 73 are very small municipalities with up to 2000 residents.

The top panel of Figure 11 shows the vote share for the Likud in the 1992, 1996, 1999, 2003, 2006, 2009, 2013, and 2015 elections, in Likud bases that are richer (defined as having income per capita higher than the average income per capita in 2006) and poorer (having income per capita lower than the national average in 2006). It shows that these two groups of municipalities were essentially identical in their support for the Likud in 1999, 2003, and 2006. These results show no differential change in voting for the Likud based on income in the Likud strongholds during the relevant period for the reforms.

The bottom panels of Figure 11 are scatter plots. Each dot represents one Likud base, where the y-axis is the difference in the Likud vote share between 2003 and 2006. In all Likud bases the vote share decreased substantially (as was the overall support for the Likud). This change is uncorrelated with neither the tax-cut treatment nor the cut in child benefits. The bottom left panel shows that the reduction in support for the Likud in its bases is uncorrelated with the share of households with 6 members or more in the municipality. This is indicative of no effect of the cut in child benefits. The higher the share of households with 6 members or more, one should expect a larger impact of the cut, and a larger decline in support for the Likud. However, there is essentially no correlation between these variables ($\rho = -0.0002$,

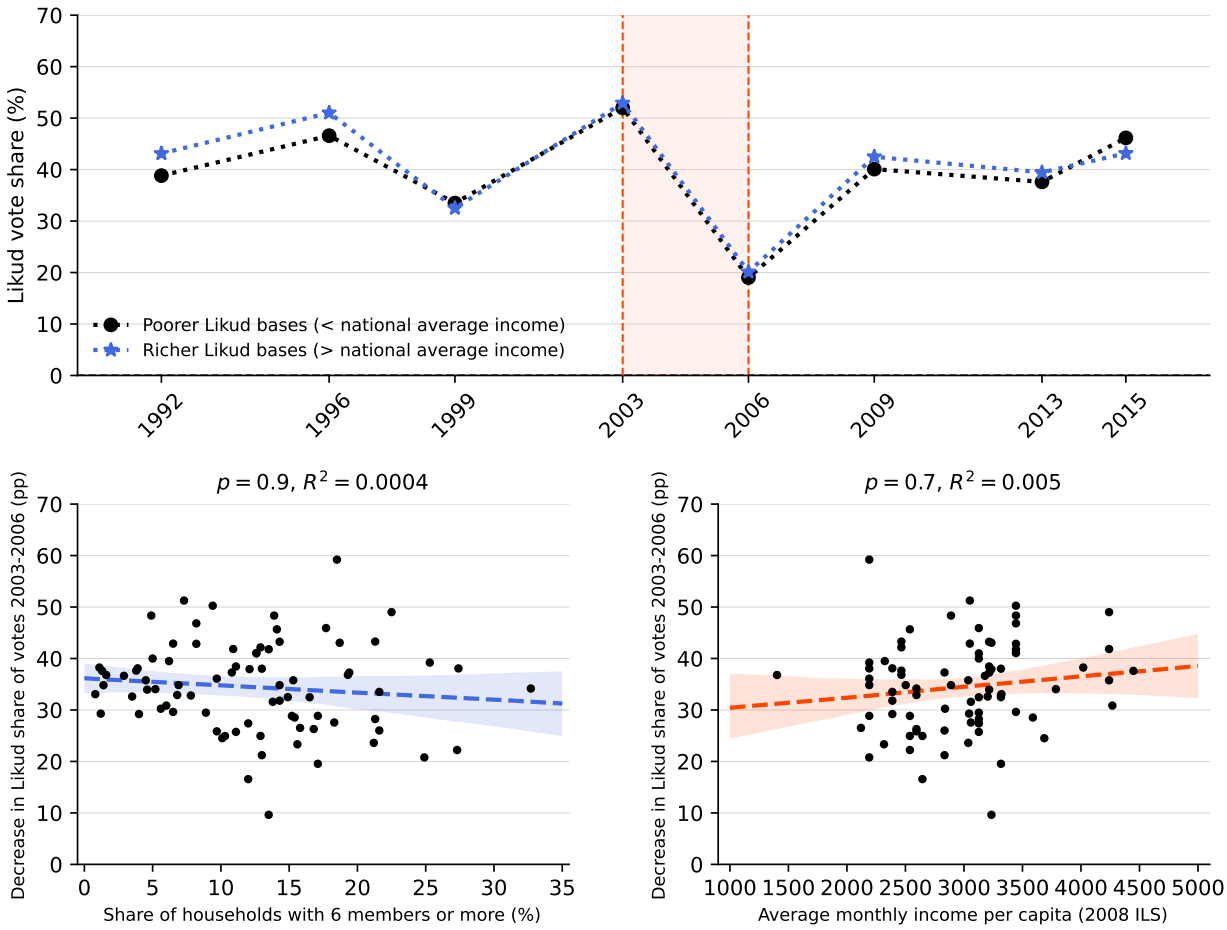


Figure 11: The low impact of monetary treatments in Likud bases. Top) The Likud vote share among Likud 'strongholds', 1992–2015. Strongholds are defined as municipalities in which the Likud received at least 25% of the votes in each of the 1992, 1996, 1999, and 2003 elections. The results are divided into poor municipalities (black), in which the income per capita is lower than the country average, and rich municipalities (blue), in which it is higher than the national average. The shaded areas represent 95% confidence intervals.

$SE = 0.001$, $p = 0.9$, $R^2 = 0.0004$). The result is found with or without controls, and when weighting municipalities by population or not.

The bottom right panel in Figure 11 shows that the reduction in support for the Likud in its bases is uncorrelated with the average income in the municipality. This is indicative of no effect of the cut in taxes and the reduction in tax progressivity. The higher the average income in the municipality, one should expect a larger impact of the cut, and a smaller decline in support for the Likud. Once again, there is essentially no correlation between the variables ($\rho = 0.0$, $SE = 0.00002$, $p = 0.7$, $R^2 = 0.005$). The same result is found with or without controls, and when weighting municipalities by population or not.

As explained, these results may be indicative of the salience of identity-based voting. The results presented above, based on the difference-in-differences analysis shows a significant effect to both treatments. Figure 11 shows that the effect becomes null when restricted to the Likud strongholds. It is possible that voters in these strongholds are less willing to exchange their vote for material benefits compared to the general voter population. In this case, unlike the case of ultra-orthodox Jews, it is expressive, rather than instrumental identity-based voting.

The poorer Likud strongholds in the data are predominantly peripheral towns which were originally Ma'abarot. These were refugee camps established in the 1950s to provide basic housing for Jewish refugees that came mainly from the Middle East and North Africa. As such, these municipalities tend to be predominantly composed of Mizrahi Jews and thus largely ethnically homogeneous. The Mizrahi Jews tend to be associated with voting for the Likud (Dahan, 2022). Given the evidence on the positive impact of the 2003 tax cut on support for the coalition among richer municipalities, one would have expected the gap between the rich and poor municipalities in Figure 11 to become larger in 2006 compared to 2003. The gap remained the same. This could be because the increase in the gap was offset by the salience of identity-based voting. This interpretation, which cannot be directly tested using the data, is related to the mechanisms which can explain the overall findings both in the individual level and the municipality level, and are discussed in more detail in Section 5.

4.1 Potential threats to the validity of estimates

There are various potential concerns to the validity of the results. Important ones are take-up issues, where eligible voters are practically nontreated in a way that correlates with voting, and unobservables, *i.e.*, variables not accounted for which correlate with both voting and treatment. These concerns, however, are unlikely to impact the results.

Child benefits, as previously mentioned, are not means-tested in Israel, and do not require an application. They are received automatically after registering a newborn child from the National Insurance Institute. In practice, however, due to registration inconsistencies, 97.9% of eligible children indeed received benefits in 2006. Using the National Insurance Institute administrative data on welfare benefit recipients by municipality (National Insurance Institute, 2007) it is possible to test whether the share of eligible children was exceptionally high in some municipalities and not in others. In particular, it is found to be uncorrelated with the treatment: the share of children receiving the benefits is not correlated with the share of families with four or more children across municipalities ($\rho = -0.03$, $SE = 0.04$, $p = 0.42$, $R^2 = 0.003$). Thus, this would not interfere with the estimates.

Unobservables are a concern if they correlate with the treatment and with voting behavior, and at the same time changed between 2003 and 2006. Using a difference-in-differences design with fixed effects resolves the concern of having unobservables that correlate with both voting and treatment, and are fixed. Yet, there could still be other confounding effects, if certain issues changed between 2003 and 2006 differentially across voters. There are two key issues that can substantially affect voting and may have changed between 2003 and 2006: the security issue, and the economic issue.

The national security situation in Israel has substantially improved between the 2003 and the 2006 elections. There were far fewer terror incidents in 2005 and 2006 than in 2002 and 2003 (298 civilians killed in 2002 compared to 44 in 2005 (Intelligence and Terrorism Information Center at the Israel Intelligence Heritage & Commemoration Center, 2007)). This may have affected voting behavior in favor of the incumbent government (in particular voting for the Likud and Kadima, leading the coalition), and could interfere with the estimates if this effect on voting behavior differed across treatment intensities. I can address this specific issue using questions asked in the 2006 pre-election survey. Voters were asked to rate the national security situation today (early 2006) and five years ago, from 1 (the worst possible) to 9 (the best possible). I subtracted the latter rate from the former, creating an index reflecting the voters' perception of the change in security. Now, it is possible to test whether this index is correlated with the treatment and with voting.

The change in security index is weakly and negatively correlated with household size ($\rho = -0.03$, $SE = 0.03$, $p = 0.28$, $R^2 = 0.08$). In smaller households, voters reported overall improvement in security, whereas in larger households there was no change on average, or even perceived deterioration in security. Thus, larger households were not only negatively treated through the large cuts in child benefits, but also experienced a negative change in security. Both effects should go in the same direction in terms of support for the incumbent government. Had the cut in child benefits treatment effect been negative, *i.e.*, that larger households supported the government less, it would have been difficult to decompose the effect into the contribution of the cut in child benefits and that of the perceived deterioration in security. Given that the estimated effect on voting for this treatment was small and not significantly different from zero, the security issue does not create a confounding effect, and does not invalidate the estimates. I also repeated the pooled difference-in-differences estimations while adding the security index as a control variable. The results are essentially identical to Table 2 in all cases, indicating that the small and insignificant correlation between the change in security index and household size cannot invalidate the estimates for the cut in child benefits treatment.

The change in security index is also weakly correlated with the level of family expenditures relative to the average family expenditure. Based on their answers in the 2006 survey, voters were divided into three household expenditure levels – those who identify as having higher expenditures than average, about the same as average, and less than average. The correlation between the level of expenditure and the change in security index was -0.06 ($SE = 0.05$, $p = 0.28$, $R^2 = 0.08$), *i.e.*, richer voters were more likely to report an improvement in security than poorer voters. Thus, it is a concern that the estimated tax cut treatment effect reflects preferences related to the perception of security and not to the effect of the tax cuts.

Yet, the correlation found is weak and statistically insignificant. An additional evidence for the limited importance of this potential issue is presented in the top panel of Figure 11. In rich municipalities with historically high Likud vote share, income per capita was more likely to increase between 2003 and 2006 than in poorer municipalities. However, there is no differential change in the Likud vote shares in these two groups of municipalities between 2003 and 2006.

An additional key issue is the economic issue. The Israeli economy improved between 2003 and 2006 in terms of employment and economic output. Yet, at the same time, poverty and inequality levels increased substantially, reaching their historical records to this day, as shown in Figure 3 (also see Dahan (2017)). It is possible that the change in voters' economic situation between the two elections, irrespective of the treatment they received following policy changes, affected their vote in 2006. This could limit the validity of the estimates above.

The change in economic situation between 2003 and 2006 is related to both treatments by design. It is, in fact, the effect I wish to measure – how a positive or negative change in economic status driven by specific policy changes affected voting. Regardless, it is possible that voters' economic situation improved despite receiving the negative monetary treatment. This can potentially explain the weak effect found for the negative treatment.

I can address this concern using, once again, the 2006 survey. Voters were asked to answer whether their "own personal economic status" improved, stayed about the same, or got worse (over the past year). To test whether the change in economic status interferes with the estimation, I first checked whether voters' answer to this question correlates with the household size, *i.e.*, with the child benefit treatment. The correlation is negative, yet once again, fairly small and insignificant ($\rho = -0.01$, $SE = 0.02$, $p = 0.48$, $R^2 = 0.0014$). Similarly to the case of the security index, I repeated the dose treatment while adding the change in economic status as a control variable. The results were nearly identical to Table 2 in all cases. Thus the small correlation between the perceived change in economic situation

and household size cannot invalidate the estimates for the cut in child benefits treatment.

An additional concern is related to the interpretation of the tax cut treatment. It is possible that richer voters also increased their support in the coalition parties due to their support in the cut in child benefits and not necessarily due to their gains from the tax cuts. While they were not positively affected by them from an immediate monetary point of view, they could support them ideologically. In that sense, a part of the treatment effect could be due to an ideological component. As discussed in detail above, I focus on the direct material payoff, leaving the separation of such effects into a direct monetary channel and an ideological/belief-based channel to future work.

5 Mechanisms: Identity Voting and Asymmetric Responses to Policy Changes

Various mechanisms may be driving the analysis findings. I will first describe how the findings can be further generalized. Then, I will rationalize them, providing possible explanations for their underlying mechanisms.

The generalization of the main empirical observations are:

- An asymmetry in the political response to inequality-increasing policy. Two types of asymmetry are observed:
  - Positive material treatment had a positive effect on the support for the parties implementing the positive change; The negative material treatment, which was generally larger in magnitude than the positive one, had a much less pronounced negative effect, which was essentially restricted to a specific social identity group.
  - Richer voters were significantly affected by a material treatment, whereas poorer voters were less affected.
- Evidence for identity-based voting, which manifests itself in two possible ways:
  - Expressive identity-based voting (Brennan and Lomasky, 1997), in which individual identity groups, such as ethnicity or religious affiliation, may determine political preferences in a way that dominates economic wellbeing or possible material payoffs.
  - Instrumental identity-based voting, in which identity-based voting is aligned with economic wellbeing or possible material payoffs. While instrumental voting is gen-

erally perceived as a reflection of rational choice, identity-based voting is typically perceived as acting against such rational choice (*i.e.*, that is based solely on monetary payoffs). This makes instrumental identity-based voting rarer, compared to its expressive counterpart.

The individual-level dataset includes information on voters' redistributive preferences. Thus, in addition to theoretical insights related to the empirical analysis, it is possible to learn about the mechanisms leading to the results by studying voters' attitudes. First, I address voters' attitudes with respect to taxes and welfare using the 2006 pre- and post-election survey. Regarding taxes, voters were asked the following question: "Would you be willing or would you not be willing to have taxes raised, so that you would have to pay more taxes, in order for the country to be able to deal with the problems it faces?"; regarding welfare expenditures voters were asked: "Should the country spend more money, less money or the same as it does today on welfare payments?". In addition, voters were asked what is the single topic they believe the 2006 elections were about (see also Figure 4). The modal answer was the socio-economic issues.

Figure 12 shows how the answers to these questions depended on household size, the main variable used to identify voters affected by the child benefit cut.

Figure 12 shows that voters from smaller households (thus, with less children) are generally willing to pay more taxes than voters from large households. An additional household member decreases the support for paying more taxes by 2.5 percentage points on average. Yet, when controlling for additional variables as before (age, gender, religion, household expenditure level, self-declared social class, years of schooling, resident of center/periphery locality, ultra-orthodox Jew/not, ethnicity), the slope becomes much smaller (0.56 percentage points), and it is statistically insignificant ($p > 20\%$).

I find that no correlation between the support for more public welfare expenditures and household size (with and without controls). After controls the slope is slightly positive (0.92 percentage points), yet statistically insignificant ($p > 10\%$).

The salience of the socio-economic issue in the elections seems to be high across all household sizes. The slope in this case is small (0.58 percentage points) and statistically insignificant ($p > 20\%$). After adding controls it becomes slightly negative (-1.9 percentage points, $p = 0.046$). This serves as an indication for the socio-economic issue being of lesser interest or importance to families with many children, as hypothesized above and inline with the theoretical literature (Matakos and Xefteris, 2017; Besley and Persson, 2021).

An additional insight revealed by voters' redistributive preferences is their support for more public welfare expenditures with respect to their household expenditure level. As one could

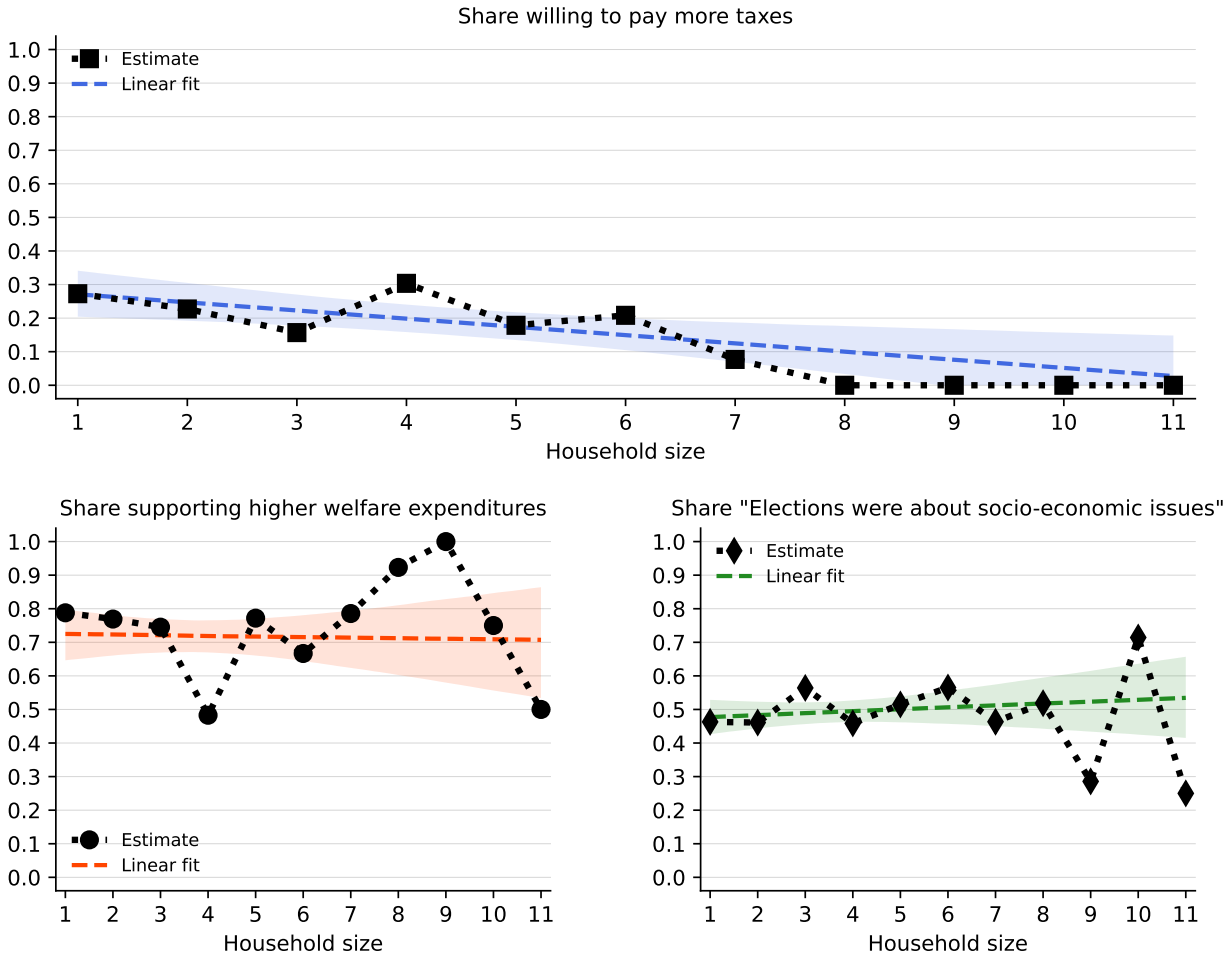


Figure 12: Attitudes towards taxation (top), welfare (bottom left) and the salience of the socio-economic issue (bottom right) in the individual-level dataset. Data were taken from the 2006 pre- and post-election survey of the Israel National Election Studies (Arian et al., 2018) (see Section 3). The shaded areas represent 95% confidence intervals produced by bootstrapping. Regarding taxes, voters were asked the following question: "Would you be willing or would you not be willing to have taxes raised, so that you would have to pay more taxes, in order for the country to be able to deal with the problems it faces?"; regarding welfare expenditures voters were asked: "Should the country spend more money, less money or the same as it does today on welfare payments?"; regarding salience, I am looking at the share of voters within each household size who answered that elections were about the socio-economic issues.

have expected, individuals who identify as being poorer, as reflected by their declared household expenditure level relative to the average, are more supportive of increased public welfare expenditures. Voters were divided into three household expenditure levels – those who testify as having higher expenditures than average, about the same as average, and less than average. The difference in support for increased public welfare expenditures between each of

these levels was 7.9 percentage points. Yet, again, after adding controls as before, this effect becomes smaller (4.6 percentage points) and statistically insignificant ($p > 10\%$). Thus, while taking into account the relationship between age, sex, education, religiosity, ethnicity and household expenditure levels, it is no longer possible to find a residual significant support for more public welfare expenditures. This is inline with the previous observation on the possibly low salience of welfare payments in voting, even among poorer voters.

6 Conclusion

This paper exploits a major reform in Israel that was implemented by the Likud-led coalition in the period between the 2003 parliamentary elections and the 2006 parliamentary elections. The reform included several policy changes, which negatively affected poorer voters and families with many children. In particular, the most substantial and publicly-controversial reform was a massive cut in child benefits, reducing them for some by more than 50% virtually overnight.

I use information on the reform together with rich individual-level data, which include information on voting and a set of socio-economic and socio-demographic variables. The latter allow accurate identification of the winners and the losers from the steps taken. I complement this rich dataset with administrative municipality-level data which include both official election results and a set of socio-economic and socio-demographic variables. The municipality-level dataset allows addressing the impact of a major tax cut that was implemented alongside the welfare reform. The tax reform had little impact on the effective tax rate paid by lower income deciles. However, it led to a sizable decrease of about 7 percentage points in effective tax rates paid by the top decile.

The major set of reforms and tax cuts were followed by a steep rise in inequality and poverty levels, reaching record levels in 2005 and 2006, and leading to the highest child poverty level in the OECD. The 2006 parliamentary elections were thus perceived as one of the few elections in the history of Israel where economic and social issues dominated the public discourse.

Using a difference-in-differences design, I found that the welfare reform had a small negative impact on the support for the coalition parties that implemented it. The effect was larger for ultra-orthodox Jews. Using a similar difference-in-differences design the municipality-level data reveal that the major tax cut increased the support for the coalition parties among those enjoying it by 5 to 10 percentage points.

These findings are inline with the rising importance of identity-based voting, where more

than purely material payoff, but also the status gained from voting as a part of a group one identifies with, plays a big role (Shayo, 2009; Klor and Shayo, 2010). The results are indicative of identity-based voting that manifests itself in two distinct ways. The first is purely expressive voting, where voters support parties they identify with for various reasons, but are unlikely to promote policies that are beneficial for them. Yet, I also observe instrumental identity-based voting, where a specific group within society, ultra-orthodox Jews, seems to be united with its electoral behavior in a way that is inline with its potential material payoff.

The asymmetry between the insignificant negative effect of the massive child benefit cut and the significant positive effect of the substantially smaller tax cut suggests that voters may react more positively to positive treatments than they react negatively to negative treatments. Such an asymmetry between a negative material treatment affecting poorer voters and positive material treatment affecting richer voters can be an indication of higher salience for material issues among richer voters, in comparison to other issues, such as security (*c.f.*, immigration issues in Besley and Persson (2021)).

In conclusion, the analysis results, in addition to the analysis of self-reported preferences, as described above, provide evidence for two mechanisms that could be driving the results. The first is

The findings of this paper are indication for how major policy changes that substantially lead to rising inequality and poverty have a complex electoral impact. They show that increasing inequality by decreasing taxes for richer voters may have a positive electoral effect. Yet, increasing inequality by decreasing transfers, may not have a substantial negative electoral effect. A better understanding of this asymmetry, by establishing it theoretically and by providing more evidence for it in other contexts and countries, is planned for future work.

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A Fertility by Social and Religious Group

Figure 13 presents the total fertility rate (average fertility per woman) in Israel between 1992 and 2016. It shows that fertility in Israel is increasing in all groups and overall, except for ultra-orthodox women, in which fertility declined somewhat after the 2003 reforms and remained stable after 2006 (but did not decline among religious women). The increase in the overall rate is therefore also a result of a composition effect, since the share of ultra-orthodox women in the overall population is increasing over time.

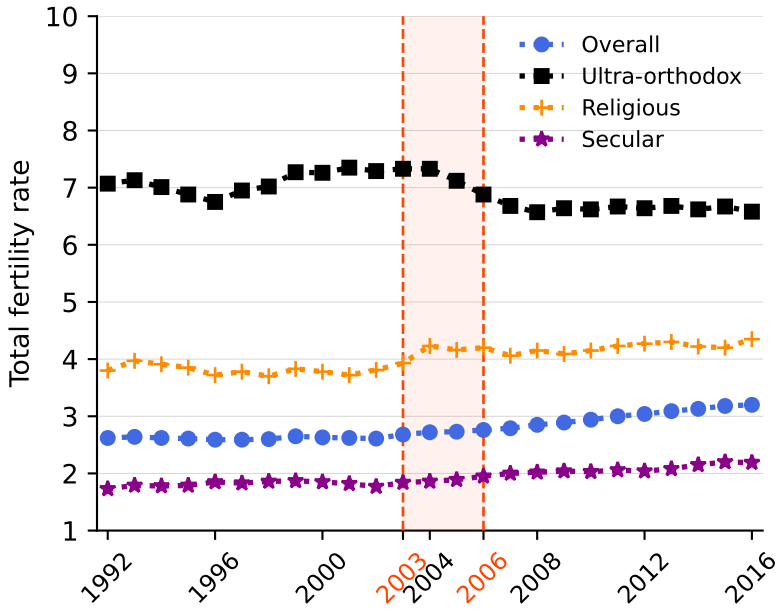


Figure 13: Total fertility rate (average fertility per woman) in Israel 1992–2016. Source: Author's calculations based on Central Bureau of Statistics (2022).

B A Comparison of Data with the Official Election Results

Table 3 presents the election results in 2003 and 2006 based on the official records (Central Elections Committee, 2021) and on the survey data (Arian et al., 2018). The results for localities are based on the full election results when restricted only to localities included in the municipality-level data (see Section 3), but it is essentially identical to the official results. Note that only lists receiving at least 1% of the votes in the official results were included.

Table 3: Election results by source (% of votes)

	2003 elections			2006 elections		
	Official	Localities	Survey	Official	Localities	Survey
Likud	29.9	29.9	32.7	9.3	9.3	9.4
Labor (Avoda)	14.7	14.7	19.5	15.5	15.5	16.3
Shinui	12.5	12.4	12.0	–	–	–
Shas	8.4	8.4	5.3	9.8	9.8	5.5
Haihud Haleumi	5.6	5.6	5.7	–	–	–
Meretz	5.3	5.3	9.5	3.9	3.9	4.9
Mafdal	4.3	4.3	2.2	–	–	–
Yehadut Hatorah	4.4	4.4	3.0	4.8	4.8	3.9
Hadash	3.0	3.0	2.6	2.8	2.8	3.1
Am Ehad	2.8	2.8	0.7	–	–	–
Balad	2.3	2.3	1.2	2.4	2.4	2.6
Israel Bealiyah	2.2	2.2	0.9	–	–	–
Raam	2.1	2.1	1.8	3.1	3.1	1.8
Ale Yarok	1.2	1.2	1.0	1.3	1.3	0.3
Herut	1.2	1.2	1.8	–	–	–
Kadima	–	–	–	22.7	22.7	24.2
Israel Beitenu	–	–	–	9.3	9.3	13.8
Haihud Haleumi – Mafdal	–	–	–	7.4	7.4	7.3
Gil	–	–	–	6.1	6.1	6.0
Hayerukim	–	–	–	1.6	1.6	0.9

Also note that Haihud Haleumi in 2003 was an alliance between Haihud Haleumi and Israel Beitenu. In 2006 Israel Beitenu ran separately, where Haihud Haleumi ran in alliance with Mafdal. Am Ehad (ran as a separate list in 2003) united with the Labor party in 2006. Kadima and Gil were two new lists in 2006 (Kadima was mainly composed of members of the Likud, as explained in Section 2). Hayerukim received less than 1% of the votes in 2003, and Shinui received less than 1% of the votes in 2006. Israel Bealiyah merged with the Likud

right after the 2003 elections, and ceased to exist as an independent party.

C Vote Flows between 2003 and 2006

Figure 14 displays a Sankey diagram, showing vote flows between 2003 and 2006. The numbers that represent the flows in Figure 14 are detailed in Table 4.

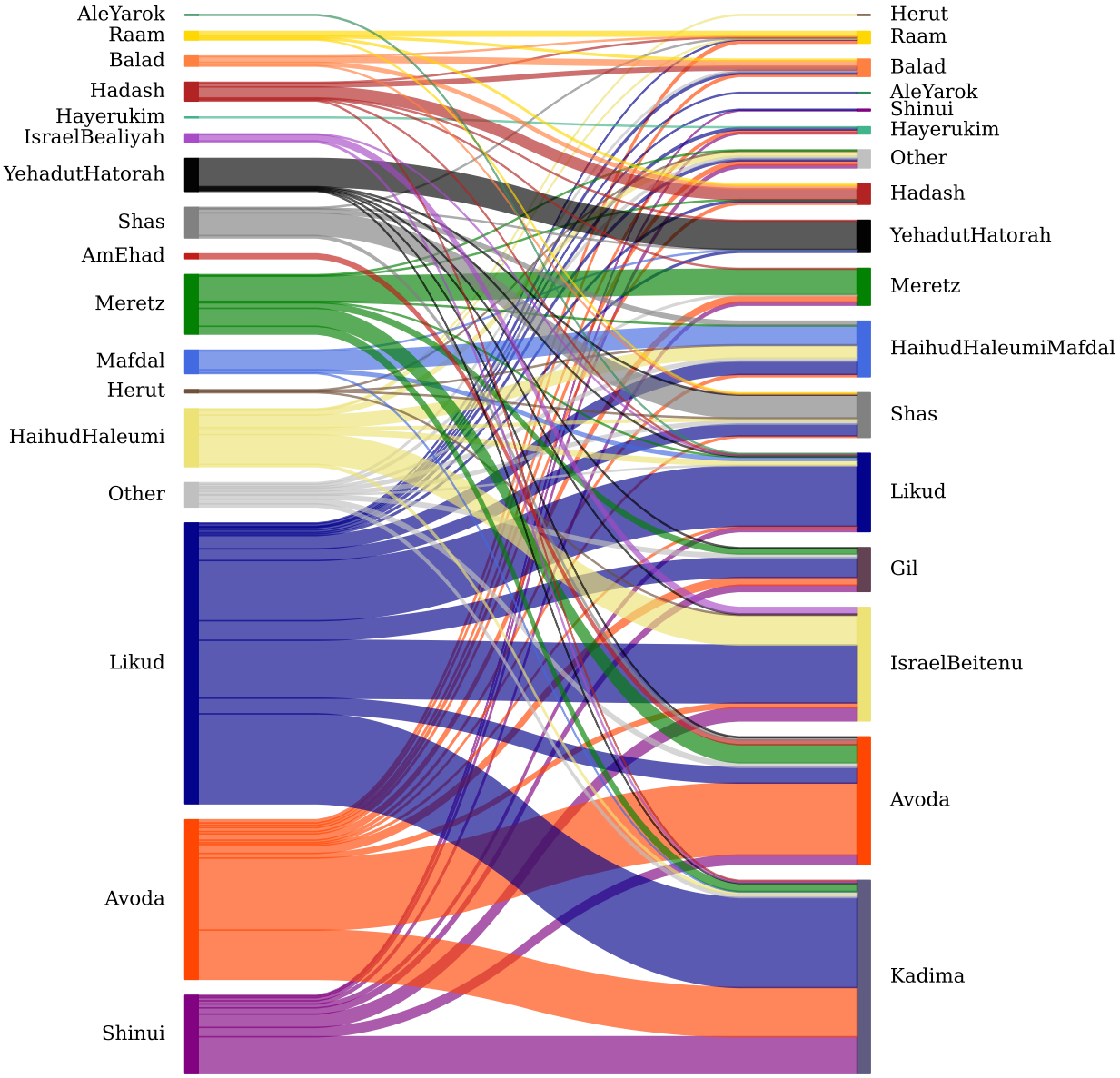


Figure 14: Vote flows between 2003 and 2006.

Table 4: Vote flows between 2003 and 2006 (% all of votes). Each entry (i, j) in the table represents the share of voters who voted for the party in row i of the table in 2003 and for the party in column j in 2006.

	Likud	Labor	Shinui	Shas	Haihud Haleumi	Meretz	Mafdal	Yehadut Hatorah	Hadash	Am Ehad	Balad	Israel Bealiyah	Raam	Ale Yarok	Herut	Kadima	Israel Beitenu	Haihud Haleumi Mafdal	Gil	Hayerukim	Other
Likud	7.5	1.95	0.1	1.46	0	0	0	0.19	0.19	0	0.29	0	0.1	0.1	0	11.21	7.21	1.66	2.44	0.29	0.29
Labor	0.19	8.97	0	0.19	0	0.78	0	0	0.29	0	0.29	0	0.39	0	0	6.14	0.58	0.29	0.97	0.29	0.49
Shinui	0.49	1.17	0.1	0	0	0.39	0	0	0	0	0	0	0	0	0	4.58	1.66	0	0.78	0.19	0.39
Shas	0	0.29	0	2.83	0	0	0	0.1	0	0	0	0	0.1	0	0	0	0	0.49	0	0	0
Haihud Haleumi	0.58	0	0	0.29	0	0	0	0	0	0	0	0	0.1	0	0.1	0.29	3.7	1.56	0	0	0.58
Meretz	0.1	2.24	0	0	0	3.12	0	0	0.1	0	0	0	0	0	0	0.97	0	0.1	0.68	0	0.1
Mafdal	0.39	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.1	0	2.34	0	0	0
Yehadut Hatorah	0.1	0.1	0	0.1	0	0	0	3.51	0	0	0	0	0	0	0	0.1	0.1	0	0.1	0	0
Hadash	0.1	0	0	0	0	0.1	0	0.1	1.36	0	0.49	0	0.1	0	0	0.1	0	0	0	0	0
Am Ehad	0	0.58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Balad	0	0	0	0.1	0	0	0	0	0.39	0	0.68	0	0.1	0	0	0	0	0	0	0	0
Israel Bealiyah	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.19	0.78	0	0	0	0
Raam	0	0	0	0.1	0	0	0	0	0.19	0	0.19	0	0.58	0	0	0	0	0	0	0	0
Ale Yarok	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Herut	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0.1
Kadima	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Israel Beitenu	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haihud Haleumi Mafdal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hayerukim	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0
Other	0.1	0.58	0	0.39	0	0.19	0	0	0	0	0.19	0	0	0	0	0.39	0	0.39	0.49	0	0.29