Does Diversity Divide?

Public Goods Provision and Soviet Emigration to Israel [*]

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Abstract

The conventional wisdom holds that diversity is a significant hindrance to collective action and the provision of public goods. Empirical support for this view comes primarily from the observation that measures of diversity are negatively correlated with provisions of public goods in the cross-section. The generally held conjecture is that this negative relationship is true within countries over time as well. I address this belief directly by exploiting a natural migration experiment and a unique IV strategy to causally identify the impact of diversity on public goods expenditures and revenues. With the political collapse of the Soviet Union in the fall of 1989, mass migration to Israel increased the population there by roughly seven percent over two years. This led to substantial changes in diversity in local communities, with some becoming more homogeneous and others becoming more diverse. I confirm the usual negative relationship in the cross-section by using data on local government budgets at disaggregated levels. However, I find limited evidence that increased diversity leads to lower expenditures on local public goods when I instrument for changes in diversity using historic settlement patterns. Local revenue generating mechanisms do respond to changes in diversity, but are offset by national government transfers.

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"The differences in attitude towards redistributive taxes are not just between countries but also within them, and economists have several explanations as to why. When it comes to differences between countries, social cohesion plays a major role. **Broadly speaking, countries that are more ethnically or racially homogeneous are more comfortable with the state seeking to mitigate inequality by transferring some resources from richer to poorer people through the fiscal system.** This may explain why Swedes complain less about high taxes than the inhabitants of a country of immigrants such as America. But it also **suggests** that even societies with a tradition of high taxes (such as those in Scandinavia) might find that their citizens would become less willing to finance generous welfare programmes were immigrants to make up a greater share of their populations." - The Economist, Economic Focus, August 13th 2011 (emphasis added)

1 Introduction

The role diversity plays in the provision of public goods has been an important issue for many of the social sciences. The provision of public goods, and collective action more generally, have been challenging problems to understand, given that individual incentives are often misaligned with social incentives. While theory has tended to focus on forces that either exacerbate or alleviate the collective action problem, the empirical observation has been that while some collective action is often observed, the provision of public goods seems to depend greatly on the specific characteristics of a given community.

The difficulty in generalizing the important forces driving the provision of public goods has led to researchers stressing different elements of diversity in trying to understand when collective action is likely to fail. Studies have looked at a variety of cleavages in society, including age, religion, income, ethnicity, and race. The general findings support the view that increased diversity is correlated with lower provisions of public goods, though the mechanisms behind these failures are less clear.

The conventional wisdom, as summed up by the opening quotation from a recent *The Economist* article (August 13th, 2011), notes that there is robust cross-country evidence that suggests individuals are more comfortable with fiscal redistribution policy when a country is more socially cohesive, and racial or ethnic diversity has been identified as a key source of social fracture. While cross-country evidence is relatively robust, there is a logical gap in extending the results to fiscal policy within a country. The quotation above offers only that this evidence is "suggestive" of within country behavior. The quotation hints at a larger issue - namely, in a world with increasing diversity and mass migration, will robust fiscal redistribution mechanisms survive? If there is a true causal force leading from increased diversity to diminished provision

of public goods, then a significant reorganization of societies will be necessary in an increasingly diverse world.

The main challenge associated with this observation is that it is empirically difficult to identify a causal mechanism leading from diversity to the provision of public goods. While there are abundant theories making this claim, it is empirically challenging to identify causality without some sort of exogenous shock to diversity in a community. To be truly confident about the assertion that diversity leads to a lower provision of public goods, rather than some alternative factor driving both the provision of public goods and observed diversity, requires a suitable experimental approach to study the impact of exogenous changes in diversity on the provision of public goods.

This paper attempts to identify this causal channel by studying an episode of mass migration that led to an exogenous increase in diversity in Israel after the collapse of the Soviet Union in 1989. The wave of migration that took place from the Soviet Union to Israel following the collapse was intense in both size and swiftness. Nearly 400,000 immigrants entered Israel in 1990 and 1991, compared to only a couple of thousand in the years preceding. This initial shock represented about seven percent of the population in Israel at the time. Over the entire decade, nearly a million Soviet Jews would eventually move to Israel. The social and political ramifications of this immigration experience are still being felt today.

This migration episode has a number of features that make it an ideal natural experiment for studying the impact of diversity on public goods provision. Besides the swiftness and size already mentioned, the migration phase was unexpected. The collapse of the Soviet Union occurred suddenly, and for many Soviet Jews the opportunity to leave Russia was unplanned. Given the political and social uncertainty following the collapse, emigration was a new and necessary option for many Soviet Jews. From the point of view of empirical identification, the collapse of the Soviet Union was uncorrelated with local conditions in Israel, and represents an exogenous migration shock to Israel.

Furthermore, this was the second large Soviet migration shock to hit Israel in the last half of the 20th century. Following international outcry in response to the social repression brought about by the Dymshits–Kuznetsov Hijacking Affair in 1970, the Soviet Union temporarily relaxed emigration rules. This led to significant emigration of Soviet Jews to Israel from 1972 to 1975, representing an increase of about four percent of the Israeli population. This emigration wave and settlement pattern created networks of Soviet Jews in Israel, which were especially strong because the migrants spoke little Hebrew. To deal with concerns about settlement patterns in 1990 being driven by unobservable characteristics, I construct instruments for changes in diversity based on actual settlement patterns in the 1970's. Identification then depends upon the large immigration shock and instrumented settlement patterns.

I focus on two measures of social fragmentation, religious and ethnic, which most closely capture the social

divisions within Israeli culture. First, I construct a measure of religious fragmentation. Israel is primarily a Jewish nation, but there is significant variation in religious populations at Local Authority level. There is little doubt that religious identity represents a key source of division within this society. If anything, the worry may be that religious fragmentation is too extreme in Israel, and hence not generally applicable. While religious contestation over scarce resources is a common feature of many migration episodes (e.g. Muslims in Europe), questions about general applicability may remain since the religious identity of the migrants was the same as the dominant culture.

To address this question further, I focus on intra-Jewish ethnic divisions. Focusing on localities that are predominantly Jewish, I construct a measure of ethnic fragmentation based on geographic branching. The major ethnic division in Israel is between the Ashkenazi and the Mizrahim. The Ashkenazi have geographic roots in Western Europe, and make up the majority culture in Israel. The Mizrahim are composed of a variety of different Jewish traditions, and are often associated with Jews from Muslim or Middle Eastern cultures. The history of Judaism, with its exodus and return, has been shaped by the traditions and cultures that were developed while in exile in countries around the world. This geographic branching manifests itself in different linguistic, culinary, and liturgical practices. What is important to note is that the society itself has identified ethnicity as a salient social difference. All cultures struggle with their own sense of in-group and out-group, and the drawing of social boundaries. In this sense, ethnic divisions identified in this paper have been well documented within the Israeli culture itself, and represent a key dimension of social fragmentation. The results for ethnic diversity in Israel may more easily generalize to other countries, which have their own culturally defined ethnic boundaries.

Using disaggregated expenditure data for over 100 Local Authorities in Israel, ranging in population size from 5,000 to over 500,000, I replicate the negative coefficient found on measures of diversity using a pooled sample. These cross-sectional results are similar to those found in earlier studies. Based on the empirical approaches used in earlier studies, one would conclude that social fragmentation, both religious and ethnic, is a significant hindrance to the provision of public goods. In this dimension, there is nothing special about either the Israeli data or experience.

The unique features of the migration waves from the Soviet Union allow one to go further, however. First, utilizing a before and after lens, I find only limited evidence that diversity has a negative effect on public goods expenditures. These results represents a significant step forward, as the migration wave provides a large shock to diversity at the local level in Israel, and once one accounts for unobservable fixed effects, there is no consistent evidence that diversity reduces the provision of public goods. This result is robust to a variety of measures of public goods (common to previous literature) and both religious and ethnic fragmentation.

While the shock was uncorrelated with local conditions in Israel, settlement patterns may be responding

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to unobserved local conditions. To address this possibility, I instrument for the change in diversity using the predicted change in diversity based on the settlement patterns from the 1970's migration experience. This specification confirms that for local public expenditures, there is only very limited evidence that religious diversity matters, and no evidence that ethnic diversity matters.

Next, I turn to the revenues side of the local budget. At the aggregate level, total revenues and total expenditures respond very similarly to social diversity. The pooled analysis suggests that there is a strong negative effect of diversity on both sides of the local government budget ledger. When changes in diversity are instrumented, however, social fragmentation is not significant. When I dig deeper into sources of revenue, I find a significant impact of social diversity on locally raised revenue, which is offset by national government transfers. Furthermore, the mechanisms used to generate local revenue respond differently to different types of social fragmentation.

The results presented here suggest that the usual implementation for measuring the impact of diversity is flawed, and that theory may need to be re-evaluated in light of this finding. The methodology used here could be applied in similar contexts to evaluate the robustness of the results. The connection between diversity and collective action is an important issue for public policy, and while there have been repeated attempts to understand the role of diversity, empirical studies thus far have mainly documented negative correlations, and provided suggestive evidence about the causal force. The present study exploits a natural experiment that significantly altered the diversity of a country in a short time horizon to study the causal mechanism leading from diversity to the provision of public goods.

The paper is organized as follows. In Section 2, related literature is discussed, before turning to motivating theory in Section 3. Background of the shock is presented in Section 4, and the identification strategy is presented in Section 5. The data is described in Section 6, while local government and social fragmentation in Israel is discussed in Section 7. Section 8 contains the empirical design and implementation. In Section 9, results are shown. Section 10 concludes.

2   Related Literature

A large body of literature grappling with the question of diversity and public goods exists, and a complete discussion of the related literature is beyond the scope of the present paper. Alesina and Ferrara (2005) provide a fuller treatment in their recent survey on ethnic diversity and economic performance. What distinguishes the present work from the previous literature is the novel attempt to empirically identify causality, and the application of this strategy to a variety of public goods covering most local government expenditures and sources of revenue within a country. A further contribution is that a priori no stand is

taken on what the relevant measure(s) of diversity should be. Rather, multiple measures of diversity common to the literature can be studied simultaneously to evaluate their importance.

The correlation between diversity and growth outcomes has driven much of the interest in the literature. Easterly and Levine (1997) jump-started the literature by looking at ethnic-linguistic fractionalization (as measured by language) and cross-country growth patterns. They found a strong negative correlation, particularly for African countries. A number of papers followed up this observation by carefully documenting micro observations within African countries and villages, again finding similar negative correlations between ethnic fractionalization and public goods provisions. Easterly (2001) updates the analysis to include measures of institutional quality, and finds that good institutions counterbalance the negative effect of ethnic diversity, though it raises further questions about the endogeneity of institutions and ethnic fragmentation.

The macro literature captured additional interest by tying the diversity of nations to the generosity of their welfare systems. In the most well-known study, Alesina et al. (2001) argue that one of the key determinants of the lack of development of a European-style welfare state in the U.S. can be found in the racial diversity of the country. All-encompassing welfare states require social cohesion from cradle to grave, which is easier to maintain if a country is more homogeneous. In this view, the difference between welfare systems in the U.S. and Sweden can be explained by the greater homogeneity of the latter.

There are three major challenges for an empirical study of the impact of diversity on the local provision of public goods. First, a significant number of local governments is needed to convincingly study the allocation decisions for local public goods. Second, a cross-sectional approach can be informative, but it ultimately lacks conviction as unaccounted for factors may be driving the results. Adding a time-series dimension would help inference, but since diversity changes very little over time in most areas, it is empirically challenging to identify impacts. The general strategy is to increase the time horizon of study, but then the force of the panel - the ability to control for time-invariant unobserved factors - is reduced. Third, even when diversity changes over time within localities, these changes may be correlated with unobserved factors, confounding inference. The migration event in Israel provides an ideal setting in that it can account for all three challenges: significant cross-sectional variation, significant changes in diversity over time, and a plausibly exogenous interpretation of these changes in diversity.

The paper closest to the present study is Alesina et al. (1999) who study ethnic diversity and public goods in a cross-section of U.S. cities. This provides the clearest parallel since the focus is on the provision of local public goods, which is more likely to be subject to sorting as first hypothesized by Tiebout (1956). The authors attempt to control for unobserved forces driving the negative correlation observed in the cross-section by using a panel, but due to data limitations, they are unable to convincingly argue that the observed correlation should be interpreted causally. Even with the appropriate time-series data, however, there is still

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concern that unobserved factors that change over time could be biasing the results, and a panel approach by itself would still be insufficient for identifying causality.

A related paper by Alesina et al. (2004) attempts to tackle both causality and endogenous sorting behavior in studying the optimal size and characteristics of political boundaries in the presence of diverse communities. While they don't look at the variety of public goods provisions as in Alesina et al. (1999), they do study changes in school jurisdictions over time. To attempt to identify causality, they use migration phases during World War I and World War II of blacks from the South to the North. Again, however, sample size is an issue, as the authors are only able to study a small number political jurisdictions. Furthermore, push and pull factors in the migration phase are difficult to control and could be influencing both settlement patterns and political jurisdictions.

From a methodological perspective, the closest paper is Boustan (2010). Building off an identification strategy proposed by Card (2001), she uses the black migration experience in the U.S. after World War I to disentangle "white flight" from other causes of white suburbanization. Using a conceptually related IV of predicted migration patterns based on historical settlement patterns, she is able to disentangle the impact of black migrants into a neighborhood from other forces driving white residents away (such as changes in housing prices). Her constructed instruments depend upon predictions for both push and pull forces, whereas here I use the collapse of the Soviet Union for push exogeneity and a previous settlement pattern for pull exogeneity. The logic of the identification strategy, along with the use of a migration episode to identify economic outcomes is similar, although actual implementation and the content of the study are different. Related network-based instruments have been employed by Munshi (2003) to study labor market outcomes for migrants.

Local government in Israel has been studied previously in a number of different dimensions. Brender (2005) studies religious segregation in Israeli-Arab localities, and looks at the impact of segregation on local tax revenue raised through property taxes collected. Justman and Spivak (2004) look at changes in socio-economic measures of well-being in local authorities over a similar time period. The interaction of fiscal behavior and local government elections was studied in Brender (2003), while Navon (2006) looks at the evolution of local government budgets over time in response to changes in budget deficits.

Finally, the immigration wave in Israel after the collapse of the Soviet Union has been used before to study economic outcomes. Friedberg (2001) studies the impact of immigration on the labor market. The excellent data collected by the Israeli government on immigrants allowed her to use information about the occupations of immigrants while in Russia to estimate the impact of immigrants on native wages. Gandal et al. (2004) use the migration experience to test the Rybczynski Theorem by looking at the change in production structure in response to the migration wave, which included a significant number of highly educated migrants. The

immigration experience could be used to further disentangle a variety of economic questions including the impact of migration on production and trade.

3   Theory

There are a variety of theories linking diversity and economic outcomes, most of which emphasize a few main mechanisms. The most common mechanism suggested is simply one of preferences. Ethnic diversity enters individual preferences directly, as people prefer to be around others from their "own group," and diversity in terms of inclusion of members from another group lowers utility. This theory is in some sense a tautology since it fails to characterize what constitutes an "own group," or explain group formation. Individuals prefer people like them. Homogeneity, appropriately defined, is good.

A second mechanism emphasizes the difficulty of collective action, particularly issues of monitoring and enforcement when free-riding behavior is possible. This mechanism assumes nothing about the taste for diversity, but if there are market imperfections, it may be less costly to coordinate with people who share a type.[1] Affiliation with a group can expand the range of possible punishments, while increasing benefits from cooperative behavior. The expansive literature on collective action often emphasizes the relative costs and benefits of group coordination, though it too often ignores questions of group formation or even what the salient borders are for constituting a group.

While the first two mechanisms emphasize the costs of diversity, a third competing mechanism emphasizes potential benefits from diversity. Nearly all of the empirical literature confirms the negative relationship between diversity and various economic outcomes, and hence the majority of the theoretical literature has been devoted to explaining why this negative correlation exists. There are, however, reasons to think that diversity can improve economic outcomes, and most economic models build in some benefit from diversity, unwittingly or otherwise - capital and labor in a production function being a simple example.

Monopolistic competition models use standard Dixit-Stiglitz preferences and production functions to capture the positive aspect of diversity. Having a variety of inputs or a variety of consumption goods increases economic performance in these models, and more diversity is always preferred in the basic structure. It is natural to assume that integrating variety also comes with costs, leading to a conclusion that an optimal amount of diversity exists.

Related models of firm organization or innovation emphasize that the variety and diversity of ideas can improve economic outcomes, although there are additional costs associated with incubating this diversity.

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[1]Miguel and Gugerty (2005) argue that social sanctions within groups are easier to impose than across ethnic groups. They explore this mechanism empirically and find that in more ethnically fragmented areas, communities impose fewer sanctions on parents who fail to contribute to local school funding.

In general, a more nuanced model that captures both the potential benefits as well as the costs of diversity seems preferable to assumptions about tastes for diversity.

To help set expectations and interpretations of the empirical results, consider the following simple stylized model proposed by Alesina and Ferrara (2005) in their review of the literature. The output produced in the economy depends upon the total number of individuals in the economy, different types of individuals, and amount of inputs used:

$$Y = Nf(x; K) \tag{1}$$

where N is total population, x is a fixed factor of input, and K is the number of different types in the economy. Assume a standard CRS production function with diminishing returns to a factor, $f_x > 0$, $f_{xx} < 0, f_K > 0$, and $f_{KK} < 0$. The benefit from diversity is captured in the positive first derivative of f with respect to k. Finally, assume that there is a complementarity in production, $f_{xK} > 0$.

Individual preferences depend on consumption, both of private and public goods. The utility derived from consumption of the public good depends upon the number of types as well as the amount of the public good consumed. The dependence on type captures either of the first two mechanisms mentioned above. It could simply reflect a dislike of having to share with a different type. It could also reflect the fact each type has an ideal public goods preference, but an increase in the number of types involved in producing the public good results in an increase in the expected difference between own preference and group outcome, an interpretation first suggested in Alesina and Spolaore (1997).

The utility function is given by:

$$U_i = u(c_i) + v(g, K) \tag{2}$$

The allocation between public and private goods depends on the tax rate in the economy such that

$$g = t * y$$
$$= t * Nf(x; K) \tag{3}$$

In a social planner problem, the optimal allocation solves the following problem:

$$\max N[u(c_i) + v(g, K)]$$

subject to

$$Nc + g = Nf(x, K)$$

$$g = tNf(x; K)$$

which yields a solution characterized by:

$$Nv_g(g^*, K) = u_g(c_i^*) \tag{4}$$

This equation states that the optimal allocation balances the marginal benefits from taxation (increased consumption of the public good) with the marginal costs of taxation (reduced private consumption).

Given this equilibrium, the question of how the optimal taxation, and hence public goods provision, changes with diversity can be explored further. Applying the implicit function theorem yields the following result:

$$sign\{\frac{dt}{dK}\} = sign\{tN^2 v_{gg} f_k + N v_{gK} - (1 - t)u_{cc} f_k\} \tag{5}$$

The result, which holds N constant while focusing on just the impact of increased diversity on public goods provision, suggests that the LHS is in general ambiguous. While most of the empirical results find the sign to be negative, the trade-offs discussed above leave open the possibility that an increase in diversity can increase or decrease public goods expenditure. The key trade-off here is between the magnitude of the marginal benefit of public good consumption, which declines with social fragmentation, and the increase in productivity as a result of increased variety in production. The interpretation of the negative correlation observed in the data in light of the above theory is that the disutility of sharing public consumption with those different from you outweighs the gains in productivity from having greater variety in production, resulting in a reallocation of consumption away from public goods towards private goods.

Furthermore, while the theory usually assumes the marginal impact of diversity on production is positive, or that the marginal impact of diversity on public consumption is negative, it is possible to be agnostic about the direction of impacts. The rationale for these assumptions was made to match the observed negative correlation in the data. For our present purposes, it is sufficient that diversity impacts both productivity and consumption of public goods, without having to make further assumptions on the theory. With this basic model in mind, we can now turn to the experiment.

4 Background

Starting from its founding in 1948, Israel has repeatedly experienced significant waves of immigration. Prior to statehood, migrants from Europe and the Arab world were common, and these trends continued throughout the modern history of Israel. By the 1980's, however, immigration had slowed significantly. Around one thousand immigrants arrived each month throughout the 1980's.

This relatively consistent trend was broken sharply at the end of the decade, beginning with the collapse of the Soviet Union in the Fall of 1989. Mass migration followed, with the peak of monthly immigration topping 36,000 in 1990 (see Figure 1). Over a two-year period, 1990 and 1991, the population of Israel increased by nearly seven percent (see Figure 2). By the end of 1991, immigration settled down to around 5-10 thousand per month, which continued for most of the rest of the decade. Over the first half of the decade, over 600,000 immigrants from the former Soviet Union arrived, which resulted in an increase of the population by over twelve percent. This represents a truly remarkable immigration experience, in both size and swiftness.

This mass migration can be directly linked to the lifting of emigration restrictions in the Soviet Union, which, when coupled with uncertain and unstable political conditions, led many Russian Jews to emigrate. Israel was a likely destination for a variety of reasons, including the lack of restrictions placed on new immigration. *Aliyah*, or the legal right of return, gives eligible immigrants certain political rights, including assisted settlement, automatic citizenship, and all the rights associated with citizenship.

In a period of marked uncertainty, access to Israel for migrants was highly appealing. The United States, for example, changed their immigration policy towards the Former Soviet Union (FSU) in response to the political collapse. Prior to 1990, Soviet emigrants were accorded refugee status and migration, if possible, was less restricted. Starting in 1990, a standard quota approach to immigration was used for the Former Soviet Union. This severely limited immigration to the U.S. In addition, the U.S. enacted a policy that targeted "family reunification" and prioritized immigrants who already had close relatives living in the U.S. While 200,000 Soviet emigrants moved to Israel in 1990, only 35,000 emigrated to the United States.

For many countries, immigrants are actively excluded from the political process, either through explicit restrictions or informal barriers. This was not the case in Israel, where immigrants immediately had the right to vote, and political levers were in place from earlier Soviet settlement experiences. The right to vote is granted to every resident of a Local Authority, regardless of citizenship, so long as they are listed in the population registry and are 18 years or older in the election year (Elazar and Kalchheim (1988)). This political access is important for uncovering the impact of diversity and immigration on local public goods. If part of the observed negative relationship between immigration waves and declining welfare states is because

of political participation, it would be a mistake to attribute this impact to changing diversity rather than political mechanisms. Immediate access to political levers in Israel is important when studying changes in local government expenditures and revenues, since immigrants need to be able to participate in the political process for this to be a meaningful outcome to measure.

While voting participation at the local level in Israel has been trending down over time, the most significant change in participation came in 1978, when local and national elections were decoupled. After a sharp fall in local government participation in 1978, voting was flat for most of the next two decades, before falling sharply to fifty percent in 2003. Immigration doesn't appear to be a significant contributor to these trends. In 1989, voting participation in local governments was about fifty-nine percent, compared to fifty-six percent in 1993, but trends were generally flat in the 1980's and 1990's as can be seen in Figure 3.

While the migration wave in response to the collapse of the Soviet Union was unique in scope and speed, it wasn't entirely unprecedented. A similar Soviet migration wave to Israel had occurred in the early 1970's. Following the Six Days War in 1967, the Soviet Union and Israel cut diplomatic relations. In response to domestic repression, Soviet Jewish dissidents organized a hijacking of a plane headed to Sweden, in what become known as the Dymshits–Kuznetsov Hijacking Affair. The authorities in the Soviet Union responded to this incident by harshly cracking down on Jewish dissidents. As international condemnation grew, the Soviet Union relaxed emigration rules and allowed significant numbers of Soviet Jews to emigrate to Israel.

As can be seen in Figure 1, there was a spike in monthly immigration starting in the early 1970's, ending around 1975. While the magnitude of this immigration experience is swamped by the 1990's experience, it was a significant immigration wave at the time, relative to the total population of Israel. The earlier immigration episode represented about a four percent increase in the population.

This initial Soviet immigration wave created settlement patterns that were relevant for the 1990's immigration experience. Most of the immigrants coming in the 1970's could not speak the official language. Fewer than twenty-five percent of the immigrants had any previous experience with Hebrew, and actual fluency was significantly lower. The immigrants also had different culinary and liturgical practices, and the communities they set up in the 1970's would create network effects that attracted immigrants in the 1990's, who similarly lacked proficiency in Hebrew. These network effects form the basis of the instrumental approach employed below.

The Soviet Jewish immigrants were distinct from native Israelis in a number of important ways. In particular, many of the Russians Jews were highly educated with significant work experience. On average, the typical Russian migrant was more highly educated than the native Israeli. After the migration experience, Israel would have one of the highest PhD per capita ratios in the world. Besides labor market integration, there were significant differences in linguistic and religious characteristics. While Jewish, most of the new

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immigrants were significantly less religiously oriented than the natives. In addition, the unfamiliar languages increased barriers to the integration of the new migrants into society.

While Israel has traditionally had a welcoming immigration policy for foreign Jews, the size and speed of this particular immigration phase was challenging for both natives and migrants, who had to learn to integrate culturally, politically, and economically. This process of integration had profound impacts on many aspects of life for both groups and, given the size of the adjustment required, provides an ideal natural experiment for exploring the impact of changing diversity on the provision of local public goods.

5   Identification

The search for an exogenous source of variation in diversity centers on the migration wave, in response to the political collapse in the Fall of 1989, from countries that were formerly part of the Soviet Union. The collapse of the Soviet Union was swift and unexpected, and the migration episode of Soviet Jews to Israel that followed was astonishingly large over a short period of time.

There are two key aspects to the migration phase that make it a useful natural experiment for studying the impact of diversity on public goods expenditure. First, the push side of the migration - emigration from the Former Soviet Union - was exogenous to the local conditions in Israel. Second, settlement patterns of migrants in Israel were influenced by historical settlement patterns, which can be used to deal with the worry that settlement responded to unobserved characteristics of the local authorities at the time of settlement.

After the collapse of the Soviet Union, there were few countries, including the U.S., willing to accept Soviet emigrants in large numbers. Israel, with its right of return policy, was willing to accept unlimited numbers of Soviet Jews, providing fast entry and settlement. An additional useful feature of the experiment is that because of the size of the migration episode, areas were differentially impacted such that measured diversity in some local political jurisdictions increased, while in other cases measured diversity decreased. The same basic shock altered measures of diversity in different directions, providing an additional dimension along which to measure the impact of diversity on public goods provision.

Push side exogeneity is clear, as the number of immigrants in Israel prior to the political collapse of the Soviet Union was small, but increased dramatically in the Fall of 1989 as the Soviet Union crumbled. In other examples of large mass migrations, one might be concerned about push side exogeneity, since it is usually something about local characteristics in the landing country that drive the migration wave. In this example, there were significant numbers of emigrants trying to leave the Soviet Union, and there were limited landing options. Put another way, the collapse of the Soviet Union was exogenous from the perspective of local conditions in Israel.

The more pressing issue for identification is a concern that settlement is not random, but rather responding to unobservable characteristics at the locality level. These unobservables could significantly bias the results. I address this issue in two ways. First, using a panel of localities over time, time-invariant characteristics are accounted for in the analysis. A panel approach to estimating the impact of diversity on the provision of public goods has been used in previous studies, but there are reasons to think the approach in Israel's case is likely to produce better inference. Since diversity changes so little within a country over time (in enough localities to ensure statistical validity), panels usually stretch over decades. The longer the time horizon, however, the less likely that important unobservables are time-invariant. In Israel's case, the migration shock represents a significant change to diversity over a short period of time, making it more likely that important unobservables fall into the time-invariant category.

While time-invariant factors are accounted for with locality fixed effects, there is a concern that idiosyncratic forces may be driving both settlement patterns and public good expenditures. For example, the mayor of a locality that had traditionally been hospitable to immigrants, fearing that the area can't handle a large influx of migrants, decides to take steps to minimize immigration flows. This would represent an idiosyncratic change in locality behavior since the area had previously been hospitable to immigrants, and could lead to bias in the estimation of the impact of diversity on public goods expenditure.

To deal with this kind of concern, I construct instruments for actual changes in diversity using the migration networks from the 1970's. The basic idea is to ask what diversity would have looked like if migrants in 1990 had followed the settlement patterns in 1970. Settlement patterns are highly correlated because of the strong network effects based on shared linguistic, culinary, and cultural characteristics. The settlement patterns of the 1970's, however, are unlikely to be correlated with idiosyncratic settlement decisions in 1990, except to the degree that there are time-invariant factors in both periods. The impact of these time-invariant forces is accounted for using fixed effects. Predicted changes in diversity would then be valid instruments for actual changes in diversity. Combining the migration shock and predicted changes in diversity comprises the strategy to causally identify the impact of diversity on the provision of public goods at the local level.

Besides the empirical difficulty of untangling causation from correlation, there is also a confusion over the relevant cleavage in society that exacerbates collective action problems. Studies have looked at a variety of measures of fragmentation, but these often vary with the environment. Race is typically emphasized in the United States, while ethno-linguistic diversity has been emphasized in cross-country studies. Additional studies have emphasized socio-economic cleavages through the prism of education and age. All of these studies emphasize one particular form of diversity without being able to justify why that particular dimension should be the salient fracture. A benefit of the exploitation of the natural experiment under consideration in this paper is that different channels of diversity can be examined simultaneously to see which, if any, truly

influence the provision of public goods.

At the most basic level, the introduction of foreigners increased diversity along the native/foreign cleavage. Studying a large increase in immigrants then captures a first cut at the meaning of diversity, a nebulous concept in practice. Moving beyond the foreign/native divide, I focus on two dimensions of social fracture in Israeli society - religious and ethnic diversity. Education, economic status, population density, and age structure represent other competing dimensions of diversity in society, each of which was altered by the immigration experience. Rather than having to guess what measure of fragmentation is truly salient, we can allow the data to speak for itself.

For all of these reasons - push side exogeneity, large migration flows, pre-existing Soviet migrant network, dimensions of social fragmentation - the Soviet immigration experience in Israel is an ideal setting in which to identify the impact of changes in diversity (along a variety of dimensions) on public goods provisions at the local level.

6   Data

The data used in this paper draws on a comprehensive source of information about local public budgets. Local Authorities in Israel are the primary governmental structure for local issues. These authorities raise revenues from within their geographic areas through taxes and fees, while also receiving grants from the national government. Furthermore, Local Authorities have access to credit markets and can borrow (or lend) to cover revenue shortfalls. The budget is composed of two components, the Ordinary Budget and the Extraordinary Budget. The Ordinary Budget includes expenditures for four main purposes: General Administration, Local Services, State Services, and Establishments. The Ordinary budget has three broad sources: Own Revenue, Transferred Income, and Government Participation. The Local Authority has significant discretion over how they allocate expenditures across services, although they receive some restrictions about usage from national government grants.

The data is drawn from three main sources: 1) Local Authorities in Israel, Financial Data, 2) Local Authorities in Israel, Physical Data, and 3) Labor Force Survey (LFS). This data was collected annually for the years 1985 until 1993.

To construct geographically disaggregated demographic variables, the annual LFS was employed. The LFS collects data on a variety of dimensions, including information on household demographics, education, occupation, and labor market participation. In trying to hew to the previous literature, I follow the convention of capturing diversity using a measure of fractionalization.[2] A Herfindahl index is used to measure

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[2]While Bossert et al. (2011) derive a theoretically consistent measure of fractionalization, I follow the standard in the

fracture in a society based on group shares,

$$Fractionalization = 1 - \Sigma_i s_i^2 \tag{6}$$

where s_i is the share of the group over the total population. Fractionalization variables are created for the two main measures of diversity, religion and ethnicity. [3]

Since Israel has been a country with significant immigration, data collection on immigration issues is excellent. The LFS collects data on the country of origin as well as country of origin of the father for each Jewish resident. I construct a measure of ethnic diversity using information on the country of origin of the father, which is available for immigrant households as well as domestic households. The LFS organizes countries into larger geographic groupings, which form the basis of the ethnic fractionalization shares.

Israel is a nation made up primarily of Jews, but religious fractionalization is a source of conflict within the country. The religious groups identified in the LFS are Jewish, Christian, Muslim, Druze, and Other. In the data, about eighty-six percent of the population is identified as Jewish. When fractionalization measures are developed at the local level, the average measure of fractionalization is 0.09, with a standard deviation of 0.17. There is significant variation in religious fractionalization, ranging from 0 to 0.73. So while there are areas that are completely homogeneous, there is significant variation in religious fractionalization across localities. For comparative purposes, in Alesina et al. (1999), the fraction of "white" in the 1990 census in the U.S. was 0.79, and the average fractionalization measure was 0.27. The standard deviation in racial diversity across municipalities was 0.17, with a range between 0.01 to 0.73. While the Israel experience has a lower average measure of fractionalization, and has a significant number of highly homogeneous localities, there is also significant variation in religious fragmentation within Israel, comparable to racial fragmentation in the U.S. statistically.

Control variables on education, socio-economic status, and age are also constructed, as these have been shown to be important in previous studies. Descriptive statistics on measures of diversity are presented in Table 1. The one exceptional measure is the share of immigrants, which is on average thirty-five percent, and the variation is also quite dramatic. In the most extreme observation, the immigrant share in a locality is seventy-six percent.

On the public finance side, I focus on expenditure variables that compare to previous measures of public goods used in the literature so as to replicate the results of the previous literature on local public goods as

literature by using the Herfindahl Index so that the results here are as comparable to previous studies as possible. Esteban and Ray (2011) derive a theoretically consistent measure of conflict based on indexes of polarization, fractionalization, and income inequality.

[3]The Herfindahl index is interpreted as the probability that two randomly drawn individuals from the unit of observation (in this case, the local authority) belong to two different social groups.

closely as possible. The data includes complete information on both the ordinary and extraordinary budget, at various levels of disaggregation. For the primary analysis, I focus on total expenditure as well as education and welfare spending. On the revenues side, I focus on total revenues, own revenues (and the sources of these own revenues), and targeted government participation.

The financial data were drawn from audits undertaken on the local authorities on an annual basis from 1985 to 1993. This nine-year panel allows for a comparison of pre-shock trends across localities, though for the preferred specification, I take a before and after approach, using data from 1989 and 1993. Summary statistics are shown in Table 2. The average locality spending per capita over the panel is 1,100 new shekels, which is about $550 (compared to $876 per capita in Alesina et al. (1999)).

In addition to the financial data, I incorporate information from two additional sources, the *Audit of Local Authorities, Physical Data* and the *Immigrant Absorption Survey, 1972*. The *Physical Data* audit includes information on population size, area of locality, municipality status, and other locality characteristics. The immigrant survey is a comprehensive three-year panel on immigrants who arrived from the Soviet Union in 1972 and 1973, providing information on settlement behavior as well as household demographic information.

Over the time period being considered, there are slightly more than 100 local authorities in the sample, ranging in size from just around 5,000 inhabitants to over 500,000. This provides ample variation in which to analyze the impact of local public goods as the size of local authorities changes. Furthermore, these localities represent about eighty-five percent of the population in 1989, with the rest of the country living in local councils (for which matched data was not available) or associations with fewer than 5,000 people in each area. These places tend to be more remote and agricultural-based.

7 Social Cleavage and Role of Local Government in Israel

7.1 Social Cleavage

It is necessary to identify social cleavages that are important within the culture to understand the impact of social diversity on fiscal redistribution. While certain dimensions of racial or ethnic categories may matter in one society, they may be completely unimportant in another. For the purposes of making general statements about the impact of diversity, one needs to identify the aspects of a culture that represent real division, especially those aspects which the society itself identifies as important. Religion, ethnicity, and class have constituted the most significant cleavages in Israeli society (Ben Rafael and Sharot (1991)).

Religious fragmentation in Israel has long been a significant source of social disruption, and rightly represents an area of investigation. The ethnic dimension of social fragmentation is less well understood

outside of Israel, but the society itself has identified ethnic divisions as an important source of conflict. Jewish ethnic identity is strongly tied to geographic branching. For centuries prior to the establishment of Israel as a nation-state, Jews migrated throughout the world and melded into different cultures. As part of this process, traditions and religious practices evolved in dialogue with foreign cultures. When Israel was founded as a nation in 1948, the waves of immigrants that followed brought back with them different traditions, languages, tastes, and liturgical interpretations.

The primary ethnic division is between the Ashkenazim and the Mizrahim. The Ashkenazim, which is literally translated as German but has come to more broadly encompass Jews from Western Europe, is considered the dominant ethnic group. The Ashkenazi were the driving political force during the founding of the state, and controlled the levers of power starting in 1948. Mizrahim is used to signify Jews who fall outside of this ethnic tradition. Mizrahim literally translates as Eastern, and it is used to describe Jews who emigrated from predominantly Muslim cultures. While the early ethnic contestations in Israel were neatly categorized with this dichotomy, there are additional competing ethnic divisions, including the Beta Israel (Ethiopian Jews), Soviet and Eastern European Jews, and Jews from North America. It is common to distinguish a Jew in Israel using a country of origin adjective - a Syrian Jew or an American Jew, for example. Geographic branching plays an important role in distinguishing ethnic divisions in Israel, and forms the basis of the ethnic fragmentation variable constructed here.

The salience of these ethnic divisions can be see throughout the history of Israel. Following the founding of the country, immigrants in the 1950s were evenly split between Ashkenazi and Mizrahim, but the Mizrahim tended to settle in peripheral and less productive areas. These settlement patterns have been attributed to the fact that the Ashkenazim controlled the levers of political power from the founding of the country (Smooha (1993)).

These early settlement patterns and frictions manifested themselves in social discord. In 1959, ethnic tensions spilled over in the form of the Wadi Salib Riots, which pitted the Mizrahim against the Ashkenazi over issues of economic resources, particularly affordable housing. The riots eventually resulted in more public spending on public housing and improved access to public goods for many Mizrahim.

Tensions boiled over again in the early 1970's. A small but vocal group of Mizrahim started the Black Panther movement, demanding increased political and economic rights for the Mizrahim and other disadvantaged groups in Israel. This Black Panther movement forged ties with the Black Panther movement in the United States, as well as anti-apartheid organizations in South Africa. It was the first Jewish movement to explicitly compare the plight of the Mizrahim to Arabs in Israel. In response to resulting riots, the government redirected resources towards impoverished areas, with increased public housing support again significant.

Political expression of social fragmentation was solidified in the 1977 election, as the Likud party won power for the first time in Israel's history. The electoral shift that swept the center-right party into power has been attributed to the changing voting patterns and increased political power of the Mizrahim. The election marked a shift in party affiliation, with explicit ethnic party identification emerging. The ethnic political party became important in the 1980's, particularly the Shas party, which was the first political party in Israel to explicitly identify with an ethnic group. In the 1988 Knesset elections, about eighty percent of Eastern Jews voted for Likud, Shas, or smaller parties on the right, while a similar proportion of Ashkenazi voted for Labor or parties on the left. (Smooha (1993))

While outsiders tend to think of religious fragmentation as the only social fracture in Israel, as the preceding has suggested, ethnic divisions within Israel are strong, with in-group identification well defined. These ethnic differences are reflected in political voting behaviors and social unrest. Ethnic diversity is an important fracture in Israeli society, and the large migration wave from the Soviet Union following its political collapse exacerbated these ethnic social cleavages.

7.2   Local government

Local government is Israel is made up of three different types of administrative units: Municipalities, Local Councils, and Regional Councils. Municipalities govern larger urban areas, usually with over 20,000 residents. Local Councils are made up of smaller urban areas, with around 5,000-20,000 residents. Regional Councils are smaller administrative units, usually governing agricultural communities and small settlements. The data covers all Municipalities and most Local Councils over 5,000 residents. The Local Authorities covered in the sample account for about eighty-five percent of the population in 1989.

The legal status of local governments and their relation with government ministries is based upon the Municipal Corporations Ordinance 5724-1964. Local Government is authorized to operate in six primary areas, including legislation, taxation, financial management, joint activities with other bodies, and more general powers. The Ministry of Foreign Affairs describes the scope of local government in Israel as "while not completely independent in any of these areas, a local authority is able to act on behalf of local interests within each of them according to the wishes of the elected representatives of the local constituency."[4]

Local Authorities serve a variety of functions. Functions include the developing and planning of local infrastructure, sanitation, parks, education, welfare, culture, and environmental protection. The Local Authorities are responsible for primary and secondary education, although some education is provided by local non-profits with aid from the local government. In the realm of welfare services, local government

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[4]The Ministry of Foreign Affairs, http://www.mfa.gov.il/MFA/Government/Branches+of+Government/Executive/Israeli+Democracy+-+How+does+it+work.htm#local

targets needy populations, such as the elderly and disabled.

Local government has three main sources of revenue for the ordinary budget: locally-generated income, government participation, and loans. While Local Authorities had traditionally had trouble financing and balancing their budgets, starting with reforms in 1981 greater financial accountability was demanded of the Local Authorities, and locally-generated income increased substantially. Locally-generated income comes primarily in the form of local taxes and payments for services.

Government participation takes the form of general grants and targeted grants. General grants are not tied to any specific expenditures, and can be used however the Local Authority sees fit. Targeted grants go to specific expenditures, such as welfare. The Ministry of Labor and Social Welfare sets certain standards, which are funded with ear-marks. However, the Local Authority is able to authorize higher welfare standards if local interests demand it, and these higher standards are funded out of locally generated income. The Ministry of Education sets standards on the curriculum, while the Local Authorities decide on the implementation of education, including the hiring of teachers, administration, and building of schools.

Finally, local governments can secure loans to finance investment projects, such as water treatment, sanitation, education and cultural facilities, as well as general development projects to support local interests. On occasion, loans are also given to balance budget shortfalls. After Local Authorities were reformed in 1981, increased powers were delegated to the Local Authorities, consistent with the view that local government is better able to meet the needs of the electorate in many social arenas. The Ministry of Foreign Affairs sums it up: "Studies show that local authorities generally succeed in fulfilling their duties and in completing projects which they initiate, even though many approvals are involved in the process. The influence of the local authority is relatively wide in many areas, even when the central government controls the purse strings or other factors."

8   Empirical Design and Implementation

The majority of work on diversity and provision of public goods depends on cross-section analysis, which is plagued by omitted variable bias. While studies try to include as many control variables as seem appropriate, these are limited by data and an awareness of channels through which provisions of public goods work. The omitted variables problem (OVP) will be a concern in any cross-sectional analysis on the impact of diversity.

While the OVP is well-known, providing a sufficient solution is far more challenging. Adding more control variables is unlikely to yield more convincing results. Where possible, incorporating a time dimension to the analysis might help to alleviate concerns over omitted variables that are invariant over time. While a reasonable approach, progress has been hampered by the fact that diversity changes little over time within a

country, and even when there are significant changes to diversity, the forces driving these changes are likely correlated with changes in local public goods.

In the Alesina et al. (1999) study of U.S. municipalities for example, the authors use a single cross-section in 1990 for the primary analysis. They attempt to incorporate a time-dimension, but are limited by the data. Using 1970 or 1980 census data would fail to capture enough significant changes in measures of diversity to make the analysis worthwhile (since diversity cannot be separately identified from other time-invariant factors). Instead, they incorporate data from 1960, but only for a limited number of areas and a more restricted measure of racial diversity (the census tracked fewer racial categories in 1960). Of course, while looking over a thirty year time horizon solves the problem of racial variation, there are no doubt significant unobserved forces changing over the same period, which confounds inferences about the impact of social diversity. These kinds of issues with data and variation plague most studies that incorporate a time dimension.

To push forward then requires, at a minimum, good data on local government revenues and expenditures as well as significant changes to diversity over time. Furthermore, since a fixed effects specification can only control for unobservables that are time-invariant, the best hope for providing a causal interpretation on the impact of diversity on local public goods requires a treatment policy. The approach employed in this paper relies on just such a natural experiment.

The collapse of the Soviet Union and emigration to Israel provides sufficient variation in diversity over time to make the analysis meaningful. In addition, the exogenous shock of migration from the collapse of the Soviet Union is uncorrelated with local conditions in Israel. The last component of identification exploits pre-existing settlement patterns from an earlier Soviet emigration episode to construct instruments for changes in social diversity.

8.1 Estimation

The standard approach in the literature would estimate the following:

$$public\,good_i = \beta_0 + \beta_1[Diversity_i] + X_i\beta_2 + \epsilon_i \tag{7}$$

where $public\,good_i$ is a measure of the provision of public goods in region i, $Diversity_i$ is a measure of diversity in region i, and X_i is a set of controls. The omitted variables problem arises if there are relevant variables not included in the set of controls, leading to biased estimates of β_1. If these omitted variables are time-invariant, then adding a time-dimension to the analysis can provide unbiased estimation of β_1. Suppose the provision of public goods depends on unobserved time-invariant factors and a common time-trend:

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$$public\,good_{it} = \beta_0 + \beta_1[Diversity_{it}] + X_{it}\beta_2 + z_i\gamma + \delta_t + \epsilon_{it} \tag{8}$$

In this case, taking differences yields the following estimating equation:

$$\Delta public\,good_{it} = \beta_1[\Delta Diversity_{it}] + \Delta X_{it}\beta_2 + \Delta\delta_t + \Delta\epsilon_{it} \tag{9}$$

which yields unbiased estimates of the impact of diversity on the provision of public goods under the assumption that unobserved factors are time-invariant. The traditional challenge with a difference-estimator is that diversity is not separately identifiable from other time-invariant factors, that is, the rank condition is not satisfied.

As is standard in empirical approaches that use a differences estimator, assuming that the parallel trends assumption is met, a simple difference estimation with no controls would be sufficient. However, the migration treatment under study alters not only the composition of diversity, but also the composition of the community along a number of other dimensions. I include control variables that have been identified as important by the cross-section literature, but with the added benefit that these controls are also experiencing significant variations from the migration shock. After isolating the relevant treatment variables, the identifying assumption is that the parallel trends assumption is valid in all other dimensions.

For baseline results, the entire nine year panel is used. When a differences-specification is used, this reduces the panel length to eight years. While estimates of diversity are unbiased under the rank and exogeneity assumptions, efficient inference requires additional assumptions. There are two polar assumptions one could make about serial correlation in error terms at this point. The fixed effects model (Equation (8)) requires that there is no serial correlation in the error terms within localities for efficient inference. This seems unlikely to be true. The differences estimator (Equation (9)) assumes error terms follow a random walk, the polar opposite assumption about the error terms compared to Equation (8) - extreme dependence in the error terms. This is also seems unlikely to be true.

To deal with this concern, and to avoid having to take a stand on the temporal structure of the error terms, I focus on a "before and after" approach. With $T > 2$, concerns about biased standard errors (Bertrand et al. (2004)) hampers inference. When the time period is two, the fixed effects and first-differences estimators are the same, since there is no serial correlation in the error terms by construction. For the preferred specification, I focus on before the shock (1989) and after the shock (1993). Limitations in access to data from which diversity measures are constructed precludes studying longer changes in diversity at present.

The main concern with either Equation (8) or Equation (9) in the present context is unobserved idiosyncratic behavior in a locality in response to the immigration wave. The way to see this is to consider the

following possibility: a mayor of a local authority that was previously hospitable to migrants observes the large influx of immigrants, and decides to put into place unobserved barriers to migration to that locality. This is a problem for identification because the locality had previously been hospitable to immigrants, but is no longer hospitable. If the preference for immigrants was unchanged, it would be wiped out by the fixed effect and would not impact the estimation of diversity. The possibility for these unobserved, time-varying locality effects suggests the need to instrument for changes in diversity. In terms of identification, the concern is that the error terms are correlated with changes in diversity, even after conditioning on locality fixed effects and control variables.

The settlement patterns from the 1970's emigration experience form the basis of the construction of the instruments. The central idea is that settlement patterns of Russians in the 1970's and 1990 are correlated through migration networks, but the settlement patterns of the 1970's are uncorrelated with any locality innovations in 1990. The settlement patterns may be driven by unobservables that are invariant over time, but these are accounted for with the locality fixed effects. Using 1970's settlement patterns rather than the actual 1990's settlement patterns, I construct a measure of predicted diversity, and I use the resulting predicted change in diversity to instrument for the actual change in diversity. I estimate the following specification:

$$\Delta public\,good_{it} = \beta_1[\Delta Diversity_{it}] + \Delta X_{it}\beta_2 + \Delta \delta_t + \Delta \epsilon_{it} \qquad (10)$$

and instrument for $\Delta Diversity_{it}$ with $\Delta Predicted\,Diversity_{it}$.

The instruments are constructed using the settlement patterns from the 1970's, and predicting the number of Soviet immigrants in each locality instead of the actual number of Soviet immigrants observed in each locality. Using the predicted number of Soviet immigrants in place of actual immigrants, I recalculate religious and ethnic fragmentation for each locality. For areas that received no Soviet immigrants in either the 1970's or 1990's, there is no difference between predicted and actual changes in diversity.[5]

One view of the experiment under consideration is a short-run response of diversity on public goods budgets via the political mechanism. This is a specific answer to untangling how public goods *expenditures (revenues)* respond to *diversity*, and the short-run analysis can be thought of as studying a more general case with limited mobility. A related, but separate, question of how diversity impacts local government would consider long-run adjustment mechanisms, particularly sorting. Tiebout (1956) argues that at the local level, it is labor mobility and sorting which could drive all of the adjustment in response to changes in preferences for public expenditures. In a world with zero or small fixed costs of mobility, the sorting

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[5]Since control variables could have similar worries, and as a robustness check, I also use the settlement patterns to predict changes in control variables as well. The results are unchanged using either construction of controls.

mechanism may be the appropriate one to consider. When transport costs are high, the level of expenditure is more likely to be the margin of adjustment. For the Israeli case, where linguistic and cultural barriers are significant, the assumptions of high mobility costs (and hence a focus on political adjustment rather than geographic adjustment) seems reasonable. In future work, I consider long-run adjustment mechanisms, including internal sorting and long-run political adjustment.

9 Results

9.1 Preliminary Results

As a first glance at the data, consider the trends in per capita spending by localities over the entire sample, from 1985 until 1993. One major worry is that pre-trends in Israel could be driving the results. There is good reason to think that the pre-trends are not influencing the results since the collapse of the Soviet Union was exogenous from the perspective of the local conditions in Israel, but it is possible that settlement patterns were influenced by diverging pre-trends.

To see that this is not the case, I split the sample into those localities that received significant migration and those that received limited migration. The first thing to notice in Figure 4 is that "high treatment" localities do in fact look different than "low treatment" localities.[6] This fits with a view that immigrants are not settling randomly. However, while there are level differences in per capita spending, it is equally important that there are no apparent differences in pre-trends between areas that received immigrants. This is not terribly surprising given the nature of the immigration shock, but it is reassuring nonetheless that the ultimate outcomes of interest are not being driven by trends that drive both migration patterns and future local government spending.

Settlement patterns of Soviet immigrants are not random, but rather exhibit certain patterns in the data. In Figure 5, the share of Soviet immigrants is plotted against the initial immigrant share (all immigrants) of the locality. It is important to note that there is a slight positive relationship between initial immigrant share and Soviet settlement patterns, which suggests that immigrants locate in places that already have significant levels of immigrants. There is also significant variation in Soviet settlement shares compared to initial immigrant shares, so that immigrant share by itself cannot explain Soviet settlement patterns.

Besides settling in areas with significant immigrant communities, Soviet immigrants tend to settle in larger areas. Figure 5 plots the share of Soviet settlement by initial population in 1989. It is apparent

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[6]Note that the blip in the expenditure data in 1991 is not the result of the immigration wave driving down per capita expenditures, but rather reflects changes in accounting practices. The Local Authorities Audit switched from a fiscal year to a calendar year, meaning there was only nine months worth of expenditure data in the 1991 audit.

from the figure that Soviet immigrants tend to settle in larger areas, but there is still significant variation in settlement patterns, even after controlling for initial population size.

While there are obvious patterns in settlement behavior for Soviet immigrants, there is less evidence of settlement patterns driven by initial fragmentation. In Figure 7, the share of Soviet immigrants is plotted against initial religious fragmentation. For low and medium levels of religious fragmentation, there is significant variation in the patterns of Soviet settlement. There does appear to be some bias in the settlement patterns, as the most religiously fragmented areas do not receive much Soviet immigration. Figure 8 tells a similar story for Soviet settlement and initial ethnic fragmentation. There is a positive relationship between initial ethnic fragmentation and Soviet settlement patterns, but there is also significant variation in settlement patterns such that initial ethnic fragmentation does not explain settlement patterns.

Having taken a glimpse at the raw data, let us turn to the baseline results using the entire panel. Focusing first on total spending per capita and religious fragmentation, columns (1) and (4) of Table 3 replicate the standard approach taken in the previous literature using pooled OLS. The coefficient on religious fragmentation is large, negative, and statistically significant. While the magnitude of the coefficient drops with the inclusion of controls, the general observation that religious fragmentation is negatively correlated with local government spending is confirmed. These results suggest that Israel is similar to other countries that have been studied in that a robust negative relationship is observed in the cross-section between social diversity and the provision of public goods.

Once we move to columns (2) and (5) of Table 3, however, we see that this result is not robust to changes in religious diversity over time. These columns include locality fixed effects, and once these time-invariant effects are included, the impact of religious diversity falls to 0. This result would not be surprising in other panel contexts if religious diversity was not changing much over time, because the zero coefficient could be rationalized as not independently identifiable. However, that observation is not valid in the Israeli context, which experienced significant changes in religious diversity over this time period. Finally, columns (3) and (6) interact religious diversity with a shock-indicator to separate out the pre and post-shock experiences. Column (6) suggests there was a different response to diversity after the Soviet migration wave, as the interaction term is positive and statistically significant. This result is explored further in the pre and post-shock specification.

Similar patterns emerge when education and welfare spending are considered (Tables 4 and 5 respectively). In both cases, columns (1) and (4) find the coefficients on religious diversity are large, negative, and statistically significant, consistent with previous findings. With only this information, one would conclude that religious diversity has a negative impact on the provision of public expenditures. Once again, however, columns (2) and (5) suggest this statement is too bold. For both welfare and education, the fixed effects

specification is statistically insignificant (and positive). Furthermore, for the welfare regressions, column (6) reports a positive and statistically significant coefficient on the interaction term between religious diversity and a post-shock indicator, suggesting once again that the local response to changes in diversity may behave differently before and after the shock.[7]

Having considered religious fragmentation, next consider the impact of ethnic diversity on the provision of public goods. Looking first at the size of local government, total per capita spending appears to respond negatively to ethnic fragmentation in the pooled OLS specification (Columns (1) and (4) of Table 6). As with religious fragmentation, one would conclude based on this analysis alone that ethnic diversity is an important determinant of the provision of public goods. Following the same basic patterns as before, columns (2) and (5) tell a very different story. The coefficient on ethnic diversity is positive, but statistically insignificant. Column (3) suggests that there is a differential response before and after the shock, although the inclusion of controls in column (6) finds no statistical difference in behavior.

Looking next at educational spending per capita and welfare spending per capita, a very similar story emerges (Tables 7 and 8, respectively). Once again, the pooled cross-sectional evidence would point to a large negative impact of diversity on the provision of public goods. This is consistent with the evidence presented for religious fragmentation. The inclusion of controls in column (4) reduces the magnitude slightly, but the negative and statistically significant coefficient remains. When locality fixed effects are included, the impact of ethnic fragmentation on education disappears (Table 7). The impact of ethnic fragmentation on welfare per capita spending is positive, but statistically insignificant (Table 8). The interaction of ethnic fragmentation and a shock indicator in columns (3) and (6) suggest that the impact of ethnic diversity before and after the shock are different, which will be explored further in the next section.

The two main points to takeaway from these baseline results are that first, Israel looks similar to other countries in terms of the impact of social diversity and the provision of public goods when the standard approach is utilized. The standard approach attempts to deal with OVP by including a battery of control variables. The inclusion of reasonable controls does not change the basic cross-sectional result that religious and ethnic diversity are important social fractures in Israeli society. The second main result is that the use of locality fixed effects during a time of mass migration reduces the importance of ethnic and religious diversity. The migration shock was exogenous to local conditions, and provides sufficient variation in social diversity to separately identify diversity from time-invariant factors. Under these conditions, there is no evidence that supports the view that ethnic or religious diversity negatively impacts the provision of local public goods. To explore this issue further, I turn to a pre- and post-shock analysis and attempt to address concerns over

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[7]Similar results hold for other measures of public goods (culture, sanitation, public property, and water) and are available upon request.

nonrandom settlement patterns of migrants.

9.2 Pre and Post-Shock Approach

While the panel evidence is suggestive, there are potentially confounding issues for inference. The primary worry is that there is persistence over time in the measures of diversity (especially pre-shock, where there was limited variation within a locality), and more generally, there is potentially serial correlation in the error terms. In the panel approach in the previous section, a robust variance matrix was employed, which is valid in the presence of any type of serial correlation or heteroskedasticity so long as the number of years in the panel, T, is small relative to the observational units, N (Wooldridge (2002)).

An alternative approach, which has been suggested by Bertrand et al. (2004), is to collapse the panel to two years, before and after the event under study. This has the benefit of eliminating serial correlation concerns in the data, without having to take a stand on estimators. Since there is a clear shock experience in Israel, I focus on differences between 1989 and 1993. This has an additional benefit in the current context since both years were election years for Local Authorities. This reduces the possibility of picking up political economy effects unrelated to diversity (e.g., spending run-ups in election years, spending declines after elections), and provides a cleaner test of the political channel mechanism underlying the theory. Since there are municipal elections in both years, local politicians should be responding to the new social conditions, and the observed expenditure changes should reflect these underlying political needs. In other countries, elections so close in time to the migrant experience may not pick up voting patterns of immigrants (instead, capturing the political exclusion of migrants), but these concerns are mitigated in Israel given the unique characteristics of the state (since new immigrants are immediately granted political rights and access).

In addition to collapsing the panel to two years, the issue of migrant settlement needs to be addressed. While the flow of migrants is exogenous from the perspective of Israel, the actual settlement patterns within Israel are not exogenous. Some of the forces driving landing patterns can be accounted for, but there is still the possibility that landing patterns are being driven by unobserved forces also correlated with public expenditure decisions, which would bias the estimation. The IV strategy discussed previously is now implemented.

The impact on total expenditures per capita can be seen in the first panel of Table 9. Column (1) repeats the pooled cross-sectional estimation, but now only for years 1989 and 1993. Once again, the coefficient on religious fragmentation is negative and statistically significant. The inclusion of controls reduces the impact by about half (not reported), but it is still negative and statistically significant. Once again, however, the conclusion that diversity negatively impacts the provision of public goods is premature. Turning to column

(2), with the inclusion of locality fixed effects, the coefficient drops by about half relative to columns (1), and the coefficient is no longer statistically different from zero. Column (3) instruments for diversity using predicted diversity. This lowers the estimated coefficient still further, suggesting there was some sorting based on unobservables, but it appears not to be a major contributor to the estimated effect.

The exercise is repeated for educational spending (middle panel, Table 9) and welfare spending (last panel, Table 9), both on a per capita basis. For educational spending, column (4) show a strong negative coefficient on religious diversity, which is robust to the inclusions of controls. The inclusion of locality fixed effects reduces the magnitude of the coefficient and the statistical significance. The IV estimates in column (6) find the impact of religious diversity to be essentially zero.

Welfare spending per capita (last panel, Table 9) has slightly different patterns. The pooled cross-section is again negative, but the inclusion of controls (column (7)) reduces the significance of religious diversity (although the point estimate is still very large). However, the inclusion of fixed effects results in a large and statistically significant negative effect. The IV specification confirms that the point estimate is quite large and statistically significant. There is some evidence then that cross-sectional evidence can't be considered "suggestive" in general, but welfare spending per capita in particular does respond negatively to increased religious fragmentation.

Ethnic fragmentation analysis reveals similar patterns. Focusing first on total spending per capita (Table 10), the standard approach would once again conclude that ethnic fragmentation negatively impacts the provision of public goods. The inclusion of controls in column (1) reduces the magnitude of the coefficient slightly, but the effect is still large, negative, and statistically significant. The inclusion of locality fixed effects reduces the size of the effect, and in the case of column (2), eliminates the significance. The estimated impact using the IV specification in column (3) is essentially zero. There is some evidence of sorting on unobservable characteristics since the estimated coefficient falls dramatically between columns (2) and (3). Based on the most preferred specification, the impact of ethnic diversity on total expenditures per capita is zero.

The evidence on education spending and ethnic fragmentation is less clear-cut. As can be seen in the second panel in Table 10, the coefficient on ethnic fragmentation is negative and statistically significant without controls (not reported), and negative but not significant in column (4), once controls are included. The inclusion of fixed effects in column (5) and then instrumenting in column (6) does not change the results. The estimated coefficient is negative, but insignificant as the standard errors are large.

The third panel of Table 10 shows the results for welfare spending per capita. As with previous public goods, the coefficient on ethnic fragmentation is negative and statistically significant, and is also robust to the addition of controls. Including fixed effects in columns (8) lowers the estimated coefficient on eth-

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nic fragmentation to zero. When ethnic fragmentation is instrumented for, the coefficient is positive but insignificant. The standard errors are quite large, but there is no evidence that increased ethnic diversity results in lower welfare spending per capita.

Taking stock of the entire body of evidence, when looking across localities in a moment in time, it appears that religious and ethnic fragmentation matters significantly for public goods. Qualitatively similar negative relationships have been found in many different countries, and across cities within countries. The Israeli experience is similar to these earlier studies. What distinguishes the Israeli experience is that we need not just rely on controls to deal with the omitted variables problem. Looking before and after the collapse of the Soviet Union and the resulting waves of immigrants to Israel, I find only very limited evidence that religious fragmentation leads to lower provision of public goods, and no evidence that ethnic fragmentation leads to lower expenditures on public goods. With the exception of welfare spending and religious fragmentation, the best estimates of the impact of ethnic and religious diversity on public expenditures is zero. Welfare spending does seem to respond negatively to increased religious diversity, and is larger than the cross-sectional estimation. Overall, what seems to matter most for explaining the provision of public goods is institutional factors (captured by time-invariant fixed effects), and an older, more simple story - the number of people. Locality population is consistently significant in the IV specifications. This suggests that the number, rather than the type, of people is what matters for collective action and the provision of public goods.

9.3   Revenues

The expenditure analysis might be misleading if the financing is coming from national sources rather than local sources. While the decisions to spend locally reflect local preferences, some government financing can be specifically targeted to meet national needs, and hence the inference on local expenditures may be conflated with national aims that are independent or even contrary to local interests.

To study this further, I turn next to the revenue side of the budget. Revenue in the ordinary budget is made up of three broad components - own revenue, government participation, and transferred income. As transferred income makes up a small component, I focus on government participation and local raised revenues. There is significant variation across localities in the contribution of locally raised revenue as a share of total revenues, and there is significant variation in the sources of local revenue from taxes and other sources (including fees for service, licenses, etc.).

Using the same analytic framework as with expenditures, Table 11 reports the impact of religious fragmentation on total revenues, own revenues, and targeted government grants. In the left panel of the table, the cross-sectional evidence suggests that religious fragmentation has a negative impact of total revenues

per capita, with a similar magnitude as was found with expenditures per capita (column 4). The inclusion of locality fixed effects and instrumenting for changes in diversity lowers the point estimate by about half, which is not statistically significant (but also not statistically different from the pooled estimate). These patterns are consistent with total expenditures analyzed above.

When total revenues is broken up into own revenues and targeted grants, some interesting patterns emerge. The pooled estimates for the impact of religious fragmentation on own revenues is negative and statistically significant, and the magnitude nearly doubles when fixed effects and instruments are used. Targeted grants have a negative point estimate in the pooled analysis, but become positive and statistically significant once instrumented for. This evidence suggests that in the case of religious fragmentation, the total impact on revenues per capita is masking two opposing forces. At the local level, own revenue responds negatively to increased religious fragmentation, but this is counter-balanced by targeted grants that respond positively to increased religious diversity.

The role of targeted grants raises an issue as to whether this is a mechanism that defuses or exacerbates social fragmentation. On the one hand, targeted governmental transfers could reflect a governmental response to minimize the negative local impact on own revenues, thereby neutralizing the impact of local revenue decisions. On the other hand, targeted transfers could exacerbate the impact of social diversity by targeting specific populations at the expense of other social groups. The appearance of a trade-off at the aggregate level could be masking significant changes at more disaggregated levels.

Digging deeper into the mechanisms through which own revenue is raised, I find that increased religious fragmentation has different impacts on sources of revenue. Table 13 breaks up own revenues per capita into revenues raised through taxes and those raised through other mechanisms such as licenses and fees for services provided. Analysis for total own revenue was negative in the cross-section and roughly twice as large using instruments and fixed effects. At disaggregated levels, the pooled estimate for local taxes and local fees are similar in magnitude to each other, and statistically significant.

When looking at changes within localities over time, however, religious fragmentation has a strong negative effect on other sources of income per capita. It is this channel of raising revenue that seems to be most affected from the changes in religious fragmentation, rather than local tax revenues. The point estimate for local tax revenues is slightly smaller than the pooled estimate, although not statistically distinguishable. The suggestion here is that in response to an increase in religious diversity, local taxes don't change directly, but that possibly less observable ways of de-funding local government are utilized instead.

Turning next to ethnic fragmentation, Table 12 shows that the pooled estimate for the impact of total revenues is negative and statistically significant, but once locality fixed effects are accounted for and changes in diversity are instrumented, the impact of ethnic fragmentation is essentially zero. The estimated

magnitudes and patterns are very similar to those found in the expenditures analysis.

Breaking this down further, for locally raised revenue, the pooled estimated of ethnic fragmentation is positive and statistically significant. The inclusion of locality fixed effects reduces the estimated effect, but once the change in diversity is instrumented for the estimated coefficient is similar in magnitude (though not statistically distinguishable from the pooled estimate). Targeted grants respond negatively to increased ethnic fragmentation, although the estimate is not significant in the cross-section once controls are included. The point estimate using locality fixed effects and instruments is positive, and statistically distinct from the pooled estimate.

The disaggregated patterns suggest that ethnic fragmentation has a positive impact on own revenues, but this effect is hidden at the aggregate level because of offsetting government participation. For ethnic fragmentation, targeted government grants also respond positively to ethnic fragmentation, contrary to the evidence in the pooled cross section. It appears that general government grants contribute to the zero estimated effect of ethnic fragmentation on total revenues.

Exploring the impact of ethnic fragmentation on own revenues further, I look at local tax revenues and other forms of local revenue separately in Table 14. The point estimate for the impact of ethnic fragmentation on Other Income is essentially zero in column (3). Compare this to the estimated impact of ethnic fragmentation on local tax revenues, which is positive and significant (and of similar magnitude) in both the pooled and instrumented estimates.

Contrary to religious fragmentation, local taxes are the mechanism of adjustment in response to changes in ethnic fragmentation, and there is a positive impact on increased ethnic fragmentation leading to higher local tax revenues per capita. Other sources of local income don't appear to respond to increases in ethnic fragmentation, although they respond dramatically to changes in religious fragmentation.

The results presented for local government revenues are similar at the aggregate level to local government expenditures studied in the previous section. These aggregate similarities give way to interesting differences in the source of income. For religious fragmentation, the lack of an effect at the aggregate level is masking a strong negative response of local revenue to increased in religious fragmentation, with an increase in targeted government revenue (which may or may not be exacerbating social fragmentation depending on the role of targeted grants). The channel of adjustment for own revenue is coming from fees and licenses rather than taxes. For ethnic fragmentation, similar aggregate revenue patterns obscure the fact that increased ethnic fragmentation actually leads to an increase in local revenue collection. Government grants offset this positive local effect on own revenue. Contrary to religious fragmentation, it is local tax revenue that plays an integral role in explaining the response of local revenues to changes in ethnic fragmentation. The results suggest that social fragmentation does impact local government behavior, but the mechanisms are far more nuanced than

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the standard theory suggests.

10   Conclusions

There has been extensive discussion of the role that diversity plays in facilitating collective action, guided by the empirical observation that diversity and public goods provision are negatively correlated. In this paper, I argue that there are good reasons to be wary of a causal interpretation of higher diversity leading to lower public goods provision. While observed negative correlations are robust in the sense that they have been replicated in a variety of settings, the strategy to identify causality has been hampered by poor data, small samples, and limited experimental validity. This paper attempts to address this pressing issue by exploring a natural experiment and utilizing unique instrumental variables.

Consistent with previous literature, I find a large, negative and statistically significant effect of religious and ethnic fragmentation on public goods expenditure. Based on this observation, one would conclude, as have previous studies, that social diversity hampers the fiscal redistributive policy at the local level. However, in the current context, progress can be made by exploiting a large migration wave and the resulting changes in social diversity. The collapse of the Soviet Union in 1989 ushered in a period of significant migration to Israel, with Soviet Jews emigrating by the hundreds of thousands. Over a two-year period, the total population of Israel increased by close to seven percent. I utilize the size, swiftness, and unexpected nature of this migration shock to study the response of public goods expenditures at the level of the local government. I find limited evidence that social fragmentation negatively impacts public goods expenditure. For religious diversity, neither total expenditure nor education expenditure responds negatively to increased fragmentation. I do find evidence that religious fragmentation negatively impacts welfare spending. For ethnic fragmentation, I find no evidence to support the view that diversity negatively impacts public goods expenditure. Instrumenting for changes in diversity using predicted changes in diversity based on 1970's settlement patterns confirms these results.

When I consider revenues of local government, interesting patterns emerge. Total revenues have similar patterns as total expenditures, with strong cross-sectional negative effects that disappear when estimated using changes over time and instrumenting for changes in diversity. When I break revenues up into locally raised revenues and targeted government transfers, I find that the estimated aggregate impact is made up of conflicting disaggregated effects. For religious fragmentation, locally raised revenue responds negatively while government transfers respond positively. These two forces cancel each other out at the aggregate level. When sources of locally raised revenues are analyzed further, it is sources other than taxes that are most strongly negatively affected by increased religious diversity. For ethnic fragmentation, locally raised revenues

respond positively to ethnic fragmentation, and this positive effect is driven by the positive impact of ethnic fragmentation on local tax revenue. I find no effect of ethnic fragmentation on other sources of locally raised revenues.

Besides the migration shock, Israel is an excellent setting for studying the impact of diversity on public goods because its history as a nation of immigrants has led it to collect extensive information on migration and the countries of origin of its citizens. This information is useful for constructing disaggregated geographic measures of ethnic and religious fragmentation. Under its right of return policy, Israel immediately grants full voting rights to immigrants, giving them a political channel through which to operate - an important mechanism that may be lacking in other migration contexts. Finally, previous migration episodes generated migrant networks that help mitigate concerns that settlement patterns were driven by unobserved factors which also drove public expenditure decisions.

Differences between the cross-sectional and instrumented approaches have a number of possible explanations. The first possibility is that the cross-sectional approach is not the right way to measure the impact of diversity on public goods provision since there are local characteristics that matter for both social fragmentation of a locality and the size of the local government. I find some evidence that suggests these local time-invariant factors are important for explaining spatial variation in local government spending and diversity. Furthermore, the fact that immigrants had a political outlet helps to explain the inability to find significant effects leading from diversity to the provision of public goods. As has been suggested by Easterly (2001) in cross-country analysis, access to good institutions - in this case comprehensive voting rights for immigrants in Israel - could help to mitigate any negative effects from increased diversity. Unlike other countries, eligible immigrants have minimal barriers to political participation, and this political access may help to explain observed spending behavior.

The results on the revenues side of the ledger suggest that local preferences may be offset by national government behavior. For revenues, the failure to find aggregate effects for total revenue masks the reality that local and national sources of revenue offset each other. For religious fragmentation, targeted grants increased with religious diversity while local revenues declined. While these effects statistically offset each other at the aggregate level, it may be the case that targeted grants actually exacerbate social tension if the funding is targeted towards particular groups at the expense of others. Furthermore, locally sourced revenues respond differently to types of social fragmentation. Religious fragmentation has a significant impact on sources of revenue other than taxes including licenses and fees for service, while increased ethnic fragmentation works through local taxes. This suggests that the revenue generating mechanism, not just the level of revenue collected, may respond to social fragmentation.

In future work, long-run adjustments will be studied more carefully. Here, I focused on the short-run,

where mobility costs are high and political channels are the mechanism by which adjustment takes place. In the longer run, internal sorting may play an important role for adjustment if households move to areas that better reflect their political preferences (Tiebout Sorting). Furthermore, fiscal adjustment in the long-run may differ systematically from the short-run fiscal adjustment studied here. Extending the dataset to include long differences and collecting data on internal migration patterns will help to address both of these issues.

The results here suggest that diversity may not be the hindrance to collective action as is often assumed. In particular, for public expenditure, the evidence suggests an older and simpler story of collective action failure in which collective action is harder to maintain as the number of individuals increases, while the type of individuals plays an insignificant role. For public revenue, diversity interacts with both national and local revenue generating decisions, which have offsetting effects. In addition, the mechanism used to raise local revenue, not just the level of revenue, responds to social diversity. While the results focus on the short-run adjustment in public goods expenditures and revenues, there is a longer-run adjustment of internal sorting that may help to reconcile the observed negative correlation with the results presented here. Future work should consider these longer term adjustments in experimentally valid environments like the one discussed here. Finally, to evaluate the robustness of the results, the methodology employed here could be applied to similar migration experiences.

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Figures and Tables
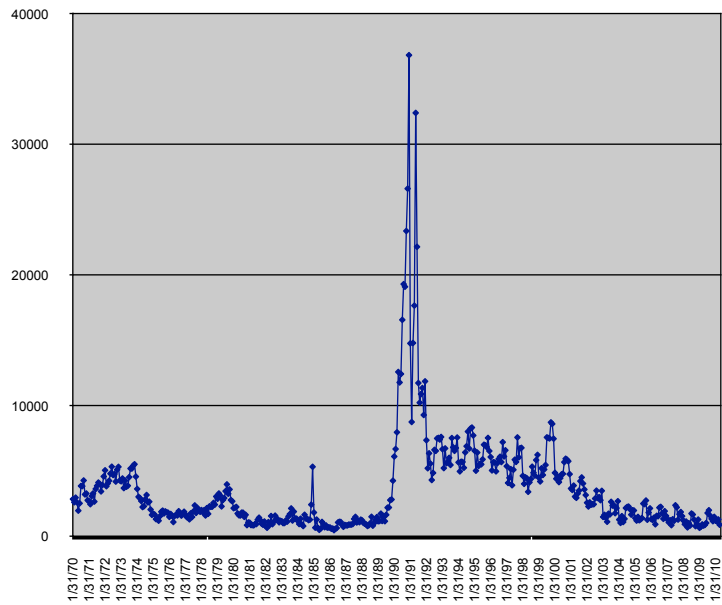
Figure 1: Israeli Immigration by Month, 1970-2010
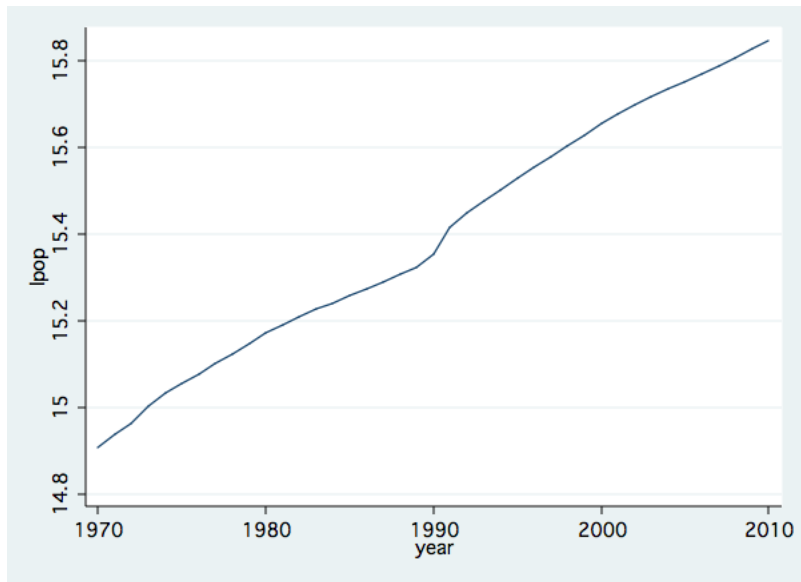
Figure 2: Israeli Population Growth, 1970-2010

Voter Participation
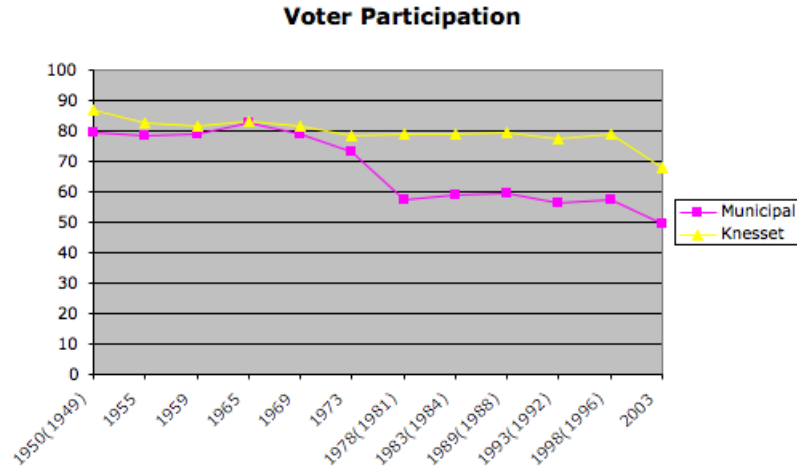
Figure 3: Voter Participation, Municipal and Knesset Elections, 1949-2003

Note: Voter participation in local and national elections for selected elections. After 1973, when local and national elections were decoupled, the nearest national election is used as a point of comparison. National election year in brackets.
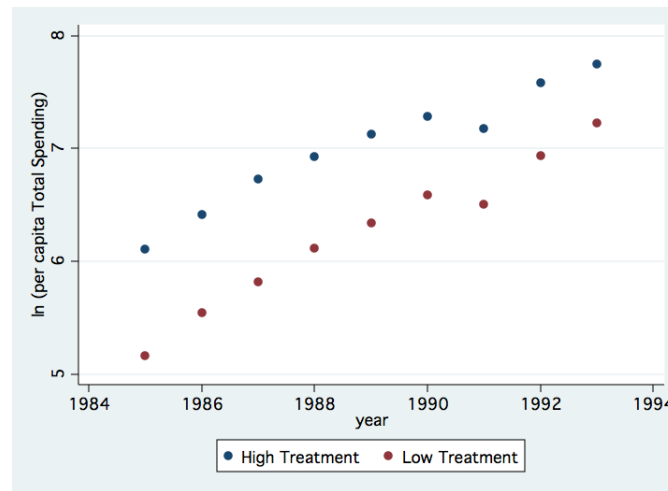
Figure 4: Total per capita spending in High and Low Migration Intensity Localities

Note: Localities were split into two samples based on the number of immigrants received from 1990 until 1993. Total spending per capita was then calculated for these low and high treatment localities for each year in the sample, 1985-1993.
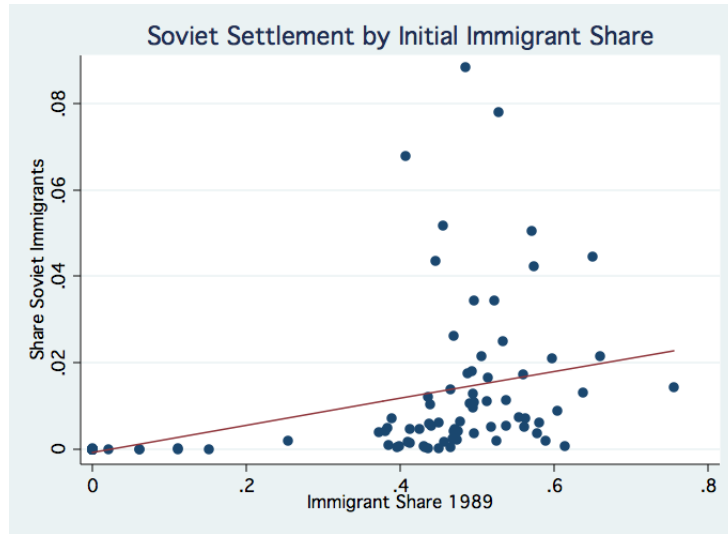
Figure 5: Soviet Settlement by Initial Immigrant Share
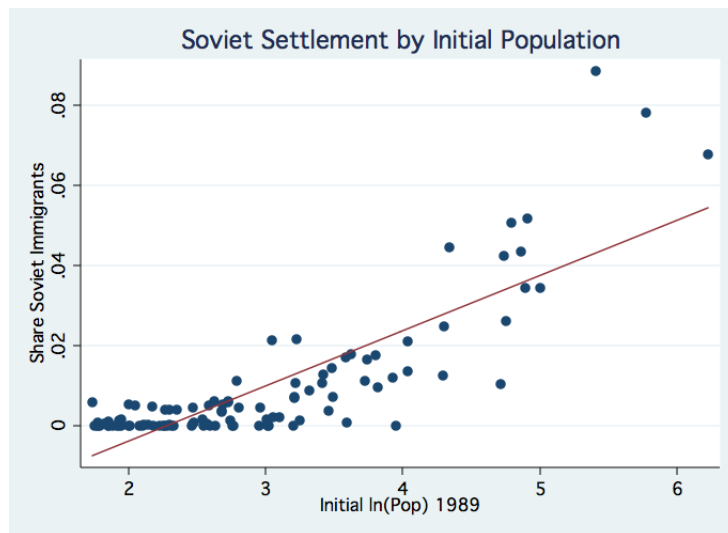
Figure 6: Soviet Settlement by Initial Population
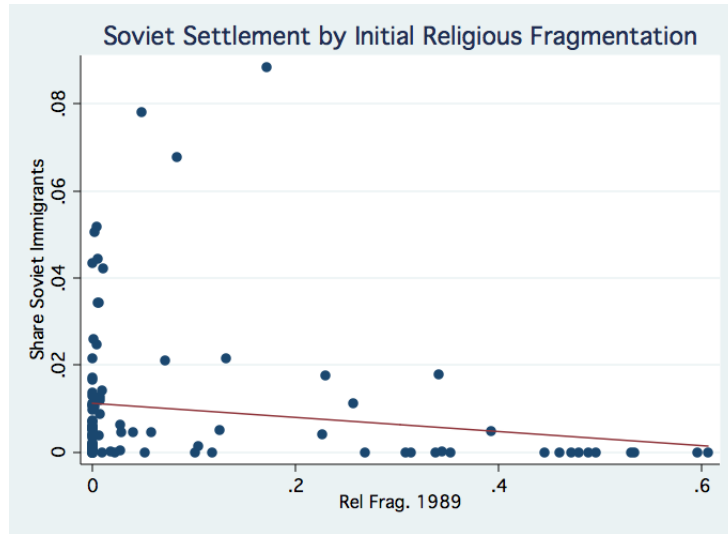
Figure 7: Soviet Settlement by Initial Religious Fragmentation
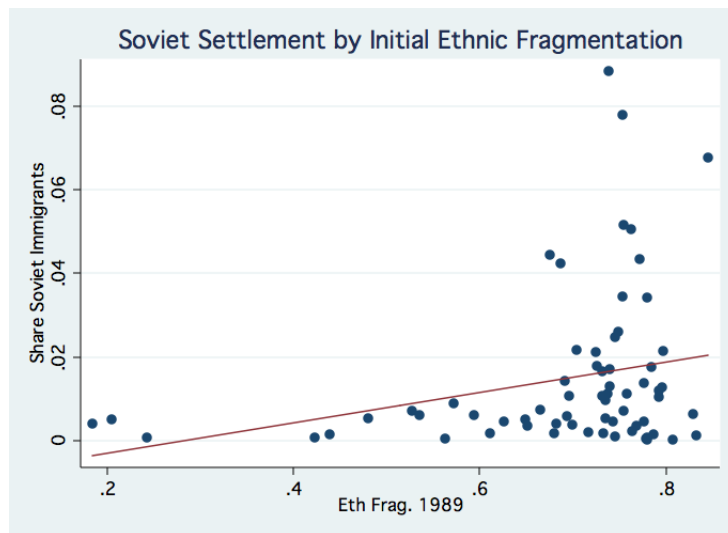
Figure 8: Soviet Settlement by Initial Ethnic Fragmentation

	Mean	Std Dev	Min	Max	N
Immigrant Share	0.353	0.250	0.000	0.759	930
Religion Fragmentation	0.098	0.173	0.000	0.730	930
Ethnic Fragmentation	0.693	0.117	0.146	0.848	594
Share Under 17	0.381	0.080	0.000	0.656	930
Share Over 65	0.105	0.063	0.000	0.368	930
Share Post-Secondary Education	0.175	0.115	0.000	0.679	930
Skilled Occupation Ratio	0.310	0.134	0.000	0.823	930

Table 1: Summary Statistics, Demographic

Expenditures	N	Mean	Std Dev	Min	Max
Total per capita	953	1103.201	728.281	71.874	4787.941
Education Share	953	0.308	0.093	0.110	0.653
Welfare Share	952	0.090	0.050	0.000	0.244
Culture Share	949	0.061	0.031	0.002	0.182
Sanitation Share	953	0.090	0.033	0.018	0.228
Public Property Share	920	0.006	0.012	0.000	0.123
Water Share	951	0.081	0.033	0.000	0.229

Table 2: Summary Statistics, Expenditures

ln (Per Capita Total Spending)	(1)	(2)	(3)	(4)	(5)	(6)
Religious Fragmentation	-0.848***	-0.0338	-0.216*	-0.293***	-0.0213	-0.175
	(0.0892)	(0.125)	(0.128)	(0.0840)	(0.122)	(0.126)
Rel. Frag X Post Shock			0.303***			0.258***
			(0.0609)			(0.0599)
Under 17 Share				-1.147***	-0.238	-0.185
				(0.315)	(0.146)	(0.145)
Over 65 Share				2.012***	-0.406*	-0.320
				(0.420)	(0.224)	(0.227)
Post-Secondary Share				-0.708***	-0.514***	-0.490***
				(0.220)	(0.148)	(0.151)
Skilled Industry Share				-1.199***	-0.0511	-0.0522
				(0.192)	(0.108)	(0.106)
ln (Population)				-0.0314**	-0.556***	-0.532***
				(0.0159)	(0.125)	(0.128)
Observations	929	929	929	929	929	929
R-squared	0.684	0.978	0.979	0.787	0.980	0.980
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Locality FE	No	Yes	Yes	No	Yes	Yes

Table 3: Total Spending Per Capita, Religious Fragmentation

Note: Robust Standard Errors in Brackets. * indicates significant at 10%; ** significant at 5%; *** significant at 1%. Regressions were weighted by Labor Force Survey (LFS) observations. The interaction term includes an indicator for all shock years, 1990-1993.

ln (Per Capita Education Spending)	(1)	(2)	(3)	(4)	(5)	(6)
Religious Fragmentation	-1.068***	0.0175	-0.0344	-0.784***	0.0222	-0.00738
	(0.101)	(0.107)	(0.108)	(0.0989)	(0.106)	(0.106)
Rel. Frag X Post Shock			0.0865			0.0495
			(0.0693)			(0.0695)
Under 17 Share				-1.280***	-0.120	-0.110
				(0.321)	(0.162)	(0.163)
Over 65 Share				1.115**	-0.189	-0.173
				(0.518)	(0.240)	(0.245)
Post-Secondary Share				-0.714***	-0.198	-0.194
				(0.229)	(0.191)	(0.192)
Skilled Industry Share				-0.708***	-0.0762	-0.0764
				(0.185)	(0.105)	(0.105)
ln (Population)				-0.0649***	-0.588***	-0.583***
				(0.0192)	(0.133)	(0.134)
Observations	929	929	929	929	929	929
R-squared	0.739	0.976	0.977	0.786	0.978	0.978
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Locality FE	No	Yes	Yes	No	Yes	Yes

Table 4: Education Spending Per Capita, Religious Fragmentation

Note: Robust Standard Errors in Brackets. * indicates significant at 10%; ** significant at 5%; *** significant at 1%. Regressions were weighted by Labor Force Survey (LFS) observations. The interaction term includes an indicator for all shock years, 1990-1993.

ln (Per Capita Welfare Spending)	(1)	(2)	(3)	(4)	(5)	(6)
Religious Fragmentation	-1.406***	0.197	-0.284	-0.682***	0.244	-0.196
	(0.197)	(0.330)	(0.332)	(0.200)	(0.328)	(0.336)
Rel. Frag X Post Shock			0.750***			0.691***
			(0.179)			(0.185)
Under 17 Share				-1.961***	-0.301	-0.160
				(0.663)	(0.427)	(0.426)
Over 65 Share				2.163***	-0.484	-0.261
				(0.565)	(0.480)	(0.485)
Post-Secondary Share				-0.284	-1.143***	-1.083***
				(0.352)	(0.302)	(0.309)
Skilled Industry Share				-0.884*	0.0329	0.0217
				(0.477)	(0.349)	(0.342)
ln (Population)				0.0227	-0.665***	-0.600***
				(0.0179)	(0.178)	(0.189)
Observations	916	916	916	916	916	916
R-squared	0.445	0.923	0.925	0.543	0.925	0.927
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Locality FE	No	Yes	Yes	No	Yes	Yes

Table 5: Welfare Spending Per Capita, Religious Fragmentation

Note: Robust Standard Errors in Brackets. * indicates significant at 10%; ** significant at 5%; *** significant at 1%. Regressions were weighted by Labor Force Survey (LFS) observations. The interaction term includes an indicator for all shock years, 1990-1993.

ln (Per Capita Total Spending)	(1)	(2)	(3)	(4)	(5)	(6)
Ethnic Fragmentation	-1.779***	0.310	0.343	-1.382***	0.232	0.285
	(0.260)	(0.379)	(0.387)	(0.334)	(0.413)	(0.413)
Eth. Frag X Post Shock			-0.243			-0.466*
			(0.246)			(0.241)
Under 17 Share				1.794***	0.426	0.448*
				(0.416)	(0.261)	(0.264)
Over 65 Share				2.634***	0.0280	-0.154
				(0.478)	(0.368)	(0.362)
Post-Secondary Share				-0.421	-0.506**	-0.595**
				(0.264)	(0.236)	(0.256)
Skilled Industry Share				0.243	0.0289	-0.0572
				(0.359)	(0.207)	(0.206)
Immigrant Share				0.501*	0.00320	0.139
				(0.268)	(0.174)	(0.198)
ln (Population)				0.0112	-0.931***	-0.991***
				(0.0183)	(0.139)	(0.141)
Observations	593	593	593	593	593	593
R-squared	0.796	0.970	0.970	0.821	0.974	0.975
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Locality FE	No	Yes	Yes	No	Yes	Yes

Table 6: Total Spending Per Capita, Ethnic Fragmentation

Note: Robust Standard Errors in Brackets. * indicates significant at 10%; ** significant at 5%; *** significant at 1%. Regressions were weighted by Labor Force Survey (LFS) observations. The interaction term includes an indicator for all shock years, 1990-1993. The sample includes 66 Local Authorities that are predominantly Jewish (non-Jewish population less than 5%).

ln (Per Capita Education Spending)	(1)	(2)	(3)	(4)	(5)	(6)
Ethnic Fragmentation	-1.550***	-0.0316	-0.132	-1.333***	-0.0450	-0.121
	(0.263)	(0.161)	(0.148)	(0.191)	(0.145)	(0.143)
Eth. Frag X Post Shock			0.760***			0.657***
			(0.135)			(0.129)
Under 17 Share				-0.151	0.174	0.142
				(0.436)	(0.215)	(0.210)
Over 65 Share				1.421**	-0.273	-0.0161
				(0.595)	(0.313)	(0.294)
Post-Secondary Share				-1.102***	-0.151	-0.0260
				(0.280)	(0.227)	(0.209)
Skilled Industry Share				-0.997***	-0.153	-0.0313
				(0.343)	(0.167)	(0.165)
Immigrant Share				-0.554**	0.302	0.111
				(0.268)	(0.253)	(0.201)
ln (Population)				-0.0253	-0.610***	-0.525***
				(0.0216)	(0.143)	(0.149)
Observations	593	593	593	593	593	593
R-squared	0.777	0.979	0.981	0.808	0.981	0.982
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Locality FE	No	Yes	Yes	No	Yes	Yes

Table 7: Education Spending Per Capita, Ethnic Fragmentation

Note: Robust Standard Errors in Brackets. * indicates significant at 10%; ** significant at 5%; *** significant at 1%. Regressions were weighted by Labor Force Survey (LFS) observations. The interaction term includes an indicator for all shock years, 1990-1993. The sample includes 66 Local Authorities that are predominantly Jewish (non-Jewish population less than 5%).

ln (Per Capita Welfare Spending)	(1)	(2)	(3)	(4)	(5)	(6)
Ethnic Fragmentation	-1.779***	0.310	0.343	-1.382***	0.232	0.285
	(0.260)	(0.379)	(0.387)	(0.334)	(0.413)	(0.413)
Eth. Frag X Post Shock			-0.243			-0.466*
			(0.246)			(0.241)
Under 17 Share				1.794***	0.426	0.448*
				(0.416)	(0.261)	(0.264)
Over 65 Share				2.634***	0.0280	-0.154
				(0.478)	(0.368)	(0.362)
Post-Secondary Share				-0.421	-0.506**	-0.595**
				(0.264)	(0.236)	(0.256)
Skilled Industry Share				0.243	0.0289	-0.0572
				(0.359)	(0.207)	(0.206)
Immigrant Share				0.501*	0.00320	0.139
				(0.268)	(0.174)	(0.198)
ln (Population)				0.0112	-0.931***	-0.991***
				(0.0183)	(0.139)	(0.141)
Observations	593	593	593	593	593	593
R-squared	0.796	0.970	0.970	0.821	0.974	0.975
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Locality FE	No	Yes	Yes	No	Yes	Yes

Table 8: Welfare Spending Per Capita, Ethnic Fragmentation

Note: Robust Standard Errors in Brackets. * indicates significant at 10%; ** significant at 5%; *** significant at 1%. Regressions were weighted by Labor Force Survey (LFS) observations. The interaction term includes an indicator for all shock years, 1990-1993. The sample includes 66 Local Authorities that are predominantly Jewish (non-Jewish population less than 5%).

Table 9: Expenditures per capita (Religious Fragmentation)

	ln (Per Capita Total Spending)			ln (Per Capita Education Spending)			ln (Per Capita Welfare Spending)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Religious Fragmentation	-0.410**	-0.242	-0.225	-0.548***	-0.123	-0.0818	-0.910	-1.807*	-1.826**
	(0.170)	(0.255)	(0.229)	(0.184)	(0.205)	(0.237)	(0.566)	(1.005)	(0.917)
Under 17 Share	-1.975***	-0.114	-0.180	-1.305**	-0.197	-0.141	-4.391***	-0.0164	-0.381
	(0.481)	(0.376)	(0.326)	(0.554)	(0.337)	(0.337)	(1.264)	(1.747)	(1.364)
Over 65 Share	0.225	-0.790	-0.652	-0.604	-0.436	-0.308	1.002	-2.532	-2.391
	(0.565)	(0.481)	(0.499)	(0.590)	(0.588)	(0.516)	(1.363)	(2.802)	(2.050)
Post-Secondary Share	0.475	-0.173	-0.196	0.686**	-0.0784	-0.289	0.280	-2.495*	-2.557*
	(0.322)	(0.341)	(0.357)	(0.334)	(0.418)	(0.369)	(0.694)	(1.488)	(1.475)
Skilled Industry Share	-0.613**	0.254	0.149	-0.186	-0.124	-0.244	-1.279	0.212	-0.109
	(0.307)	(0.257)	(0.212)	(0.295)	(0.235)	(0.219)	(0.850)	(1.168)	(0.843)
ln (Population)	-0.0570**	-1.279***	-1.272***	-0.0668**	-0.989***	-0.966***	0.120**	-1.758**	-1.743**
	(0.0256)	(0.164)	(0.201)	(0.0289)	(0.153)	(0.208)	(0.0571)	(0.677)	(0.798)
Observations	204	204	204	204	204	204	202	202	202
R-squared	0.607	0.936	0.935	0.545	0.924	0.924	0.425	0.656	0.655
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Locality FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
IVs	No	No	Yes	No	No	Yes	No	No	Yes

Note: Robust Standard Errors in Brackets. * indicates significant at 10%; ** significant at 5%; *** significant at 1%. Regressions were weighted by Labor Force Survey (LFS) observations. The sample includes data from 1989 and 1993. The instruments used in columns (3), (6), and (9) are based on predicted settlement patterns, as described in the paper.

Table 10: Expenditures per capita (Ethnic Fragmentation)

	ln (Per Capita Total Spending)			ln (Per Capita Education Spending)			ln (Per Capita Welfare Spending)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Ethnic Fragmentation	-0.678***	-0.177	-0.0331	-0.430	-0.255	-0.357	-0.959*	0.0452	0.443
	(0.202)	(0.183)	(0.213)	(0.267)	(0.220)	(0.341)	(0.522)	(0.819)	(0.521)
Under 17 Share	-0.390	0.0887	0.0125	-0.341	0.292	0.324	0.825	0.363	0.304
	(0.474)	(0.260)	(0.307)	(0.581)	(0.355)	(0.493)	(0.747)	(0.569)	(0.753)
Over 65 Share	0.247	-0.449	-0.232	-0.542	-0.580	-0.726	0.255	-0.483	0.165
	(0.512)	(0.467)	(0.552)	(0.606)	(0.818)	(0.887)	(0.739)	(1.136)	(1.354)
Post-Secondary Share	-0.404*	-0.0647	0.0242	-0.113	-0.0606	-0.331	-0.485	-0.144	-0.311
	(0.241)	(0.327)	(0.336)	(0.343)	(0.531)	(0.540)	(0.428)	(0.818)	(0.825)
Skilled Industry Share	0.305	-0.145	-0.0439	0.613	0.0748	-0.0259	0.501	0.613	0.550
	(0.375)	(0.215)	(0.236)	(0.495)	(0.367)	(0.379)	(0.553)	(0.449)	(0.579)
Share Immigrant	-0.979***	0.141	0.291	-0.841**	0.479	0.411	0.854*	-0.290	-0.245
	(0.255)	(0.268)	(0.309)	(0.335)	(0.375)	(0.496)	(0.450)	(0.668)	(0.758)
ln (Population)	-0.0587**	-0.833***	-0.861***	-0.0539*	-0.720***	-0.681***	-0.0267	-0.777	-0.768**
	(0.0254)	(0.158)	(0.142)	(0.0303)	(0.198)	(0.229)	(0.0293)	(0.546)	(0.349)
Observations	132	132	132	132	132	132	132	132	132
R-squared	0.714	0.975	0.974	0.604	0.937	0.936	0.624	0.877	0.874
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Locality FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
IVs	No	No	Yes	No	No	Yes	No	No	Yes

Note: Robust Standard Errors in Brackets. * indicates significant at 10%; ** significant at 5%; *** significant at 1%. Regressions were weighted by Labor Force Survey (LFS) observations. The sample includes data from 1989 and 1993. The instruments used in columns (3), (6), and (9) are based on predicted settlement patterns, as described in the paper. The sample includes 66 Local Authorities that are predominantly Jewish (non-Jewish population less than 5%).

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Table 11: Sources of Revenue Per Capita, Religious Fragmentation

	Total Revenues per capita			Own Revenues per capita			Targeted Grants per capita		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Religious Fragmentation	-0.420***	-0.264	-0.230	-0.528***	-0.876***	-0.907***	-0.308	0.586	0.597**
	(0.160)	(0.427)	(0.224)	(0.199)	(0.285)	(0.238)	(0.231)	(0.668)	(0.279)
Under 17 Share	-2.003***	-0.377	-0.485	-3.444***	-0.788*	-0.844**	-0.651	0.218	0.187
	(0.426)	(0.393)	(0.319)	(0.438)	(0.399)	(0.338)	(0.573)	(0.453)	(0.397)
Over 65 Share	0.105	-0.522	-0.401	0.432	-0.448	-0.532	-0.702	0.648	0.586
	(0.511)	(0.595)	(0.488)	(0.730)	(0.548)	(0.517)	(0.651)	(0.643)	(0.607)
Post-Secondary Share	0.542**	-0.0199	0.0329	1.189***	0.650**	0.920**	0.0871	-0.349	-0.467
	(0.274)	(0.383)	(0.350)	(0.366)	(0.320)	(0.370)	(0.404)	(0.450)	(0.435)
Skilled Industry Share	-0.583**	0.134	0.0730	-1.082***	0.120	0.138	-0.120	-0.254	-0.388
	(0.278)	(0.287)	(0.207)	(0.361)	(0.237)	(0.220)	(0.378)	(0.399)	(0.258)
ln (Population)	-0.0313	-1.007***	-1.008***	0.148***	-0.329*	-0.362*	-0.0220	-0.682***	-0.678***
	(0.0237)	(0.153)	(0.197)	(0.0319)	(0.197)	(0.209)	(0.0312)	(0.245)	(0.245)
Observations	204	204	204	204	204	204	204	204	204
R-squared	0.634	0.930	0.930	0.741	0.891	0.890	0.468	0.918	0.917
Year Dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Locality FE	no	yes	yes	no	yes	yes	no	yes	yes
IVs	no	no	yes	no	no	yes	no	no	yes

Note: Robust Standard Errors in Brackets. * indicates significant at 10%; ** significant at 5%; *** significant at 1%. Regressions were weighted by Labor Force Survey (LFS) observations. The sample includes data from 1989 and 1993. The instruments used in columns (3), (6), and (9) are based on predicted settlement patterns, as described in the paper.

Table 12: Sources of Revenue Per Capita, Ethnic Fragmentation

	Total Revenues per capita			Own Revenues per capita			Targeted Grants per capita		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Ethnic Fragmentation	-0.516***	-0.0397	0.0564	0.672***	0.276	0.508	-0.433	0.146	0.229
	(0.173)	(0.126)	(0.169)	(0.191)	(0.234)	(0.325)	(0.348)	(0.370)	(0.279)
Under 17 Share	-0.953**	-0.249	-0.348	-2.668***	-0.674	-0.790*	0.406	0.0499	-0.0554
	(0.418)	(0.262)	(0.244)	(0.626)	(0.616)	(0.469)	(0.617)	(0.416)	(0.403)
Over 65 Share	-0.282	-0.450	-0.221	-0.0658	-0.421	-0.135	-1.828***	0.575	0.257
	(0.491)	(0.418)	(0.438)	(0.868)	(0.748)	(0.844)	(0.652)	(0.710)	(0.725)
Post-Secondary Share	-0.0436	0.184	0.353	0.353	0.728	1.080**	-0.567	-0.240	-0.562
	(0.252)	(0.275)	(0.267)	(0.398)	(0.462)	(0.514)	(0.418)	(0.425)	(0.442)
Skilled Industry Share	0.525	0.232	0.361*	0.217	0.00413	-0.00755	0.493	0.412	0.418
	(0.367)	(0.155)	(0.187)	(0.578)	(0.385)	(0.361)	(0.610)	(0.348)	(0.310)
Share Immigrant	-0.789***	-0.0643	0.0522	-1.118***	-0.461	-0.360	0.485	-0.268	-0.214
	(0.255)	(0.179)	(0.245)	(0.370)	(0.311)	(0.472)	(0.397)	(0.356)	(0.406)
ln (Population)	-0.0394	-0.617***	-0.638***	0.0939***	-0.586***	-0.641***	-0.0332	-0.184	-0.190
	(0.0245)	(0.118)	(0.113)	(0.0332)	(0.189)	(0.218)	(0.0300)	(0.248)	(0.187)
Observations	132	132	132	132	132	132	132	132	132
R-squared	0.692	0.983	0.982	0.672	0.935	0.932	0.654	0.967	0.966
Year Dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Locality FE	no	yes	yes	no	yes	yes	no	yes	yes
IVs	no	no	yes	no	no	yes	no	no	yes

Note: Robust Standard Errors in Brackets. * indicates significant at 10%; ** significant at 5%; *** significant at 1%. Regressions were weighted by Labor Force Survey (LFS) observations. The sample includes data from 1989 and 1993. The instruments used in columns (3), (6), and (9) are based on predicted settlement patterns, as described in the paper. The sample includes 66 Local Authorities that are predominantly Jewish (non-Jewish population less than 5%).

Table 13: Own Revenue Sources (Per Capita), Religious Fragmentation

	Other Income per capita			Local Tax Revenues per capita		
	(1)	(2)	(3)	(4)	(5)	(6)
Religious Fragmentation	-0.431*	-1.264***	-1.260***	-0.595***	-0.436	-0.488
	(0.247)	(0.289)	(0.300)	(0.189)	(0.442)	(0.352)
Under 17 Share	-3.210***	-0.834	-0.968**	-3.586***	-0.700	-0.697
	(0.476)	(0.520)	(0.427)	(0.510)	(0.554)	(0.501)
Over 65 Share	0.710	0.874	1.100*	0.0267	-1.676**	-2.010***
	(0.772)	(0.809)	(0.653)	(0.827)	(0.682)	(0.766)
Post-Secondary Share	0.882**	-0.608	-0.353	1.413***	1.625***	1.918***
	(0.371)	(0.469)	(0.467)	(0.478)	(0.494)	(0.548)
Skilled Industry Share	-0.981**	-0.0544	-0.0536	-1.251***	0.140	0.176
	(0.447)	(0.295)	(0.277)	(0.380)	(0.409)	(0.325)
ln (Population)	0.0841**	-0.401	-0.414	0.209***	-0.273	-0.324
	(0.0328)	(0.248)	(0.263)	(0.0394)	(0.285)	(0.309)
Observations	204	204	204	204	204	204
R-squared	0.631	0.861	0.860	0.747	0.775	0.774
Year Dummies	yes	yes	yes	yes	yes	yes
Locality FE	no	yes	yes	no	yes	yes
IVs	no	no	yes	no	no	yes

Note: Robust Standard Errors in Brackets. * indicates significant at 10%; ** significant at 5%; *** significant at 1%. Regressions were weighted by Labor Force Survey (LFS) observations. The sample includes data from 1989 and 1993. The instruments used in columns (3), (6), and (9) are based on predicted settlement patterns, as described in the paper.

Table 14: Own Revenue Sources (Per Capita), Ethnic Fragmentation

	Other Income per capita			Local Tax Revenues per capita		
	(1)	(2)	(3)	(4)	(5)	(6)
Ethnic Fragmentation	0.351	-0.112	0.0983	0.992***	0.631**	0.896**
	(0.304)	(0.404)	(0.421)	(0.235)	(0.271)	(0.409)
Under 17 Share	-1.881***	0.707	0.575	-3.106***	-1.750**	-1.843***
	(0.686)	(0.748)	(0.607)	(0.787)	(0.782)	(0.591)
Over 65 Share	0.462	1.689	2.450**	-0.656	-2.116**	-2.203**
	(0.881)	(1.151)	(1.093)	(1.124)	(0.819)	(1.063)
Post-Secondary Share	-0.134	-0.0515	0.346	0.708	1.100**	1.419**
	(0.404)	(0.710)	(0.665)	(0.517)	(0.527)	(0.647)
Skilled Industry Share	-0.124	-0.469	-0.333	0.469	0.468	0.341
	(0.614)	(0.429)	(0.467)	(0.739)	(0.580)	(0.455)
Share Immigrant	-1.495***	-0.416	-0.322	-0.759	-0.454	-0.329
	(0.384)	(0.454)	(0.611)	(0.466)	(0.376)	(0.595)
ln (Population)	0.0476	-0.495*	-0.507*	0.136***	-0.622***	-0.718***
	(0.0336)	(0.279)	(0.282)	(0.0435)	(0.229)	(0.274)
Observations	132	132	132	132	132	132
R-squared	0.543	0.893	0.888	0.624	0.908	0.905
Year Dummies	yes	yes	yes	yes	yes	yes
Locality FE	no	yes	yes	no	yes	yes
IVs	no	no	yes	no	no	yes

Note: Robust Standard Errors in Brackets. * indicates significant at 10%; ** significant at 5%; *** significant at 1%. Regressions were weighted by Labor Force Survey (LFS) observations. The sample includes data from 1989 and 1993. The instruments used in columns (3), (6), and (9) are based on predicted settlement patterns, as described in the paper. The sample includes 66 Local Authorities that are predominantly Jewish (non-Jewish population less than 5%).