

# Boundary Defense: Evidence from a Referendum Against School Reform \*

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September 1, 2025

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## Abstract

Policies that reinforce unequal opportunity persist in democracies. I develop a theory of “Boundary Defense” to explain why. Middle-class families mobilize to defend these opportunity boundaries against reform when they lack alternative strategies to secure their status against uncertainty. In Germany, I argue early-age sorting across stratified schools is an opportunity boundary that excludes immigrants and that status uncertain German families defend it against reform. To test this, I introduce a 2010 referendum which blocked a reform to early-age sorting across schools in Hamburg and collect data from precinct-level votes, city-district demographics, election studies, and archival sources. Results show referendum support was highest in lower-income places and specific precincts with less access to academic schools and higher shares of immigrant children, among parents of school-age children without academic educations, and predicts future support for politicians who took positions against the reform. I suggest this theory also applies to different boundaries in both education and other fields, and that policies which reduce middle-class uncertainty can equalize opportunity better than technocratic reforms given boundary defense.

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\*I would like to thank Peter A. Hall, Torben Iversen, and Kathleen Thelen for their advice on earlier versions of this paper. I would also like to thank David Attewell, Adrian Scheibler, Anna Stallings, Sara Watson and participants at the 31st International Conference of Europeanists for their helpful feedback.

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# 1 Introduction

As early as age 9, children in Germany face a fork in the road. After Grade 4, they are sorted across schools that lead to diverging opportunities. Most sent to academic secondary schools will eventually graduate with permission to enroll in universities. Those sorted to other schools are unlikely to have this opportunity. Instead, most enter vocational training programs. While political economists have previously argued that Germany's vocational training system offers comparative advantages (Streeck, 1991; Hall and Soskice, 2001), it increasingly leads to precarious labor market outcomes (Protsch and Solga, 2016), amid skill-biased economic change that rewards degree holders (Thelen, 2019; Diessner et al., 2022). This early sorting leads to worse outcomes for immigrant children (Georgi, 2024), who have too little time to develop native-level language skills. It also contributes to Germany's comparative educational underperformance (Piopiunik, 2014; Woessmann, 2016). This policy persists nonetheless, even as similar institutions in other countries have been reformed (Giudici et al., 2023). What explains the persistence of policies like early tracking that reinforce durable inequalities, despite their negative consequences?

Amid economic change that fosters uncertainty about labor market opportunity (Acemoglu and Autor, 2011; Oesch, 2013), life prospects diverge across stratified social groups in liberal democracies (Goos et al., 2009; Autor and Dorn, 2013). Social theorists have attributed this to institutions that distribute opportunities unequally across groups of socio-economic winners and losers (Tilly, 1998; DiPrete and Eirich, 2006). While advocates suggest reforms could alleviate these durable inequalities, life chances remain polarized across groups, which suggests policies that distribute opportunities unequally are politically resilient features of rich liberal democracies.

This challenges theories that argue liberal democracy and equal opportunity are politically complementary. Liberal theorists have argued that political institutions must ensure equal opportunity across social groups to be considered fair (Rawls, 1999). Political economists have likewise argued that aspirational voters demand access to opportunities, limiting run-away inequalities in capitalist democracies (Iversen and Soskice, 2019). Reforms that ensure equal opportunity would seem to address voters' demands for fairness (Kim and Hall, 2024), and

aspirational voters might be expected to successfully assert these demands through democratic means. Yet democracies like Germany are characterized by policies that reinforce durable inequalities, such as early tracking.

While some theories attribute economic inequalities to political representation gaps that favor elites, this cannot fully explain durable inequalities of opportunity. Building on theories of the “upper-class accent” of politics (Schattschneider, 1960), recent work across contexts argues that politicians are more responsive to the preferences of the rich (Bartels, 2008; Gilens, 2012; Lupu and Pontusson, 2023). If wealthy voters prefer policies that promote inequality, this theory may explain its persistence. However, studies have shown that middle-class voters have meaningful sway over policy and continue to benefit from redistribution (Elkjær and Iversen, 2020, 2023). While more conditional theories that predict elite domination over fiscal policy remain empirically plausible (Persson and Sundell, 2024; Elkjær and Klitgaard, 2024), separate work attributes unequal *opportunity* to elite families that dominate politics to secure their children’s status through “opportunity hoarding” (Reeves, 2017). However, this is inconsistent with the concept’s original use (Tilly, 1998), where it labeled means by which less advantaged groups like immigrants secure life chances in uncertain circumstances. Unlike opportunity hoarders, wealthy families can buy opportunity in markets (Grusky et al., 2019), which suggests they have limited motives to collectively defend policies that enable opportunity hoarding.

Therefore, I argue that middle-class families defend policies that allow them to hoard opportunities against reform when they lack alternative strategies to secure their uncertain status. In a process I call “boundary defense”, I theorize that these *marginal insiders* defend *opportunity boundaries*, policies that reduce uncertainty for them by limiting others’ access to scarce opportunities. This harms *marginal outsiders*, who would be upwardly mobile with reform. Unlike more *secure insiders*, marginal insiders lack private alternatives to this collective strategy of boundary defense. Institutions determine the relative size of the marginal insider group that defends specific opportunity boundaries against reform by defining alternative strategies to reduce status uncertainty. The political success of boundary defense given marginal insiders’ group-size depends

on the intensity of secure insiders' weaker pro-reform preferences, and differences in the political influence that marginal insiders and outsiders have over electorally-motivated politicians.

To test my theory, I develop hypotheses on a referendum that blocked a reform to early tracking in Hamburg. This German city-state's parliament unanimously voted to consolidate non-academic school tracks into a single district-level comprehensive school while preserving academic *Gymnasium* schools in parallel, delayed when students were sorted across these two tracks from grade 4 to 6, and removed parents' choice over their children's sorting outcomes. Shortly after, a citizens movement collected enough signatures to hold a referendum to restore early tracking and parental choice, which passed decisively in July 2010. I argue that parents uncertain about their children's access to academic schools after the reform were more likely to support the referendum and to punish reformers electorally. I expect that relatively few families relied on tracking *between* intermediate and basic non-academic schools in Hamburg, which explains why they were successfully consolidated, while the rest of the reform caused status uncertainty among a politically pivotal group of German families by promoting immigrants' access to scarce academic school seats, which explains why the referendum passed. At the neighborhood-level, I expect voters in lower income areas and areas with lower shares of sorting to academic schools with higher shares of immigrant children face more uncertainty after reform and are thus more likely to support the referendum. At the individual-level, I expect parents without academic educations are less certain about their ability to ensure their children's sorting to academic schools without choice and are thus more likely to support the referendum. Finally, I expect electorally-motivated politicians in Hamburg took positions on the referendum aligned with marginal insiders rather than co-partisan elites, and that referendum supporters rewarded this with electoral support.

Results from a mixed-methods analysis support these expectations. To test the hypothesis on how the size of the marginal-insider group differed between the successful reform that consolidated non-academic school tracks and the failed reform to early tracking, I use administrative data on school enrollment in Hamburg and across German states. Results from enrollment trends show that comparatively few students attend intermediate track schools in Hamburg, while

synthetic difference-in-differences estimates provide suggestive though inconclusive evidence that reform caused a decrease in German students who were sorted to academic schools. To test the neighborhood-level voting hypothesis, I spatially match referendum precinct-level votes to city-district demographics. Results of vote-weighted regressions show that voters at specific precincts with less sorting to academic schools and especially high shares of immigrant children vote for the referendum more. To test the micro-level hypothesis, I use an election study that asked about respondents' recalled vote on the referendum. Results show that parents without academic educations were more likely to support the referendum. To test the hypothesis on electoral politics, I examine media and partisan archives to observe why Hamburg's Social Democratic Party (SPD) positioned itself against school reform, and use the neighborhood- and micro-level data to test how referendum support predicts votes in the post-referendum snap election. Results show that the head of Hamburg's SPD Olaf Scholz adopted positions against reform to appeal to voters uncertain about their children's labor market opportunities despite co-partisan elites' countervailing preferences, and that referendum supporters at the neighborhood- and individual level disproportionately supported Scholz, which contributed to his party's landslide victory over the pro-reform governing coalition in 2011.

To conclude, I suggest future work can test whether boundary defense explains why policies that reinforce durable inequalities are resilient in other contexts, and argue that policies which address marginal insiders' anxieties can better secure opportunities for outsiders in political practice than elite-led technocratic reform given democratic constraints.

## **2 A Theory of Boundary Defense**

Durable inequalities of opportunity are hard to explain with theories that attribute inequality to elite domination over politics. Although the empirical record on this theory is mixed (Elkjær and Klitgaard, 2024), elites do have clear motives to mobilize against fiscal policy that would reduce their wealth. They do not have as clear motives to collectively defend policies that allow

opportunities to be hoarded. In market societies, wealthy elites have “private alternatives” to policies that reduce collective social risk (Hacker, 2004; Bussemeyer and Iversen, 2019), which is also true of opportunity boundaries (Grusky et al., 2019).

I argue instead that middle class families have motives to defend “opportunity boundaries” against reform when they lack alternative strategies to secure their uncertain status, a process I call “boundary defense”. The size of the group of “marginal insiders” that lacks these alternatives depends on how institutions shape their availability. The political success of boundary defense depends on the specific size of the marginal insider group, the relative intensity of more “secure insiders”’ weak preferences for reform, and representation gaps between marginal insiders and “marginal outsiders” that would benefit from reform. Thus, while “representation gaps” do help to explain durable inequalities, the relevant political cleavage is at the policy-specific margins of inclusion, rather than between the wealthy and the poor.

## **2.1 Middle-Class Motives for Boundary Defense**

When economic transformations disrupt labor markets without compensating social policy, middle class families in liberal democracies face uncertainties about their future status. Technological change triggers greater demand for workers with academic credentials (Goldin and Katz, 2008; Oesch, 2013), which promotes polarized labor markets (Goos et al., 2009; Autor and Dorn, 2013). Simultaneously, welfare states have failed to protect citizens against these rising risks (Hacker, 2004; Palier, 2010). As a result, disappointed members of the middle class have failed to maintain their socio-economic status (Gidron and Hall, 2020; Kurer and Van Staalduinen, 2022). Facing similar threats given rising social risks, apprehensive families whose status has not yet declined seek strategies to prevent this (Häusermann et al., 2023; Friedman and Iversen, 2024).

To reduce uncertainty, families can hoard opportunities in groups delineated by figurative “opportunity boundaries”. Sociologists who study durable inequalities use “boundaries” as a label for practices that divide societies into unequal groups (Tilly, 1998). Policies that allow in-group members to hoard opportunities can thus be conceived of as boundaries. This concept is distinct

from “symbolic boundaries” between identity groups<sup>1</sup> (Lamont and Molnár, 2002; Tilly, 2005). The version focused on material well-being covers formal rules, including the everyday sense of territorial boundaries which delineate access to social goods by geography. Thurston (2018) analyzes more figurative “boundaries” that define eligibility for state-sponsored credit in America. Drawing from this literature, I call policies that allow in-group members to hoard opportunities, “opportunity boundaries”.

Political economists have studied opportunity boundaries that reinforce diverging life chances in the field of labor market policy, using the concept of dualism. Scholars of labor market dualism argue that policies like employment protection can help a group of labor market “insiders” to secure employment-dependent social goods at the expense of “outsiders” (Rueda, 2005; Palier and Thelen, 2010). Structural economic change has increased labor market risks, which gives insiders strong motives to defend rules that exclude outsiders from scarce opportunities (Emmenegger et al., 2012). Empirical studies have measured how policy preferences differ between and within labor market insider and outsider groups (Schwander and Häusermann, 2013), which influenced later theories on apprehensive voters that fear downward mobility (Häusermann et al., 2023).

Beyond dualism, opportunity boundaries also reinforce unequal opportunities between insiders and outsiders in other fields that influence labor market opportunity, like education. Skills and credentials acquired during education determine access to jobs (Thelen, 2004; Busemeyer, 2014). In corporatist political economies with “conservative” welfare states such as Germany, certified vocational skills have historically been required to access social goods that reduce risk, such as employment protection and social insurance (Iversen and Stephens, 2008; Busemeyer and Trampusch, 2012). In more liberal labor markets, policies that reinforce unequal access to schools lead to diverging labor market outcomes (Estévez-Abe et al., 2001). For example, territorial boundaries sort students into stratified schools, with polarizing consequences for opportunities (Gingrich and Ansell, 2014; Laliberte, 2021). Early sorting across school tracks also divides opportunities unequally across groups (Protsch and Solga, 2016).

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<sup>1</sup>I discuss how these concepts are related in the Conclusion.

Specific families have strong motives to defend opportunity boundaries against reforms that cause uncertainty about future status. When opportunities are scarce, for instance when enrollment is capped at desirable schools, then outsiders' greater access to opportunity will cause some insiders to be displaced from risk-mitigating opportunities. Even when reform effects are ambiguous, apprehensive families will defend policies that reduce uncertainty when overall risks are high (Friedman and Iversen, 2024).

Other families have alternative strategies to secure status without needing to defend opportunity boundaries, and may favor reform that offers benefits. Beneficiaries of policies can face off politically against coalitions of lower-status non-beneficiaries and higher-status actors with private alternatives (Epple and Romano, 1996). In the case of social policy that mitigates risk, families with access to private alternatives are less invested in blocking retrenchment (Hacker, 2004). Many studies show that where private alternatives to collective risk sharing are available, capacity to self insure lowers support for social policy provision (Ansell, 2014; Busemeyer and Iversen, 2019). Workers in low-risk occupations or with high skills are also self-insured against risk, which reduces their support for employment insurance (Rehm, 2011; Häusermann et al., 2015). Similar mechanisms can be expected for private alternatives to opportunity boundaries, which secure against risk. Families who don't rely on opportunity boundaries may even benefit from reform. With peer effects for example (Epple and Romano, 2011), secure families may benefit from talented outsiders' upward mobility.

I therefore distinguish between "marginal insiders" that defend opportunity boundaries against reform, and "secure insiders" who have private alternatives and weakly prefer reform. Figure 1 provides a schema for expected preference cleavages between these groups and among outsiders. It adapts labels from theories about how status expectations influence policy preferences (Schwander, 2020; Häusermann et al., 2023), and applies it to groups that differ by expected status before and after *specific* attempted reforms to opportunity boundaries. Marginal insiders in the bottom-left strongly oppose reform because they expect downward mobility and therefore defend boundaries. Secure insiders in the top-left have alternative strategies and don't rely on collective boundary



Figure 1: Boundary & Reform Specific Status Expectations and Preferences

		<b>Pre-Reform Status</b>	
		High	Low
<b>Post-Reform Status</b>	High	<b>Secure Insiders</b> (No Status Change) Weakly Pro-Reform	<b>Marginal Outsiders</b> (Upwardly Mobile) Strongly Pro-Reform
	Low	<b>Marginal Insiders</b> (Downwardly Mobile) Strongly Anti-Reform	<b>Burdened Outsiders</b> (No Status Change) Ambiguous

defense. They are expected to favor reform more weakly than marginal insiders oppose it, with intensity that depends on expected efficiency benefits from reform. Marginal outsiders in the top-right expect upward mobility after reform, and are expected to favor reform as strongly as marginal insiders oppose it. Burdened outsiders in the bottom-right expect neither direct benefits nor harms from reform, so their preferences are ambiguous.

## 2.2 When Does Boundary Defense Succeed?

Figure 1 summarizes expectations about groups' reform preferences, but does not explain when they succeed *politically*. I argue that successful boundary defense depends on the size of the marginal insider group that defends a specific boundary, the intensity of secure insiders' weakly pro-reform preferences, and differences in political influence between marginal insiders and outsiders that would benefit from reform.

The group of marginal insiders that lacks alternatives to boundary defense differs across specific boundaries and proposed reforms. Policy feedback theories argue that persistence depends

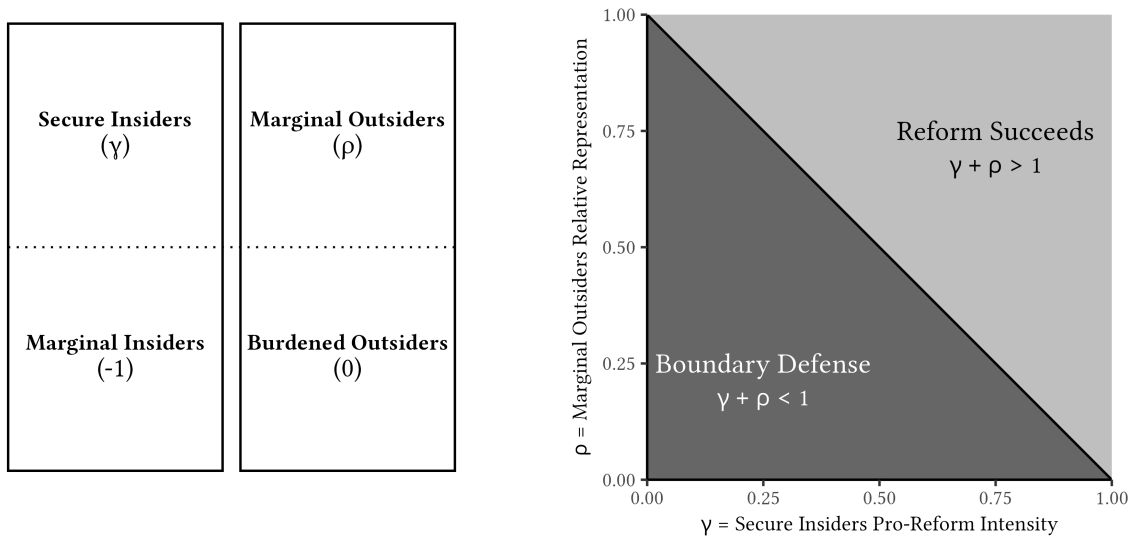
on whether a constituency successfully protects a policy against reform, which varies with policy details (Béland et al., 2022). Some policies have many beneficiaries and these policies are remarkably resilient (Pierson, 1996). Others have narrower protective constituencies and are more prone to reform. The same is true for opportunity boundaries, which mitigate risks for a group of marginal insiders. Likewise, reform proposals differ in the scope of insiders for whom they cause uncertainty. Some reforms only threaten an electorally insignificant group of marginal insiders. Others may cause uncertainty for larger group, and are therefore more likely to fail politically.

The size of the group that defends a boundary against reform depends on how institutions shape alternative strategies. Swenson (2002) argues that employers' interests in status quo policy depends on how institutions define strategic alternatives. Micro-level research shows that institutional differences explain why social policy preferences differ cross-nationally, because they determine who has alternatives to social policy provision (Gingrich and Ansell, 2012). Institutional context plays a similar role for opportunity boundaries, which mitigate risks for marginal insiders. Institutions also change over time (Mahoney and Thelen, 2009), which can cause changes in actors' strategic choice sets and thus the size of marginal insider groups, as the theory's application in Section 3.3 will illustrate.

Marginal insiders' political success given size depends on representation gaps between them and marginal outsiders. Some theories argue that wealth-based representation gaps lead to policies that reinforce inequality (Bartels, 2008; Gilens, 2012). In the case of unequal opportunities however, elites are secure insiders with weak preferences, while lower status marginal insiders and outsiders have strong but opposed preferences. Thus, representation gaps between marginal insiders and outsiders are more influential for whether boundary defense succeeds. Where marginal insiders have greater representation than marginal outsiders, they dominate reform politics and politically succeed. When secure insiders' preference are sufficiently weak and/or representation gaps are sufficiently large, marginal insiders can succeed even when they are a small group.

When the group of marginal insiders that lacks strategic alternatives is sufficiently large and politically over-represented, electorally-motivated politicians will accommodate their preferences

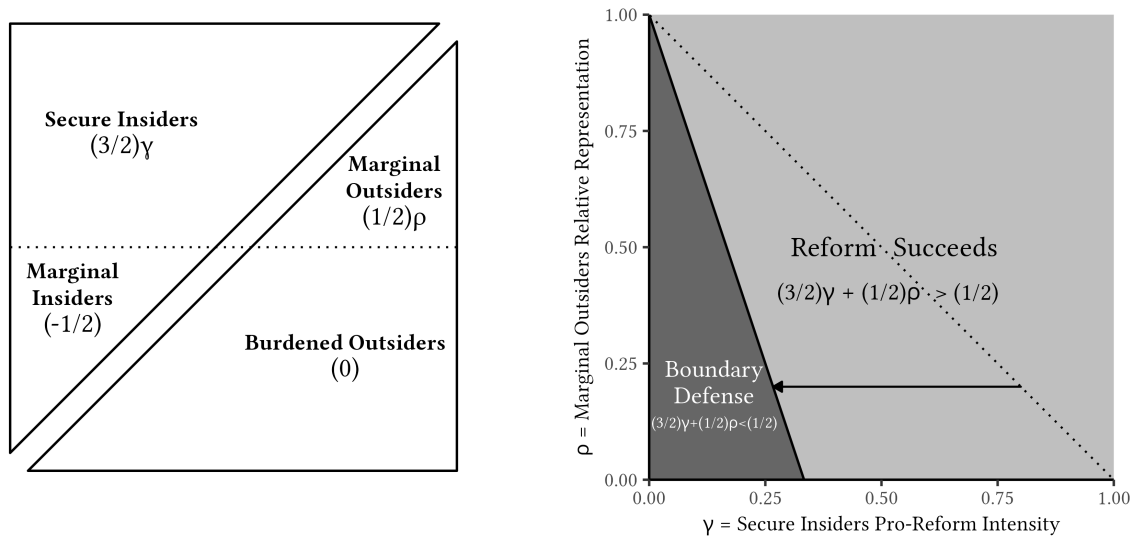
Figure 2: Influence of Preference Intensity and Representation Gaps on Boundary Defense Success



in reform episodes despite interest group or partisan pressure. Voters loudly voice their opinion on issues like education because consequences for well-being are legible. Busemeyer et al. (2020) argue that partisan elites can dominate over voters nonetheless when politics is “loud but noisy”, when the public is divided. I argue instead that mass constituencies can dominate reform politics despite divided interests when they are politically over-represented. Where marginal insiders have more political influence than marginal outsiders, electorally-sensitive politicians will accommodate them despite partisan elites’ preferences.

Figure 2 shows how secure insiders’ weak preferences and marginal outsiders’ limited voice influences the political fortunes of boundary defense. The left panel adapts the schema from Figure 1, with groups in quadrants that correspond to pre- and post-reform status expectations. Marginal insiders’ political influence against reform is indexed by  $-1$ . Secure insiders favor reform more weakly than marginal insiders oppose it, so their influence is represented by  $+\gamma$ , where  $0 < \gamma < 1$ . Marginal outsiders favor reform as strongly as marginal insiders oppose it, but usually have less political influence, represented by  $+\rho$  where  $0 \leq \rho \leq 1$  because they can be anywhere from disenfranchised ( $\rho = 0$ ) to equally represented ( $\rho = 1$ ) depending on context. In this simple model, boundary defense succeeds when marginal insiders electorally outweigh the

Figure 3: Joint Influence of Group Size and Other Factors on Boundary Defense Success



coalition of secure insiders with weak preferences and marginal insiders with weak representation: when  $\rho + \gamma < 1$ . The bottom-left of Figure 2's right panel, labeled "Boundary Defense", shows cases where this is true in contrast to the top-right where "Reform Succeeds" because  $\rho + \gamma > 1$ .

Figure 3 shows how marginal insiders' group size interacts with these other factors to determine whether boundary defense succeeds politically. The size of the secure insider group in the left panel of Figure 3 is larger than in Figure 2, which shows a case where more insiders have private alternatives to boundary defense. Assuming a fixed overall group of insiders, the marginal insider group is half as large as before, and their influence is thus  $-1/2$ . Secure insiders with weak preference for reform are larger by the same margin, so their influence is now  $(3/2)\gamma$ . The set of marginal outsiders who benefit from reform is also half its original size, so their influence is now  $(1/2)\rho$ . The right panel of Figure 3 contrasts this case with a larger group of secure insiders with the original example. Boundary defense now only succeeds when  $3/2\gamma + 1/2\rho < 1/2$ . Reform succeeds across a wider range of  $\gamma$  and  $\rho$ , meaning more cases where secure insiders' pro-reform preferences and marginal outsiders' political influence are relatively weak. The arrow shows how a change in the size of the marginal insider group means reform can succeed now where it would not have with a larger group of marginal marginal insiders. However, when marginal outsiders'

political influence and/or secure insiders' pro-reform preferences are sufficiently weak, boundary defense can still succeed, as shown in the small remaining space in the bottom-left of the Figure labeled "Boundary Defense". For formally inclined readers, Appendix A adds marginal insider group size as a third model parameter, plots three-dimensional versions of Figure 3 to build further intuition, and derives some formal properties of the three-dimensional model to suggest avenues for future research.

This simple model of democratic politics encapsulates the theory of boundary defense. Figure 1 summarizes how *marginal insiders* strongly oppose reforms that broaden opportunities for outsiders when they lack alternative strategies to secure against the threats these reforms pose to their future status. These preferences interact with context-specific institutions to explain why specific opportunity boundaries are so politically resilient in particular time- and case-contexts. Institutions shape the intensity of pro-reform preferences among *secure insiders* who have private alternatives, the relative political voice of *marginal outsiders* whom reform would benefit, and finally the size of the marginal outsider group committed to defending a boundary against reform. Figure 2 showed how the former two factors separately influence the political fortunes of boundary defenders, while figure 3 showed how the marginal insider group's size interacts with these factors to determine which specific boundaries are politically resilient despite the efforts of reformers. In what follows, I apply this theory to the German context, where a citizen's movement in Hamburg successfully blocked an elite-led effort to broaden opportunities for immigrants by extending joint schooling by two years and limiting native-born parents' choices.

### 3 Case: A Referendum Against Longer Joint Schooling

In early 2009, Germany's paper of record published a scathing article with a title that captured public perceptions of a citizen's movement against school reform that Hamburg's parliament had recently passed: "Gucci-Protest" (Krupa, 2009). It speculated that the crowd of several thousand comprised of doctors and lawyers, Hamburg's elite who were selfishly opposed to reform that

would broaden opportunities for the worst-off. This phrase became popular, and was adopted by other reporters (Kahlcke, 2010) and academics (Bale, 2017), who felt it characterized the group that politicians from Hamburg’s co-governing Greens called an “elitist minority” (Menke, 2010). By the end of the year however, these thousands had swelled: the movement had gathered 184,000 signatures, over three times the amount needed to trigger a referendum that could overturn the coalition government’s signature school reform (Menke, 2010).

Against this narrative, I argue that reform was overturned not by Hamburg’s elites, but rather by families that relied on early tracking to reduce uncertainty about their children’s access to opportunities. To defend this, I provide background which shows that pivotal German families have long defended early tracking to secure opportunities for their children, even as political support for other formerly characteristic institutions such as its three-track school system has eroded. I situate the 2010 Hamburg referendum within this context, and argue that the referendum was supported by “marginal insiders: whose children had more secure access to academic schools relative to immigrant children with earlier tracking and parental choice. As observable implications, I develop testable hypotheses on families’ relative dependence on access to intermediate as opposed to academic schools, on who supported the referendum at the precinct- and individual level, and on referendum supporters’ electoral behavior at the end of this Section, before I proceed to a mixed-methods test of them.

### **3.1 Background: Tracked Schools, Early Sorting, and Education Outcomes**

German families have defended their children’s access to specific *non-academic* schools in the past because they offered a secure access to vocational training opportunities, but recent economic changes mean these schools offer increasingly uncertain labor market opportunities. In a historic three track school system, high-tier academic schools (*Gymnasium*) had been reserved for German elites, and most students attended intermediate (*Realschule*) or basic (*Hauptschule*) track schools that offered stratified access to vocational training opportunities (Herrlitz, 1986). Reformers attempted to change this system in favor of an American style comprehensive system in the post-war

period, but these reforms were defeated by coalitions that defended the status quo, which included middle-class families who sought secure access to intermediate track schools. (Helbig and Nikolai, 2015; Giudici et al., 2023). Apprenticeships accessible to intermediate *Realschule* graduates offered secure opportunities in this context (Thelen, 2004; Busemeyer, 2014), which also discouraged college enrollment (Powell and Solga, 2011). Where governing parties threatened this secure path to opportunity by attempting to delay tracking, they faced electoral backlash (Heidenheimer, 1997; Helbig and Nikolai, 2015). As economic change has led the German economy to become more knowledge-based however (Thelen, 2019), even intermediate track non-academic schools lead to increasingly uncertain labor market outcomes (Thelen, 2014; Protsch and Solga, 2016), and the labor market has been characterized as “biased” in favor of those with academic credentials (Diessner et al., 2022).

The majority of German families now rely on access to academic *Gymnasium* schools to secure opportunities, but early tracking sorts immigrant children away from these schools. Desirable segments of Germany’s apprenticeship system now often demand trainees who have graduated from academic *Gymnasium* secondary schools (Thelen, 2019). School-based vocational programs may also require academic school-leaving certificates to enter, and a growing share of vocational training takes place at universities in “dual-study” programs (Protsch and Solga, 2016; Graf, 2018). The plurality of native-born German children now attend academic rather than non-academic school tracks as a result, but most immigrant children are sorted away from these schools. Early age sorting across these tracks is partly responsible, and contributes to native-immigrant sorting gaps that cannot be attributed to differences in academic abilities (Georgi, 2024). Second-generation students with “Migration Background” are less likely to receive recommendations to attend academic school tracks accounting for observable academic ability (Lüdemann and Schwerdt, 2013). Immigrant students are also disadvantaged by early-tracking because their parents have less of the social and cultural capital necessary to successfully navigate early tracking (Bourdieu, 1984), and because of differences in household language acquisition (Diehl et al., 2015). Institutions that give parents’ discretion over sorting decisions may exacerbate this, since relatively advantaged

parents are best positioned to take advantage of discretionary opportunities to secure advantage (Jackson and Jonsson, 2013)<sup>2</sup>.

Cross-national research on early tracking suggests that it not only promotes unequal opportunity across the native-immigrant divide, but also inefficiently reduces overall education performance (Hanushek and Woßmann, 2006; Woessmann, 2016). Across German states, delayed tracking improves outcomes for low-achievers, without having negative effects on high-achievers (Matthewes, 2021). When tracking was reverted from grade six to four in the German state of Bavaria in a reverse of the attempted reform in Hamburg, renewed early-tracking reduced overall academic performance without apparently improving outcomes for high-track students (Piopiunik, 2014). Given the importance of broad upskilling for supply-side of the economy as well (Goldin and Katz, 2008), parents with investments in the labor market demand side of the economy may also experience costs from an education system that limits overall academic achievement. These concerns were reflected in political elites' response to the so-called "PISA" shock (Waldow, 2009): Germany measured as a comparative under-performer in cross-national education exams in the early 2000s, and experts blamed this in part on its system of early tracking across school types.

Together, the growing uncertainty about labor market opportunities offered by vocational training programs, and the persistence of early age sorting across school tracks despite its negative impacts on educational equity *and* efficiency provide background on a 2008 attempt to implement ambitious structural school reform in the German city-state of Hamburg.

### **3.2 Case: Failed School Reform in Hamburg (2008-2010)**

In 2008, a new governing coalition in Hamburg passed an education reform bill that promised to both improve education efficiency and equalize opportunities. German political discourse had become pre-occupied with the "PISA Shock": cross-national tests showed it was an educational laggard, and analysts blamed this in part on its system of early age sorting across stratified schools (Waldow, 2009). During a 2008 parliamentary campaign where this issue was salient, the major

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<sup>2</sup>However, cf. Dollmann (2016), who shows some ambitious immigrant families may benefit from choice. I return to the theme of heterogeneity among "outsiders" in the conclusion.



parties took positions consistent with their past positions (Busemeyer, 2014). The center-right Christian Democrats (CDU) campaigned against new comprehensive schools and longer joint schooling, while expressing concerns about educational inefficiencies. The traditionally working-class Social Democrats (SPD) and the more social-progressive Greens favored new comprehensive schools and longer joint schooling, and the Greens campaigned on structural education reform as a cornerstone campaign issue. The CDU held its seat plurality after this election but slipped below majority and was forced to find a coalition partner. Facing a choice between the SPD and the much smaller Greens, the CDU formed a coalition with the Greens for the first time in Hamburg's history (Sch, 2008). In negotiations, this "Black-Green" coalition agreed to pursue structural school reforms despite the CDU's past positions. The reform would consolidate multiple non-academic school tracks into a single comprehensive school (*Stadtteilschule*) at the level of the city-district (*Stadtteile*), and delay the age at which students were sorted between either this new school type or persisting academic schools (*Gymnasium*) from grade 4 to grade 6, while also removing parental choice over sorting decisions in favor of binding teacher recommendations (Schrigh, 2008).

As this reform advanced, a citizens' movement calling itself "We want to learn" (*Wir wollen lernen*) collected enough signatures to trigger a referendum that could overturn the reform with binding effect. This campaign specifically demanded that early-age tracking after grade 4 be restored, and that parents retain their rights to veto teachers' recommendation over school tracks (Menke, 2009). Their demands did not include the restoration of now consolidated non-academic school tracks. By one month after the 2008 election, the movement had collected 21,000 signatures and organized mass protests (Schiel, 2010). By late 2009, it had collected 184,000 signatures, more than three times the number needed to put a referendum on the ballot (Menke, 2009).

This movement ultimately achieved its goals. Even before the referendum passed, Hamburg's parliament rolled back its restriction of parental choice in a bid to convince the movement not to continue pursuing its demand to restore early tracking (Schiel, 2010). The parliament also promised not to pursue any more structural school reforms for the next 10 years at the insistence of the SPD. Nonetheless, the movement persisted, and a referendum was held in July 2010 that

put a decisive reversal of delayed tracking and restricted parental choice on the ballot. The referendum passed with a clear 58% to 42% margin in favor of reversing the reform. Its leading policy achievement in shambles, the governing coalition collapsed soon afterwards, triggering a snap election. The CDU's vote share cratered in early 2011: it lost half of its parliamentary seats and had to leave government in Hamburg for the first time in 10 years.

Observers of this reform episode disagree on which constituency achieved its aims in the referendum. One common view is that rich voters defeated egalitarian reform. The Green Party's Federal leader argued that referendum supporters were not concerned with parents' rights but rather with "elitistly insulating" their children in academic schools away from working-class children or people of migration-background like himself (Ozdemir, 2010). Media critics lamented that Hamburg's elite were thwarting an effort to equalize opportunity for the benefit of disadvantaged groups like immigrant children (Kam, 2010; Edelstein and Helbig, 2010; Wiese, 2010). Academic literature has interpreted the referendum as a case of "opportunity hoarding", while suggesting that it was upper-middle class voters that had hoarded opportunities (Apple and Debs, 2021). However, other sources offered interpretations that aren't fully consistent with an elite domination account. An alternative media source blamed the upper middle-class for the referendum while nonetheless acknowledging that some less privileged families had joined them to "slip through the crack" of opportunity (Kahlcke, 2010). Another suggested not only elites but also the "core middle class" felt betrayed by the Christian Democrats pro-reform turn (Schmoll, 2010). Newspaper polling showed that the age-group most in favor of the referendum were 25 to 49 years olds, often parents of school-age children, but failed to document any class cleavage within the group (Hennis, 2010). Finally a populist tabloid known for its lower-status readership argued the reform was worst for parents in poor areas with low rates of *Gymnasium* attendance, because parents in wealthy suburbs had easier access to these schools regardless of reform (Schiel, 2010). Members of the movement also styled themselves as populists "against those at the top" (Pergande, 2010).

Amid these conflicting observations, there has not been a systematic empirical analysis of this reform episode's politics. I contribute this in what follows by applying a mixed methods

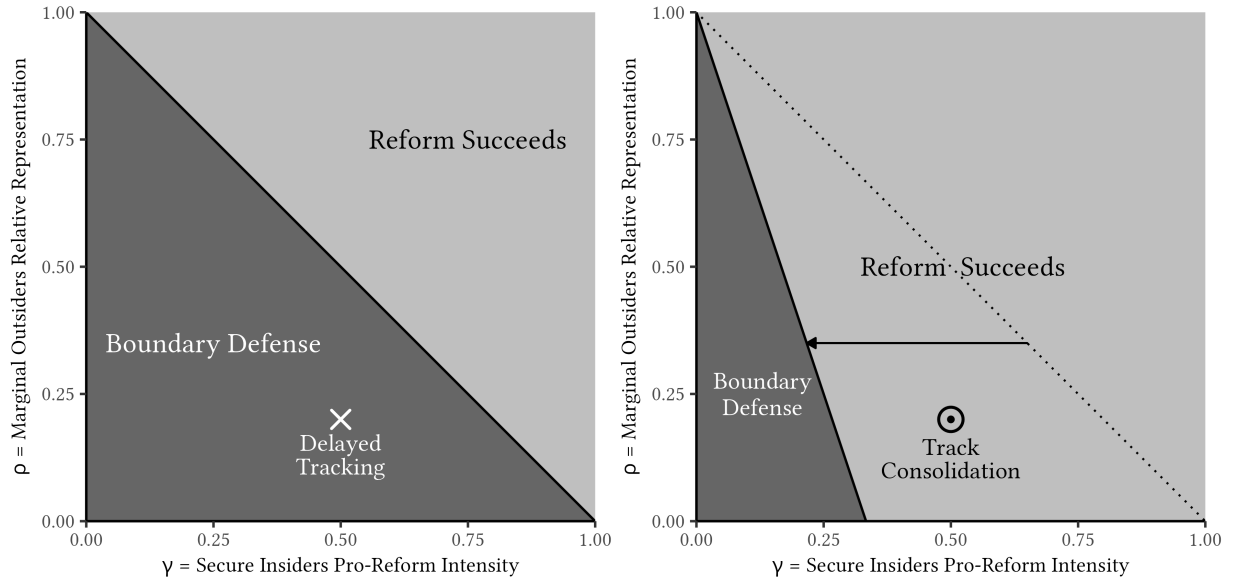
approach to diverse data sources, after applying my theory of boundary defense to develop testable expectations.

### **3.3 Empirical Setting: The 2010 Hamburg Referendum as Boundary Defense**

I argue that the Hamburg referendum against school reform was a case of boundary defense. While non-academic schools including formerly defended intermediate track schools were easily consolidated because fewer families depend on tracking between intermediate and basic school tracks to secure opportunity, early age sorting persists because a large group of marginal insiders continues to rely on advantages it offers to native as opposed to immigrant children in competition over access to scarce opportunities at *academic* schools. Native German families concerned about negative peer effects and a more meritocratic sorting signal with two more years of joint schooling, as well as parents without academic educations who are less certain about their ability to transmit their social status to their children through securing access to academic schools without parental choice are marginal insiders that rely on early age sorting with choice to secure their children's access to academic schools. Besides voting for the referendum, these marginal insiders are also expected to secure against the risk of future reforms by punishing reformers and rewarding reform opponents in elections. Given the relative political over-representation of marginal insiders compared to non-citizens or Germans with migration background but limited political engagement, electorally motivated politicians are expected to accommodate marginal insiders' policy preferences despite the ideological preferences of partisan elites.

Non-academic schools were easily consolidated in the Hamburg reform episode despite intermediate schools being previously defended by marginal insiders. I argue that the size of the marginal insider group that relies on early tracking between intermediate and basic school tracks has declined due to institutional change, while a larger group of families continues to rely on early sorting as a policy nonetheless to secure access to *academic* schools. Figure 4 applies my theory to compare the politics of delayed tracking with the politics of non-academic track

Figure 4: Boundary Defense (Delayed Tracking) vs Successful Reform (Track Consolidation)



consolidation. The left panel uses the model of a relatively large insider group in figure 1 to show the politics of delayed tracking, where marginal insiders' successfully defended against reform in Hamburg because the size of the group that relies on early age sorting across stratified schools has not declined. Many families still rely on early tracking with parental choice, albeit to secure access academic rather than intermediate track schools. The right panel by contrast shows the case of track consolidation, where institutional change has reduced the size of the marginal insider group that relies on early tracking between intermediate and basic school tracks. As the group of families that depend on sorting to intermediate schools shrinks, reform can succeed where it had failed in the past even with consistently weak pro-reform preferences among secure insiders and low political influence among marginal outsiders. This explains why early age tracking is comparatively resilient politically despite its negative consequences for educational equity and efficiency.

The ease with which intermediate and basic school tracks were consolidated in Hamburg can be explained by an early decline in the size of the marginal insider group that relies on secure access to intermediate track schools to secure opportunity in Hamburg. Likewise, the larger group of native-born German families that lack alternatives to defending early sorting with choice

to ensure opportunities for their children to enroll in academic track schools can explain the comparative political resilience of early tracking. I expect that early reform implementation triggered uncertainty among native-born German families regarding their children's access to academic schools, explaining marginal insiders intense defense of early age sorting with choice against reform.

**Hypothesis 1 (H1; fewer defenders):** *Just prior to the reform, the share of native-born students who attend intermediate (Realschule) track schools is lower in Hamburg than in other German states.*

**Hypothesis 2 (H2; displacement threat):** *School reform in Hamburg reduced native-born German students' sorting to academic (Gymnasium) track schools.*

Lower status German families rely most on the potentially advantageous peer effects that early tracking offers, while more secure families do not. Longer joint schooling does not lead to negative peer effects for children in homogeneously high socio-economic status neighborhoods, where most children will attend academic schools. Longer joint schooling may even offer better peer effects than earlier sorting for these well-off families, an example of one of the reasons why secure insiders can have weak pro-reform preferences. By contrast, in neighborhoods where children have heterogeneous class and language-backgrounds, two additional years of joint schooling entails longer exposure to potentially adverse as opposed to advantageous peer effects for children of lower-status native parents. With early sorting with choice by contrast, these lower status children spend two more years in schools shared with relatively higher socio-economic status peers in academic schools.

Besides peer effects, longer joint schooling also reduces the “noise” of the signal that determines which schools students are sorted into, because it gives immigrant children's language skills and parents' social/cultural capital more time to catch up with that of native-born families. Immigrant children are more likely to be sorted to academic schools with longer joint schooling because their observable characteristics will converge to their academic abilities. Conversely, longer joint schooling without school choice means a higher threat of displacement from academic schools for children of relatively low status native-born German parents in places where sorting to academic

schools is scarce and where there are more immigrant children who may out-compete them for access with longer joint schooling.

**Hypothesis 3 (H3; peer effects & meritocratic signals):** *Precinct-level referendum support is higher in places where income is lower and where both shares of students who sort to academic schools is low and shares of immigrant children are high.*

Parents with academic educations are more capable of transmitting advantages inter-generationally through private household interactions, and have the social and cultural capital needed to navigate their children into academic schools even when sorting rules change. Parents with non-academic educations by contrast do not have these advantages (Bourdieu, 1984), which hurts their capacity to secure their children's access to academic schools without rights to veto teacher recommendations.

**Hypothesis 4 (H4; weak transmission):** *Parents of school-age children who did not attend academic schools themselves are more likely to support the referendum.*

Most immigrants in Germany have limited influence over electorally motivated politicians because they lack citizenship. Historically, German citizenship could only be inherited from one's parents (i.e. *jus sanguinis*). When a wave of "guest workers" (*Gastarbeiter*) immigrated to Germany in the second half of the twentieth century (Höhne et al., 2014), they had no political rights, nor did their children. This system was formally reformed in 2000, and more pathways to naturalization were created (Green, 2013). However, because this law prohibited dual citizenship, many immigrants remain non-citizens (Morjé Howard, 2008). An above OECD average 20% of present-day German residents are immigrants and their children, but only about half of immigrants who have lived there for over 10 years are naturalized, a figure below the OECD average (Sta, 2024). Political engagement among naturalized immigrants is also low (Goerres et al., 2025). Although parties like the Social Democrats promote their descriptive representation of Germans with migration-backgrounds, their policy positions are aimed at maintaining their electoral base of native-born Germans with greater electoral sway (Schmidtke, 2016). Limited enfranchisement and political engagement gaps give German politicians incentives to accommodate native-born rather than immigrant families' policy preferences on opportunity boundaries.

**Hypothesis 5 (H5; representation gaps & electoral incentives):** *Opposition politicians take positions that signal opposition to reform when marginal insiders' electoral influence is salient, despite the preferences of partisan elites.*

**Hypothesis 6 (H6; reformer punishment):** *Referendum support is expected to predict defection from pro-reform government parties to parties that campaign on opposition to reform.*

## 4 Data and Methodology

To test these hypotheses, I use administrative, survey, and archival data. Federal and state-level school enrollment data is used to test hypothesis 1 and 2. Precinct-level votes and city-district demographics published by Hamburg's statistical office are used to test hypothesis 3. An election study fielded among Hamburg residents is used to test hypothesis 4. Neighborhood- and micro-level data on voting behavior are complemented by media and partisan archival sources to test hypothesis 5 and 6.

### 4.1 Administrative Data

#### 4.1.1 Federal and State-Level: Student Enrollment Statistics

To test hypothesis 1 and 2, I use statistics on school enrollment published by the Federal Statistics Office of Germany *Statistisches Bundesamt*. Although this data is publicly available, my project offers a cleaner version of this data on native and immigrant enrollment across school tracks for use by other researchers.

#### 4.1.2 Hamburg-Level: Precinct-Level Voting and City-District Data

To test hypotheses on predictors of neighborhood-level voting for both the referendum and the snap election, I use data on precinct-level votes and city-district demographics from the Statistical Office of Hamburg and Schleswig-Holstein<sup>3</sup>. Non-overlapping precinct and city-district geographies are

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<sup>3</sup><https://statistik-nord.de/>

spatially merged using area-weighted shares to attribute demographic characteristics to precincts. Further details on this are provided in Appendix [B.2](#).

Precinct-level vote-weighted regressions are used to test hypotheses 3 and 6. To test hypothesis 3, precinct-level referendum vote shares are regressed on income, share of citizens with migration-backgrounds, and an interaction between share of immigrant children and share of assignment to post-reform comprehensive schools (*Stadtteilschule*). Precinct-level partisanship, share of *residents* with migration background, and overall share of children are included as controls. As one of two quantitative tests of hypothesis 6, precinct-level votes for the SPD in 2011 are regressed on referendum support, income, share of citizens with migration-background, share of children with migration-background, and share of assignment post-reform comprehensive schools, controlling for 2008 SPD votes.

## 4.2 Survey Data: Election Studies

To test hypothesis 4, survey-weighted logistic regressions are used on a Hamburg-specific election study run as part of the German Longitudinal Election Study project. Further details on this election study can be found in Appendix [B.3](#). Since the survey queried whether respondents had school-age children, referendum support by parents with school-age kids can be tested compared to the population of adult respondents. Since the survey also asks respondents' attitude towards immigration and redistribution, ideology on these dimensions can be controlled for as potential confounders. The key independent variable for testing hypothesis 4 is parents' educational background. Survey questions asked respondents what type of school leaving certificates they achieved, so parents' own non-academic as opposed to academic education backgrounds.

As one of two quantitative tests of Hypothesis 6, a separate election study on the 2011 snap election was used. This survey was conducted by Forschungsgruppe Wahlen, associated with German public broadcaster ZDF. This survey captures respondents' votes in the 2008 parliamentary election, whereas the GLES election study does not. Further details on this survey can be found in Appendix [B.4](#). Survey-weighted logistic regressions are run to test how referendum support



predicts micro-level support for parties in the 2011 snap election.

### 4.3 Archival Sources

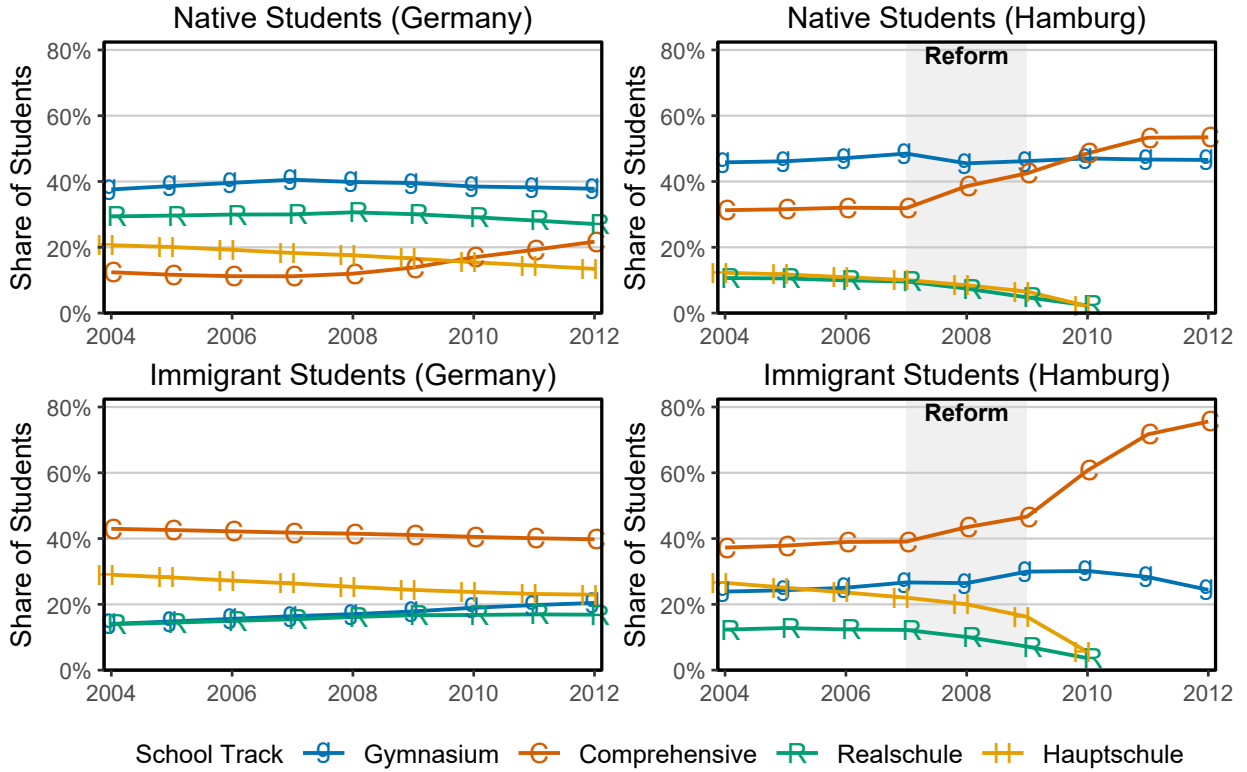
Qualitative observations on the referendum's politics were collected from media and partisan archives to test. To construct the case narrative for Section 3.2, I conducted a comprehensive search of reporting on the reform. To address selection bias (Lustick, 1996), sources were collected across a sampling frame that ranged from the beginning to the end of the reform period and across outlets that span left-right, populist-establishment, and local-national dimensions of the media market. To test hypothesis 5, evidence was collected from online archives maintained by Hamburg's Social Democratic Party and the office of its then leader, former Chancellor Olaf Scholz. Observing the SPD's political strategy facilitates systematic process analysis (Hall, 2003), because my theory and its alternatives have different expectations about partisan elites' expected positioning on the reform. Complementing dataset observations on voter behavior (Brady and Collier, 2010), these causal process observations provide a test of the mechanism implied by the theory.

## 5 Results

### 5.1 School Track Enrollment Trends: Hamburg vs. Other States

Consistent with H1 (fewer defenders), a lower share of native-born students attend intermediate *Realschule* in Hamburg just prior to the reform compared to other German states. The top two panels of figure 5 show the share of native-born lower secondary students who attend different school types across Germany (left) and in Hamburg (right). About 30% of native-born German students attend *Realschule* in the reform period. This share is roughly 10 percentage points below the share who attend academic *Gymnasium*, and significantly higher than the share who attend basic *Hauptschule* and comprehensive schools. By contrast, only about 10% of native-born students attend intermediate *Realschule* in Hamburg just before the reform, less than a quarter of the share

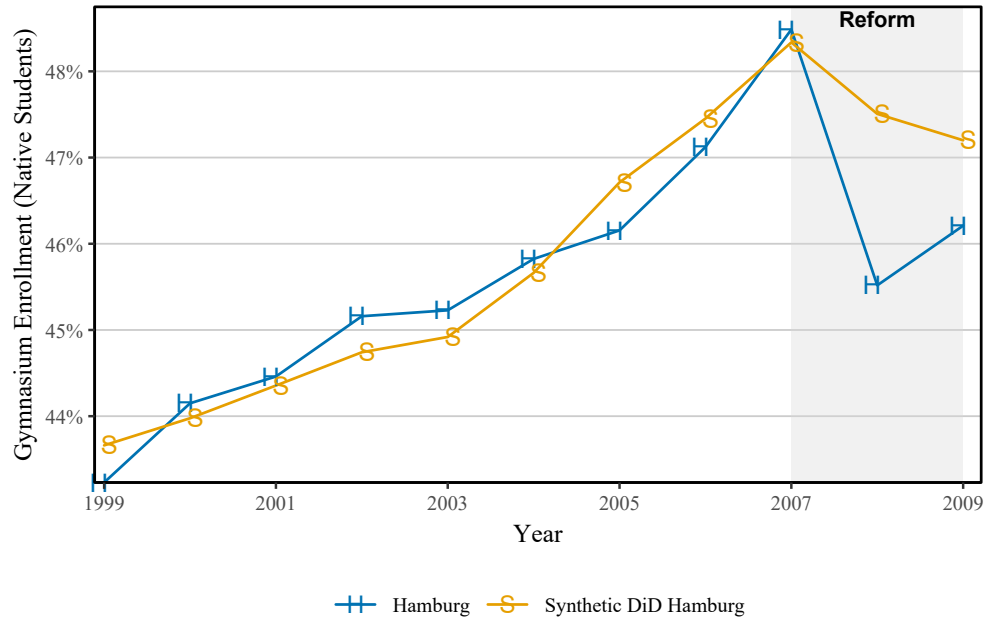
Figure 5: Shares of Students by Track: Germany vs. Hamburg; All vs. Immigrant Students



who attend academic *Gymnasium* and about the same share as attend basic *Hauptschule*. Bar plots in appendix C.1 compare native-born enrollment across tracks and states in the school year just before the Hamburg reform began, and shows that Hamburg has among the lowest share that attend intermediate *Realschule* and the highest that attend *Gymnasium*. This evidence is consistent with intermediate schools having fewer defenders: only a small and therefore politically ineffective set of families has motives to defend early-age sorting between intermediate *Realschule* and basic *Hauptschule* against reform, but a much larger group has motives to ensure the more secure access to academic *Gymnasium* that early age sorting confers.

Consistent with H2 (displacement threat), synthetic difference-in-differences estimates indicate that less native-born students in Hamburg attended academic *Gymnasium* in Hamburg after the reform began than in a counterfactual scenario where the reform had not, albeit with inconclusive precision due to statistical power limitations and heteroskedasticity across German states. Figure 5 shows more immigrant students sorted to academic *Gymnasium* schools after the reform was

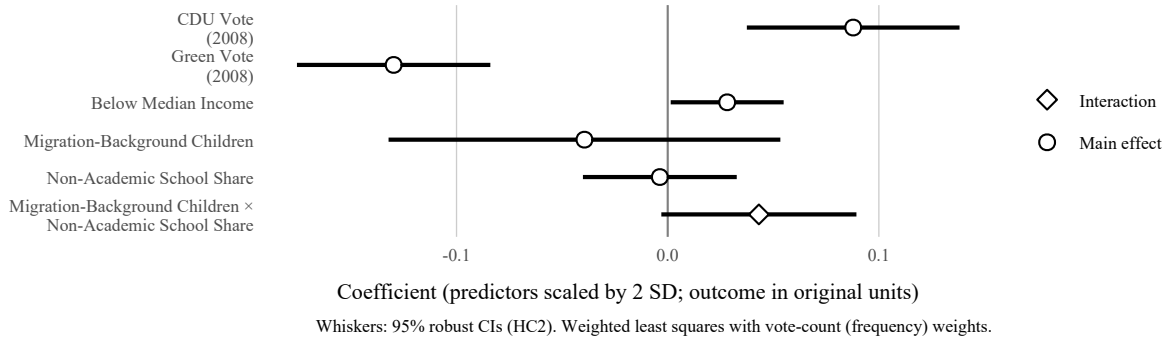
Figure 6: Native Gymnasium Attendance vs Synthetic DiD Control: Hamburg Reform Shock



initiated (bottom-right), while fewer native-born students sorted to academic schools (top-right). Synthetic difference-in-differences estimates suggest that the reform caused this decline rather than an alternative cause common to multiple German states. The gap between the two series in the shaded “Reform” area on the right side of figure 6 show that sorting to academic schools among native-born students declined more in Hamburg than in a counterfactual “Synthetic Hamburg” constructed from a level-differenced convex linear combination of native-born Gymnasium attendance shares in other German states that weren’t exposed to the Hamburg-specific reform. Although simulations indicate that this visually suggestive gap is estimated with insufficient precision to be statistically conclusive (95% CI  $[-4.5\%, +1.7\%]$ ), appendix C.2 gives evidence that this estimate of statistical uncertainty is overly pessimistic due to biases introduced by the lower volatility of native-born *Gymnasium* enrollment in Hamburg than among the states used to construct the synthetic counterfactual.

Evidence from enrollment data suggests fewer native-born parents in Hamburg rely on sorting between intermediate *Realschule* and basic *Hauptschule* tracks to secure opportunities for their children than in other states. At the same time, an elite-led structural school reform threatened

Figure 7: Vote-Weighted Regression: Predictors of Polling-Place Referendum Support



to displace some native-born families' children from sorting to academic *Gymnasium* schools. However, this does not show which families faced displacement threats or how this may influence support for the referendum that overturned reform. To investigate this, I test whether a measure for place-level displacement threats to families that lack private alternatives predicts precinct-level support for the referendum.

## 5.2 Precinct-Level Referendum Votes and City-District Demographics

Consistent with H3 (peer effects & meritocratic signals), support for the referendum is high in places with below median-income. Voters at precincts in areas with below median average income are more likely to vote for the referendum (95% CI [.0014, .0549]), as shown in figure 7. As the full table of results for this and alternative vote-weighted regression models reported in Appendix C.3 show, this result is statistically robust across specifications, while alternative measures of class-status like continuous place-level average income or income tercile are not. Side-by-side maps of precinct-level votes for the referendum and city-district (*Stadtteile*) average income in Appendix C.4 correspondingly show that the political geography of referendum support does not match straightforwardly with the economic geography of place-level high income, consistent with my argument but inconsistent with some prevalent alternative interpretations of the case. These results likely do not reflect a confounding relationship between income and partisanship because 2008 state-level parliamentary election party vote shares, mapped in Appendix C.4, were

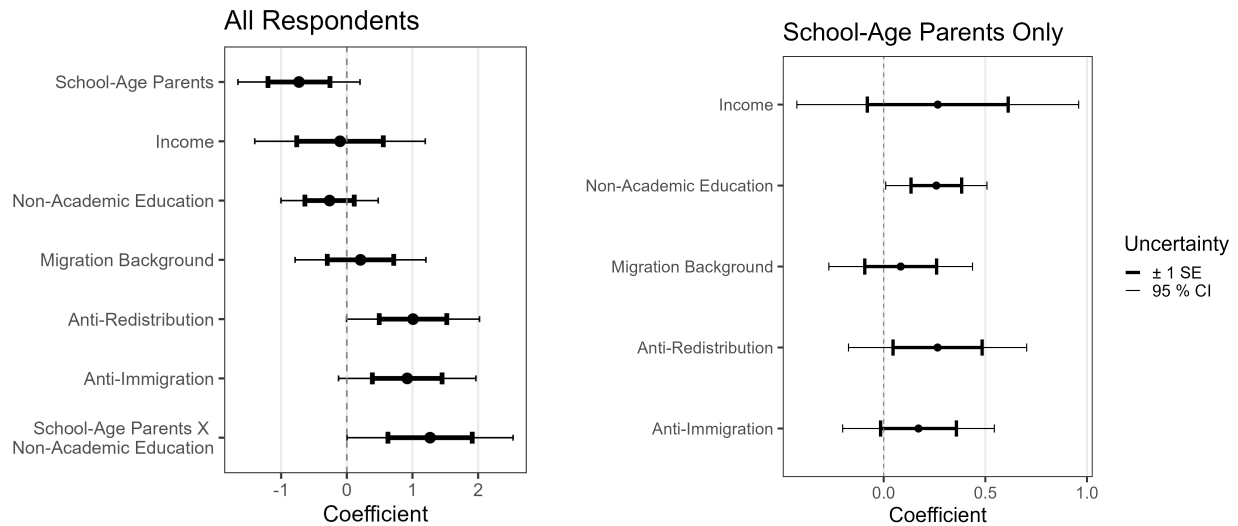
included in model specifications as controls.

Also consistent with H3 albeit with greater statistical and interpretive uncertainty, voters at *specific* precincts in areas with *especially* high shares of immigrant children and low shares of sorting to academic schools vote for the referendum at particularly high levels. On average, precincts in places with both high shares of immigrant children and low shares of student sorting to academic schools had higher support for the referendum, as suggested by the interaction term reported in figure 7. According to tests recommended by the relevant literature and as reported in appendix C.5 (Brambor et al., 2006; Hainmueller et al., 2019), this interaction effect should not be interpreted as a linear moderating effect of immigrant children shares on the relationship between academic school access and referendum support across the support of these factors. Rather, it is quantitative shorthand for a qualitative observation: support for the referendum was extraordinarily high among those who voted at specific precincts in places like Billbrook, the second largest industrial area in Hamburg, which has an exceptionally high share of immigrant children and low sorting to academic schools. Since voters were permitted to vote at precincts besides where they live (see appendix B.2) and most residents of Billbrook are non-voting immigrants, it's possible that this shows the referendum support of voters who worked at rather than lived in this industrial park, limiting the result's quantitative interpretability while simultaneously offering suggestive qualitative evidence for the argument's core claim on high expected referendum support among *lower* rather than *higher* socio-economic status native Germans in Hamburg.

As with the empirical tests with state-level enrollment shares, inevitable limitations on the interpretability and statistical precision of precinct-level analysis motivates further investigation on mechanisms that the argument expects explained referendum support. One such mechanism is how characteristics that limit parents' capacity to ensure their children's access to academic schools without boundary defense may lead them to vote for the referendum at the micro-level. Thus, I turn to a further test of how parents' characteristics predict their referendum support at the micro-level using survey data.

### 5.3 Micro-Level Predictors of Parents' Vote for the Referendum

Figure 8: Survey-Weighted Logistic Regression: Predictors of Referendum Support



Consistent with H4 (weak transmission), parents who did not attend academic schools were more likely to support the referendum. As shown in figure 8, self-reported political ideology suggestively predicts referendum support among survey respondents in general, but does not predict support with meaningful statistical certainty for parents. By contrast, parents are more likely to support the referendum when they lack an academic education with high certainty, as shown in the interaction term of the left panel of figure 8 and the unconditional effect in the parents-only model in the right panel, with coefficients and standard errors of all regressors being reported in appendix C.6.

Parents' higher support for the referendum when they lack academic educations themselves is consistent with the expectations of my theory's case-specific application, but not with interpretations of the referendum that attributed its success to the preferences of an educated upper-middle class. If my argument is correct, we should also observe its expectations in political behavior outside of referendum voting, such as in the campaign strategies of electorally-motivated politicians and in the voting behavior of referendum supporters in elections surrounding the referendum. Accordingly, I conduct a further test of my theory against its alternatives using archival observations drawn from the reform episode and referendum supporters voting-behavior at the precinct- and micro-level.

## 5.4 Politician and Voter Behavior in the Post-Reform Election

Consistent with H5 (representation gaps & electoral incentives), Hamburg's opposition Social Democrats (SPD) and its electorally-motivated leader Olaf Scholz opposed school reform with messaging aimed at winning referendum supporters' votes despite the preferences of partisan elites. Before the 2008 parliamentary election, Hamburg's SPD endorsed longer joint school (Ham, 2007), consistent with its historic advocacy for comprehensive schooling (Busemeyer, 2014; Giudici et al., 2023), including in Hamburg dating to the post-war period (Helbig and Nikolai, 2015). After the "We want to learn" movement's leader organized voters to punish pro-reform parties in non-referendum European parliament elections (Scheuerl, 2009), the Hamburg SPD's leader Olaf Scholz began vocally opposing parts of the government coalition's school reform such as its removal of parental choice (Scholz, 2009). He campaigned on improving the quality of schools in disadvantaged areas instead and suggested longer joint schooling could harm students in working class areas by increasing relative achievement gaps between them and students in wealthier neighborhoods (Scholz, 2009). While Scholz was accused by co-partisan media elites of supporting elitists against egalitarian reform (Füller and Repinski, 2010), he insisted that he opposed school reforms that could not win the approval of a warehouse worker or sales clerk who wanted the best opportunities for their children (Füller and Repinski, 2010).

While the SPD nominally opposed the referendum to overturn the government coalition's reform, it did so as a concession after securing a 10-year freeze on future structural school reforms and restoring parents' choice in negotiations with the governing coalition (Meyer, 2010), and while insisting that it would respect the referendum's democratic outcome. A pamphlet released by the SPD soon before the referendum took credit for negotiating the structural school reform freeze and restoring parents' rights to veto teacher recommendations while highlighting the party's alternative platform of reducing elementary school class sizes and creating more pathways to higher education at newly consolidated comprehensive schools (SPD Hamburg, 2010). Scholz's position contrasted with those taken by the leaders of the social-progressive Greens, who are less sensitive to electoral pressure because they govern as junior coalition partners together with

more electorally sensitive major parties. The Greens' national leader cast the referendum as necessary to secure equal opportunity for immigrant and lower-class children against elitists who wanted to insulate their children in privileged academic *Gymnasium* (Ozdemir, 2010). When the referendum passed, he pejoratively called it a victory for elites who didn't want their children to "play with dirty kids" (Walker, 2010). The Greens' leader in Hamburg, a leading advocate for the failed reform, called the day of the referendum a "shitty day" after it passed and vowed to "continue to fight for socially just schools" (Carini, 2010). By contrast, Scholz said it was "not a defeat" because "the people had decided" (Carini, 2010). He noted later that year that academic *Gymnasium* were no longer elite schools: they were the most popular and frequently chosen school type by parents, making their resistance to reforms that cause uncertainty about access to these schools comprehensible (Scholz, 2010). He justified his party's alternative policy platform of school quality improvements by arguing that they could appeal to status uncertain parents in disadvantaged areas (Scholz, 2010).

In campaigning for the snap election triggered by the government's collapse following the failure of its signature school reform, Scholz campaigned on a platform of "school peace", and "no new school experiments" despite the protests of co-partisan elites who remained ideologically committed to comprehensive schooling (Schielf, 2011). Scholz and the SPD went on to win in a landslide while the long-running governing Christian Democrats (CDU) lost fully half of their seats in parliament (Gordon Smith, 2011). Among the two governing coalition parties, 7 suggests the CDU in particular had taken a position misaligned with its 2008 voter base on school reform.

Consistent with H6 (reformer punishment), referendum supporters defected from other parties to support Olaf Scholz and the Hamburg Social Democrats in the post-referendum snap election. Figure 9 shows that precinct-level referendum support predicts support for the SPD in the 2011 snap election with high certainty and while controlling for 2008 SPD support. By contrast voters in precincts with higher average income and with more citizens with migration backgrounds were less likely to support the SPD in the 2011 election. At the micro-level, parents with school-age kids who supported the referendum were more likely to support the SPD. The interaction term in



Figure 9: Precinct-Level Predictors of SPD Support in 2011 Snap Election

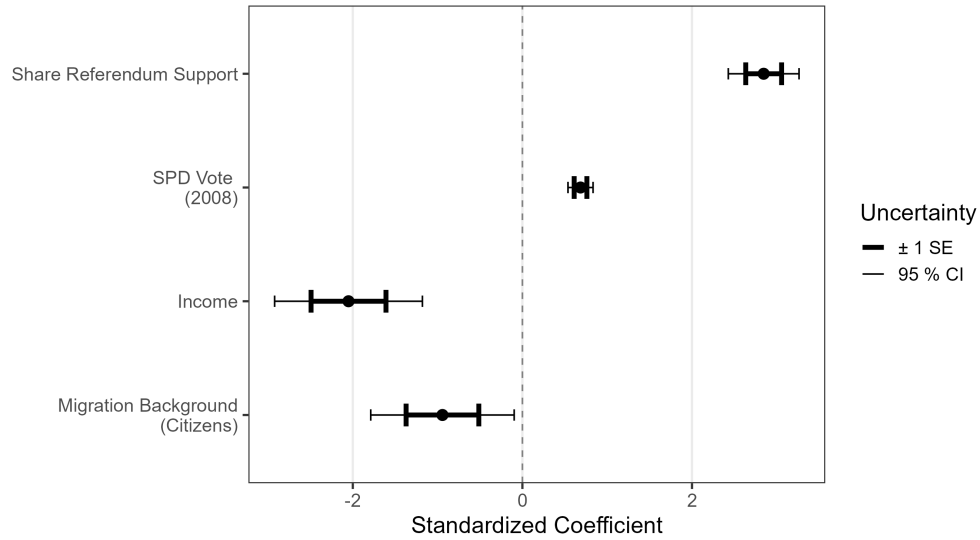


Figure 10: Micro-Level Predictors of SPD Support in 2011 Snap Election

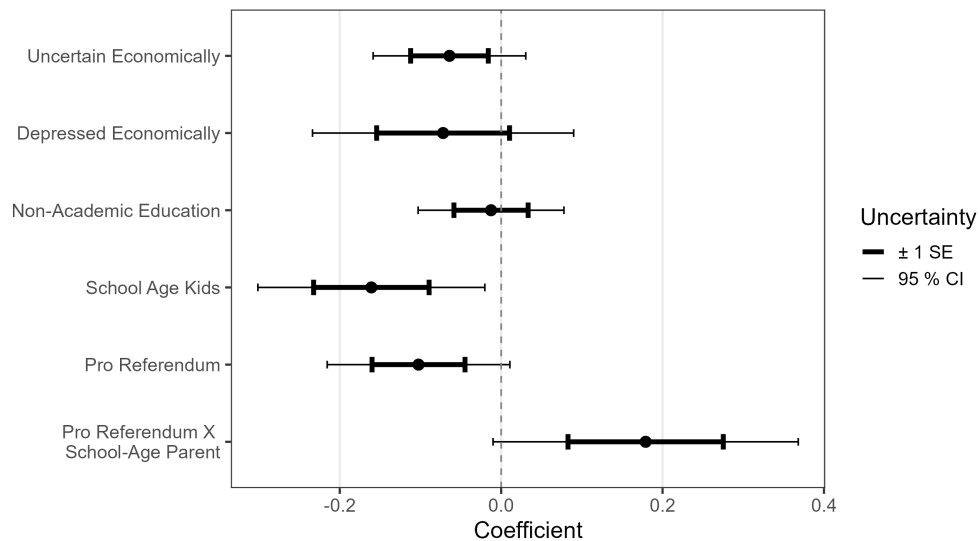


figure 10 shows that being a parent of school-age children predicts voting intention in the 2011 election with suggestive certainty, among a subset of respondents who did not vote for the SPD in the previous election.

## 6 Conclusion

This paper has shown that native-German families in Hamburg defended early sorting across schools by voting for a referendum that overturned reform and electorally punishing pro-reform incumbents. School enrollment data shows reform reduced native-born families certainty about their children's access to academic schools in a case where they were especially reliant on access to these as opposed to intermediate track schools that were consolidated with basic schools without controversy. Precinct-level referendum votes showed that referendum support in areas with below median income as well as in *specific* precincts where the share of students sorted to academic schools was low and the share of immigrant children was *particularly high*. Survey data showed that parents without academic educations themselves were more likely to vote for the referendum controlling for ideology, rather than well-educated members of the upper middle class. Finally, media and partisan archives showed that the Hamburg Social Democratic party under its leader Olaf Scholz took positions against structural school reform despite co-partisan elites' preferences. Both neighborhood and micro-level data on referendum supporters' 2011 votes showed that they rewarded Social Democrats while defecting from pro-reform government parties.

These results contradict previous interpretations of the Hamburg referendum. Contemporaneous reports characterized the movement against reform as elitist (Krupa, 2009), and attributed the reform's failure to elite dominance (Kahlcke, 2010), a view that subsequent academic literature has adopted (Bale, 2016; Apple and Debs, 2021). My results show instead that less academically educated parents and voters in less well-off neighborhoods were most likely to support the referendum. These voters punished pro-reform incumbents while rewarding politicians who took positions against reform. This suggests electorally-motivated politicians' responsiveness to lower- rather than higher-status voters among the group of relative insiders with representational advantages over outsiders without political voice explains the resilience of early tracking in the German case.

These results suggest more generally that elite domination theories cannot fully explain durable inequalities in rich liberal democracies. Well-off families have private alternatives to secure

against social risk (Hacker, 2004; Bussemeyer and Iversen, 2019). This mechanism should apply to opportunity boundaries, because opportunities can be bought in markets in rich democracies (Grusky et al., 2019). In the case of education for example, when opportunities conferred by public school systems are uncertain, well-off families can pay tuition at high cost private schools (Bussemeyer and Iversen, 2014), or bid up home prices in expensive neighborhoods where students are assigned by residence (Gingrich and Ansell, 2014).

Future studies can test whether boundary defense can explain the political resilience of policies that distribute opportunities unequally in policy contexts besides education and in cases outside of Germany. For example, labor market policy can promote unequal opportunities between insiders and outsiders, a phenomenon that previous literature calls labor market “dualism” (Rueda, 2005; Palier and Thelen, 2010). The theory of boundary defense introduced in this paper builds on both these theories and recent work on preference cleavages *within* broadly defined insider and outsider groups (Häusermann et al., 2015, 2023). Therefore, the predictions the theory implies about the politics of specific reform episodes can be tested against attempts to reform dual labor markets, especially where policies like employment protection foster durable inequalities between groups defined by social categories like migration-status (King and Rueda, 2008; Emmenegger et al., 2012; van Staaldin, 2022) and gender (Kurer and Van Staaldin, 2022; Gingrich and Kuo, 2022; van Staaldin and Zollinger, 2024). Likewise, the theory builds on insights from literature on how “boundaries” in the American case distribute access to schools unequally by de-facto segregated residence (Cashin, 2021; Adams, 2025) and access to credit unequally by race-laden risk categories (Thurston, 2018; Robinson, 2020), suggesting boundary defense may have applications to the politics of attempted reforms to redress durable racial inequalities in the American Political Economy (Thurston, 2021).

Future theory-building can also explore how marginal insiders may develop negative attitudes towards marginal outsiders perceived to threaten their status, which may complement material motives for boundary defense as an explanation for durable inequalities. Boundary defense should not be interpreted as mutually exclusive with explanations for discriminatory policy that

focus on how perceived threats foster negative symbolic attitudes towards social out-groups (Sears et al., 1979; Brewer, 1999). My theory builds on sociological literature that suggests material and symbolic motives for what sociologists have termed “social closure” (Weber, 2019; Parkin, 1974) are causally inter-related (Lamont and Molnár, 2002; Tilly, 2005). Consistent with this, my empirical results from the 2010 Hamburg referendum suggest that marginal insiders’ material and symbolic motives for defending boundaries are complementary rather than competing explanations. Although building theory on this relationship is beyond the scope of this paper, recent political science literature on this theme suggest fruitful avenues for future research. Recent studies have built on the more symbolic concept of boundaries and social closures in the sociological literature (Westheuser and Zollinger, 2025; Bornschieer et al., 2024), while suggesting these may complement rather than substitute material or structural explanations for political cleavages (Zollinger, 2024; Mierke-Zatwarnicki et al., 2025). Theories on the “declining” middle class suggest that material status threats can provoke negative symbolic attitudes towards social outgroups (Gidron and Hall, 2020; Kurer and Van Staalduinen, 2022). Future studies can explore how policy and reform-specific marginal insiders, which previous theories on social categories defined by broader status expectations might conceptualize as both “aspirational” (Iversen and Soskice, 2019) and “apprehensive” (Häusermann et al., 2023), may likewise develop negative symbolic attitudes towards marginal outsiders in response to material status threats posed by reform.

Finally, the theory of boundary defense can help normative theorists and political practitioners to better understand tensions between the ideals of liberal equality and democratic responsiveness in market societies, and thus to explore how such tensions might productively be addressed in liberal democratic politics. Late-career theories of foundational liberal thinkers suggest that the “right” conceptualizations of “democracy” and liberal “equality” not only can but must be reconcilable (Rawls, 2005; Dworkin, 2011). As with most cases where grand monist theories of normative everything meet the non-ideal circumstances of real politics (Forrester, 2012; Rossi and Sleat, 2014), boundary defense suggests that concepts of democracy and equality so defined

may drift implausibly far from the problems of everyday political practice. Democratic majorities may sometimes defend policies that violate the foundational norms of liberal societies. Yet, these undoubtedly harmful political acts may nonetheless express a need for economic security that democratic politics ought to be able to deliver. The politics of boundary defense suggests elite-led efforts to achieve equal opportunity through technocratic means face deep democratic constraints. Attempts to insulate opportunity reforms from democratic feedback through legal proscription nonetheless may have political consequences that undermine the very political foundations of liberal democratic orders, as the earth-shaking reactionary force of present-day populism might suggest. Political practitioners seeking more equal opportunity may therefore better achieve their aims, at least in the *longue durée*, by addressing the anxieties that economic transformations in market societies often provoke with adequate social policy solutions. For small-d democrats with egalitarian sympathies, the only real way through the problems of democracies are by means of democratic politics.

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## A Theory Supplement

### A.1 Marginal Insider Size as a Dimension of Boundary Defense Politics

My theory on the politics of boundary defense can be formalized with a simple additive model of democratic politics. Three groups of actors have motives to contest policies that distribute opportunities unequally across groups (see figure 1 in the main text). Three parameters  $(\gamma, \rho, \delta)$  represent factors that influence these groups' relative influence over the democratic politics of boundary defense. *Marginal insiders* (MI) defend opportunity boundaries because they lack alternative strategies to secure their uncertain status prospectively; their opposition to reform is intense and normalized to 1. *Secure insiders* (SI) have private alternatives to boundary defense and prefer reform more weakly than MIs favor it because of potential efficiency benefits with preference intensity represented by  $\gamma \in [0, 1]$ . *Marginal outsiders* (MO) who would benefit from reform favor it as strongly as MIs oppose it (1), but their political voice is discounted by representation gaps such that their influence on politics can be represented by  $\rho \in [0, 1]$ .

Section 2.2 in the paper's main text explores how the political fortunes of boundary defense depends on  $\gamma$  and  $\rho$ , as well as how the size of policy-specific MI groups condition these factors' influence. Much like these first two parameters that define groups' relative political influence however, the size of the marginal insider group that depends on defending a specific boundary to secure status prospectively can be represented with a third continuous parameter  $\delta \in [0, 1]$ . Marginal insiders and marginal outsiders have equal sizes  $2\delta$  since marginal outsiders' upward mobility depends on marginal insiders' status displacement. The combined size of the insider group in this model is fixed at two, with marginal insiders and secure insiders being mutually exclusive groups. Marginal insiders (MIs) are insiders that lack private alternatives to boundary defense, while secure insiders are the remainder of insiders that do, so the size of the secure insider group is  $2 - (2\delta) = 2(1 - \delta)$ . The democratic politics of boundary defends turns on the balance of these groups sizes, weighted by factors that condition their political influence: Relative intensity of preferences for reform represented by  $\gamma$  in the case of secure insiders (SIs), and relative political voice represented by  $\rho$  in the case of marginal outsiders (MOs). In brief then:

$$\underbrace{2\delta}_{\text{MI}} = \underbrace{2(1 - \delta)\gamma}_{\text{SI}} + \underbrace{2\delta\rho}_{\text{MO}}$$

Boundary defense succeeds politically when marginal insiders (MI) on the left side of the inequality outweigh the political influence of the pro-reform coalition of secure insiders (SIs) and marginal outsiders (MOs) on the right side of it.

This model formalizes two core claims of the theory of boundary defense. First, elites (SIs) are not the main defenders of policies that reinforce unequal opportunities, because they lack strong motives to defend boundaries given their access to private alternatives. If anything the theory suggests they may be a *weakly* pro-reform constituency. Exceptions include cases where their pro-reform preferences ( $\gamma$ ) are intense, or when readily accessible private alternatives make their size  $(2(1 - \delta))$  especially large. Second, institutions that shape the availability of private alternatives influence which specific boundaries are politically resilient, entering the model through the policy-specific parameter  $\delta$ , which is large when institutions mean insiders lack strategic alternatives to defending a policy against reform to secure their uncertain status. An

absence of private alternatives simultaneously increases the size of the anti-reform MI group and the pro-reform MO group while shrinking the pro-reform SI group. Settings where many families lack private alternatives to defending a specific policy against reform (larger  $\delta$ ) tilt the political field in favor of boundary defenders, unless outsiders are fully represented politically ( $\rho = 1$ ).

## A.2 Boundary Defense in 3D: Visualizing the Formal Model

Figures in section 2.2 of paper’s main text visualize the politics of boundary defense in the two-dimensional space of  $\gamma$  and  $\rho$  at specific levels of  $\delta$  that define the size of the marginal insider group. In figure 2, the size of the three groups of actors are equal. This is true when  $\delta = 1/2$ . Plugged into the equation above, the margin of political success for boundary defense versus reform is defined by

$$\begin{aligned} \underbrace{2\delta}_{\text{MI}} &= \underbrace{2(1-\delta)\gamma}_{\text{SI}} + \underbrace{2\delta\rho}_{\text{MO}} \\ \delta = 1/2 \implies 2(1/2) &= 2(1-1/2)\gamma + 2(1/2)(\rho) \\ \gamma + \rho &= 1 \\ \rho &= 1 - \gamma \end{aligned}$$

The final line summarizes the politics of boundary defense when the size of the marginal insider group is  $2(\delta) = 1$  as a 2D line with  $\rho$ -axis intercept 1 and slope  $-1$  which divides a two-dimensional space of opportunity boundary politics into areas of successful boundary defense and successful reform as shown in figure 2. Where the combination of  $\gamma$  and  $\rho$  are larger than at the level this “political margin” defines, as in the top right of figure 2, where  $\gamma + \rho > 1$ , then reform succeeds. Otherwise, in the bottom left of figure 2, boundary defense succeeds.

Likewise, in figure 3 the size of the secure insider group is three times that of the marginal insider and outsider groups. Given a fixed size of the total insider group of 2 by assumption, this is true when  $\delta = 1/4$ . In this case, the political margin of boundary politics is defined by:

$$\begin{aligned} \underbrace{2\delta}_{\text{MI}} &= \underbrace{2(1-\delta)\gamma}_{\text{SI}} + \underbrace{2\delta\rho}_{\text{MO}} \\ \delta = 1/4 \implies 2(1/4) &= 2(1-1/4)\gamma + 2(1/4)(\rho) \\ (3/2)\gamma + (1/2)\rho &= (1/2) \\ \rho &= 1 - 3\gamma \end{aligned}$$

In this new setting, the politics of boundary defense is likewise summarized by a 1-dimensional line in two-dimensional space and a  $\rho$ -axis intercept of 1, albeit now with a slope  $-3$  which divides the space into zones of boundary defense and reform success as in figure 3. With a continuous parameter that defines the size of the marginal insider group  $\delta$ , we can generally characterize the margin at which the politics of opportunity boundaries sits at the exact knife’s edge where the

political forces for and against reform are perfectly balanced:

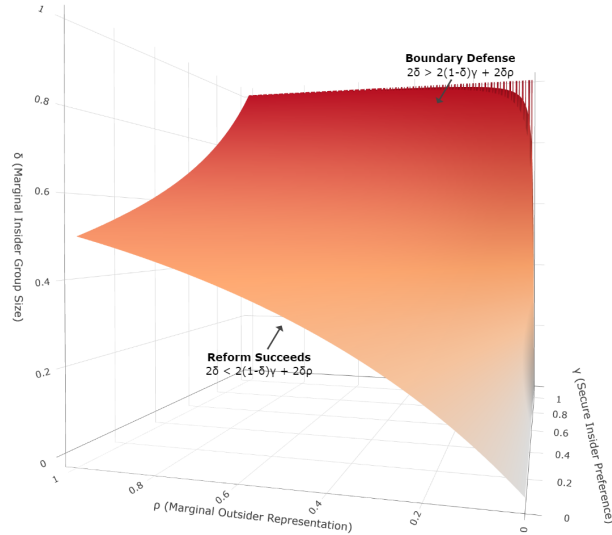
$$\begin{aligned}
 \underbrace{2\delta}_{\text{MI}} &= \underbrace{2(1-\delta)\gamma}_{\text{SI}} + \underbrace{2\delta\rho}_{\text{MO}} \\
 \Rightarrow 2\delta - 2(1-\delta)\gamma - 2\delta\rho &= 0 \\
 \Rightarrow m(\gamma, \rho, \delta) &= 0
 \end{aligned}$$

That is, where a function of  $(\gamma, \rho, \delta)$  that defines the margin of victory for boundary defenders  $m(\gamma, \rho, \delta) = 0$ , where the coalitions of boundary defenders and reformers are perfectly balanced.

Just as we can define a function  $\rho(\gamma)$  that characterizes the one-dimensional “surface” in two-dimensional space where  $m(\gamma, \rho) = 0$ , as shown for fixed  $\delta = 1/2$  and  $\delta = 1/4$  by functions  $\rho(\gamma)$  with first-derivatives or “slopes” of  $\frac{\partial \rho(\gamma)}{\partial \gamma}$  of  $-1$  and  $-3$ , we can also define a function  $\delta(\gamma, \rho)$  that characterizes the two-dimensional surface of this political knife’s edge in the three-dimensional space of opportunity boundary politics. Re-arranging terms from the function described above:

$$\begin{aligned}
 m(\gamma, \rho, \delta) &= 0 \\
 2\delta - 2(1-\delta)\gamma - 2\delta\rho &= 0 \\
 2\delta - 2\gamma + 2\delta\gamma - 2\delta\rho &= 0 \\
 2\delta(1 + \gamma - \rho) &= 2\gamma \\
 \delta &= \frac{\gamma}{(1 + \gamma - \rho)}
 \end{aligned}$$

Figure 11: Boundary Defense in 3D



This planar political margin  $\delta(\gamma, \rho)$  is visualized in figure 11. When  $m(\gamma, \rho, \delta) > 0$  above this political margin in the  $\delta$ -dimension (see section A.3), then boundary defense succeeds. When

$m(\gamma, \rho, \delta) < 0$  below this margin then the pro-reform coalition outweighs marginal insiders in democratic politics and reform succeeds instead<sup>4</sup>. Just as a one-dimensional line can visualize the margin of political success in the two-dimensional space of boundary defense politics summarized in section 2.2, a two-dimensional planar margin can visualize the margin of political success in the three-dimensional space of boundary defense politics.

At any level of  $\delta$  fixed by institutional context, the politics of boundary defense can be visualized on a two-dimensional plane in the  $\gamma$  and  $\rho$  dimensions. In these settings, the margin of political success is defined where the planar margin defined by  $\delta(\gamma, \rho)$  shown in figure 11 meets a flat two-dimensional plane  $\delta = c$ , at a one-dimensional line. This line is what figures 2 and 3 visualize as the one-dimensional political margin that divides boundary defense and reform success. Gradual institutional change (Mahoney and Thelen, 2009) can expand the availability of alternatives to boundary defense and thus reduce the size of the policy-specific group of marginal insiders ( $\delta \downarrow$ ). The result is a steady shift in the one-dimensional line that defines the political margin of boundary defense in the two-dimensional political “flatland” (Abbott, 1884) that “marches” down the  $\delta$ -dimension of figure 11 from top to bottom, intersecting with  $\delta(\gamma, \rho)$  at a shifting one-dimensional line that shrinks the proportion of the flat two-dimensional  $(\gamma, \rho)$  plane where boundary defense succeeds. When the plane has descended down the  $\delta$ -axis to a sufficient degree, any point on the flat  $(\gamma, \rho)$  space can change from being above (boundary defense) to below (reform success) the planar political margin  $\delta(\gamma, \rho)$ : reform can succeed in democratic politics where it previously had not.

As argued in section 3.3 and defended in section 5.1 of the main paper’s text, this is the case with declining dependence on sorting to intermediate *Realschule* among native-born families in Hamburg, leading to successful reform as visualized in figure 4, even as  $\delta$  has remained more fixed in the alternative institutional setting of early age sorting to academic *Gymnasium*.

### A.3 Some Formal Properties of Three-Dimensional Boundary Politics

Although a full exploration of this model’s properties are beyond the scope of this paper, I outline a few comparative statics nonetheless to generate intuition on the model’s implications and suggest directions for future research. First, I consider how changes to parameters (which can represent variation or changes in institutional context) change the margin of electoral success for boundary defenders as defined by  $m(\gamma, \rho, \delta) = 0$ . Recall that

$$m(\gamma, \rho, \delta) = 2\delta - 2(1 - \delta)\gamma - 2\delta\rho = 2[\delta(1 - \rho + \gamma) - \gamma]$$

Thus,

$$\frac{\partial m}{\partial \delta} = 2(1 - \rho + \gamma) \geq 0$$

---

<sup>4</sup>Note that this “above” and “below” is reversed to that of the  $\rho$ -dimension in figures 2 and 3. This is because  $\rho$  and  $\gamma$  are defined straightforwardly so  $\frac{\partial m(\rho, \gamma)}{\partial \gamma} > 0$ ,  $\frac{\partial m(\rho, \gamma)}{\partial \rho} < 0$ . This is not the case for  $\delta$ . However, the model can be re-parameterized with a function  $s(\delta)$ , the size of the secure insider group, such that boundary defense is most successful at the origin  $(0, 0, 0)$  and reform most successful at  $(1, 1, 1)$  as in the corners of figures 2 and 3. This is left to the reader, because the size of the marginal insider group  $\delta$  is the key theoretical parameter of interest for this extension of the model in three dimensions.

Per the visual intuition offered by figure 11, except in the knife's edge case where  $\rho = 1$  and  $\gamma = 0$ , when marginal outsiders are perfectly represented and secure insiders are completely indifferent to reform, increases in the size of the marginal insider group will increase the likelihood that boundary defense succeeds politically. Various factors may cause this, whether a disappearance of previously available private alternatives, or changing perceptions of uncertainty in times of structural economic transition that are uncompensated by risk-mitigating social policy (Friedman and Iversen, 2024).

$$\frac{\partial m}{\partial \gamma} = 2(\delta - 1) \leq 0$$

Intuitively, secure insiders' greater enthusiasm for reform undermines the political prospects for boundary defense, albeit with less significance as the size of the marginal insider group increases and the size secure insider group declines by implication, when fewer families relatively have access to private alternatives.

$$\frac{\partial m}{\partial \rho} = -2\delta \leq 0$$

Intuitively, improving outsiders' political representation undermines the political prospects for boundary defense. It does so more sharply as the by assumption equal size of the marginal insider and outsider groups increase. The sign of this cross-partial in delta is opposite to that for  $\rho$ , or formally:

$$\frac{\partial^2 m}{\partial \gamma \partial \delta} \geq 0; \frac{\partial^2 m}{\partial \rho \partial \delta} \leq 0$$

These are only basic comparative statics of a simple additively separable model of democratic politics. Future work can explore other properties of this model, including its properties when some of the fairly strict assumptions embedded into it are relaxed (e.g., where the size of marginal insider and outsider groups are not identical, even if functions of one another). Theoretically motivated avenues worth exploring also include cases where  $\delta$ , the size of the marginal insider group is made endogenous to factors inside or outsider of the model. Such factors can include the presence or absence of other opportunity boundaries that allow actors to secure the functional goal of securing status (e.g. a system of functions  $\delta_i$ ). Intuitively for example, the presence or absence of private alternatives in one policy arena may shape actors preferences in other policy arenas. This intuition is already embedded in recent theoretical contributions to the literature on private alternatives to the social policy state (Gingrich and Ansell, 2012; Bussemeyer and Iversen, 2019; Wiedemann, 2021). It may also be read into recent contributions to the literature on policy feedback, which theorize on "cross-domain" feedbacks (Brown, 2024; Wang and Zhang, 2025).

The idea that the size of the marginal insider group is politically endogenous is an avenue worth exploring beyond the context of private alternatives, because one of the main mechanisms that drives prospects for reform that broadens opportunity access in this model are changes to the set of alternatives that families have which mitigate their need for boundary defense as a means to secure their status against uncertainty. Granted that motives to reduce uncertainty are basic to human psychology, the political feasibility and normative desirability of strategies that attempt to end run around these motives through technocratic reform seem dubious. Instead, solutions may need to be found that directly reduce  $\delta$ , by offering marginal insiders forms of becoming "secure" that do not raise normative concerns with weightiness that countervails the obvious abhorrence of outsiders' durable exclusion from good life chances. One such example would be social policies

targeted to marginal insiders, even if these might seem “unfair” according to certain norms that some believe to be essential to liberalism. I discuss these themes in the main text’s conclusion.

## B Data and Methods Supplement

### B.1 Referendum Ballot

Figure 12: Example Ballot

**Stimmzettel zum Volksentscheid  
am 18. Juli 2010 über die Schulreform**

Sie haben für jede der beiden Vorlagen eine Stimme.

<p><b><u>Vorlage der Volksinitiative „Wir wollen lernen!“</u></b> - für den Erhalt des Elternwahlrechts in Klasse 4 und der weiterführenden Schulen ab Klasse 5:</p> <p>Ich fordere die Bürgerschaft und den Senat der Freien und Hansestadt Hamburg auf, eine Ausgliederung der Klassen 5 und 6 aus den Gymnasien und anderen weiterführenden Schulen und deren Anbindung an die Grundschulen als „Primarschulen“ zu unterlassen.</p> <p>Denn ich bin dafür, dass die Hamburger Gymnasien und weiterführenden Schulen in der bisherigen Form, d. h. beginnend mit der Unterstufe ab Klasse 5, erhalten bleiben und die Eltern auch in Zukunft das Recht behalten, die Schulform für ihre Kinder nach der Klasse 4 zu wählen.</p> <p>Ich fordere deshalb Senat und Bürgerschaft auf, das Zwölfte Gesetz zur Änderung des Hamburgischen Schulgesetzes vom 20. Oktober 2009 (HmbGVBl. S. 373) zu diesen beiden Punkten unverzüglich rückgängig zu machen.</p> <p style="text-align: right;"><b>Stimmen Sie dieser Vorlage der Volksinitiative „Wir wollen lernen!“ zu?</b></p> <div style="text-align: right;"><b>JA</b> <b>NEIN</b> <input type="radio"/> <input type="radio"/></div>	<p><b><u>Vorlage der Bürgerschaft:</u></b></p> <p><b>„Für eine bessere Schule“</b></p> <p>Ich bin für eine bessere Schule in Hamburg, die gerechter und leistungsfähiger ist.</p> <p>Ich unterstütze das längere gemeinsame Lernen in der Primarschule und das Elternwahlrecht nach Klasse 6.</p> <p>Ich unterstütze die einstimmige Entscheidung der Bürgerschaft vom 3. März 2010.</p> <p style="text-align: right;"><b>Stimmen Sie dieser Vorlage der Bürgerschaft zu?</b></p> <div style="text-align: right;"><b>JA</b> <b>NEIN</b> <input type="radio"/> <input type="radio"/></div>
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**Ballot Text:** *“Ich fordere die Bürgerschaft und den Senat der Freien und Hansestadt Hamburg auf, eine Ausgliederung der Klassen 5 und 6 aus dem Gymnasien und anderen weiterführenden Schulen und deren Anbindung an die Grundschulen als ”Primarschulen” zu unterlassen. Denn ich bin dafür, dass die Hamburger Gymnasien und weiterführenden Schulen in der bisherigen Form, d. h. beginnend mit der Unterstufe ab Klasse 5, erhalten bleiben und die Eltern auch in Zukunft das Recht behalten, die Schulform für ihre Kinder nach Klasse 4 zu wählen. Ich fordere deshalb Senat und Bürgerschaft auf, das Zwölfte Gesetz zur Änderung des Hamburgischen Schulgesetzes vom 20. Oktober 2009 (HmbGVBl. S. 373) zu diesen beiden Punkten unverzüglich rückgängig zu machen.”*



## B.2 Spatial Merge: Referendum Precincts and City-Districts

The web-portal for the regional statistical office of Hamburg (Statistik-Nord) offers data on polling place-level in-person votes on referenda <sup>5</sup>. On July 18th 2010, a citizen's initiative was held in the city-state of Hamburg to decide on whether to amend the Hamburg School Law of October 2009 to reject prolonged comprehensive schooling and maintain parental veto rights.<sup>6</sup> To vote, citizens were allowed to either vote by mail, or to vote in-person at a polling place. Citizens who voted by mail sent or dropped off their ballots to a district-specific collection point. Although citizens voting in person were allowed to vote at any polling place, they were assigned to polling place close to their home address in a mail packet that also included a mail-in ballot. For the purposes of this (version of the) paper, it is assumed that vote totals at polling places reflect unbiased estimates of voting behavior on the referendum within polling-place assignment geographies.<sup>7</sup> For each polling place, total voters, yes, no, and invalid votes are recorded. There were 201 polling places in the city-state of Hamburg at which voters could cast their ballot in the 2010 education reform referendum.

Since addresses of polling places and boundaries of polling place assignment zones are not available in the polling-place level data for the 2010 referendum, polling place numbers were used to match 2010 referendum polling places to data on a future referendum including polling place addresses and assignment boundaries, allowing 2010 referendum votes to be geo-located. First, polling places names and numbers were matched to polling places from the 2015 referendum, for which data on both polling place addresses and assignment boundaries are available. Polling places were nearly identical for the 2010 and 2015 referendum except for the loss of one polling place. Thus 2015 polling places and geographies are used for geo-location, with the single discontinued 2010 polling place being consolidated in data analysis with the 2015 polling place assignment area containing its geo-located address. For exact polling place geo-locations, the Google Maps API was used to obtain geo-coordinate for each address. For polling-place assignment geographies, Inkscape was used to convert a vector graphic of 2015 referendum results from an official Statistik-Nord map application reporting 2015 referendum votes into a drawing exchange format compatible with GIS applications. QGIS was then used to hand-match vector points of the resulting map of Hamburg polling places to reference points for Hamburg's borders, allowing for exact geo-location of polling-place assignment boundaries for the purposes of matching to city district demographic boundaries by spatial overlap.

The city of Hamburg is divided into 97 *Stadtteile* (City districts). As part of an annual release posted to their data portal, Statistik-Nord publishes detailed demographic characteristics and (non-referendum) election returns for these districts. Demographic characteristics reported include mean income of taxpayers, share of immigrants, share of residents with migration background (including citizens), share of residents the age of 18, share of immigrants under the age of 18, and

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<sup>5</sup><https://www.statistik-nord.de/wahlen/wahlen-in-hamburg/volksentscheide/-/referenden/2010>

<sup>6</sup>A future version of this paper will contain full referendum text and an image of the ballot in the Appendix

<sup>7</sup>This assumes that the distribution of voting preferences between in-person and mail-in voters was uniform, and that in-person voters did not systematically vote at polling-place levels different than the one they were assigned to. Since data is available on the mail-in votes at the less granular district (Bezirke) level, and survey data includes micro-level self-reporting on whether citizens voted by mail or in person, a future version of this analysis will test the balance of micro-level characteristics and voting preferences between mail-in and in person voters to test the plausibility of this assumption.



share of students in the district who are assigned to city-district schools.<sup>8</sup> Election returns by party selection for each of these districts are also available for state, local, and national elections.<sup>9</sup> For the purposes of geo-locating city-district boundaries, an official shape files of city-districts boundaries is obtained from Hamburg's official geo-data portal.

### **B.3 GLES Hamburg 2011 State Election Study**

As part of a larger German Longitudinal Election Study with an online-access-panel, long-term panel members residing in Hamburg were recruited to study political attitudes in proximity to the 2011 Hamburg Parliamentary Election. (GLES, 2015)<sup>10</sup>. Among other questions, the public opinion survey solicited respondents' recalled vote for or against the referendum that restored early tracking, citizens attitudes specifically about delaying tracking from grade 6 to grade 4, and a variety of demographic and ideological characteristics. The survey also includes survey-weights accounting for sampling biases by gender, age, and education.

### **B.4 Forschungsgruppe Wahlen State Election in Hamburg 2011**

Rather than actual self-recalled voting, this survey solicits respondents' personal opinion on the referendum.<sup>11</sup> Additionally, this dataset also queries' respondents recalled vote in the 2008 state parliamentary election and the 2011 state parliamentary election, which allows for testing hypotheses on how opposition to the referendum relates to changing partisan vote towards parties with different positioning on the referendum among referendum supporters. As with the previous dataset, income and non-"abitur" educational qualifications are used to operationalize expected threat from a change in tracking.

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<sup>8</sup>A future version of this paper will describe operationalization decisions entailed in using each of the specific data-points provided in this dataset

<sup>9</sup>Currently, these city-district level party vote shares are used for analysis involving non-referendum polling-place level election outcomes. A future version of this paper will instead match polling-place level votes on other elections to polling-place level votes on referenda – by proximity or assignment zone inclusion since polling places across these vote-types are non-overlapping.

<sup>10</sup>Rattinger, Hans; Roßteutscher, Sigrid; Schmitt-Beck, Rüdiger; Weißels, Bernhard; Bieber, Ina; Bytzeck, Evelyn; Scherer, Philipp (2015): Langfrist-Online-Tracking zur Landtagswahl Hamburg 2011 (GLES 2009). GESIS Datenarchiv, Köln. ZA5331 Datenfile Version 3.0.0, doi:10.4232/1.12393.

<sup>11</sup>[https://search.gesis.org/research\\_data/ZA5623?doi=10.4232/1.11466](https://search.gesis.org/research_data/ZA5623?doi=10.4232/1.11466)

## C Results Supplement

### C.1 Native-Born Enrollment in *Gymnasium* vs *Realschule*, State-Level

Figure 13: Share of Students Attending *Realschule* by State (2007-2008 School Year)

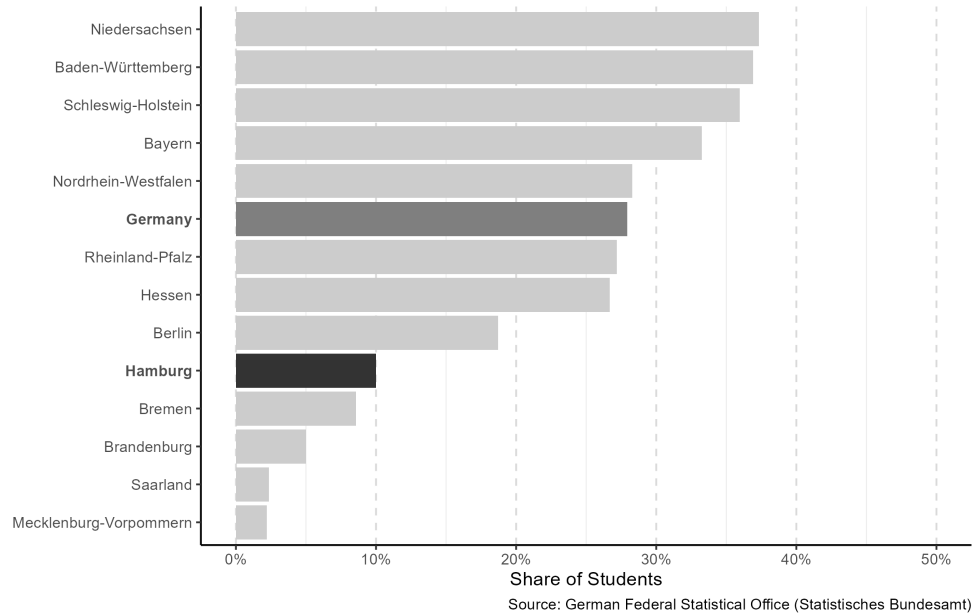
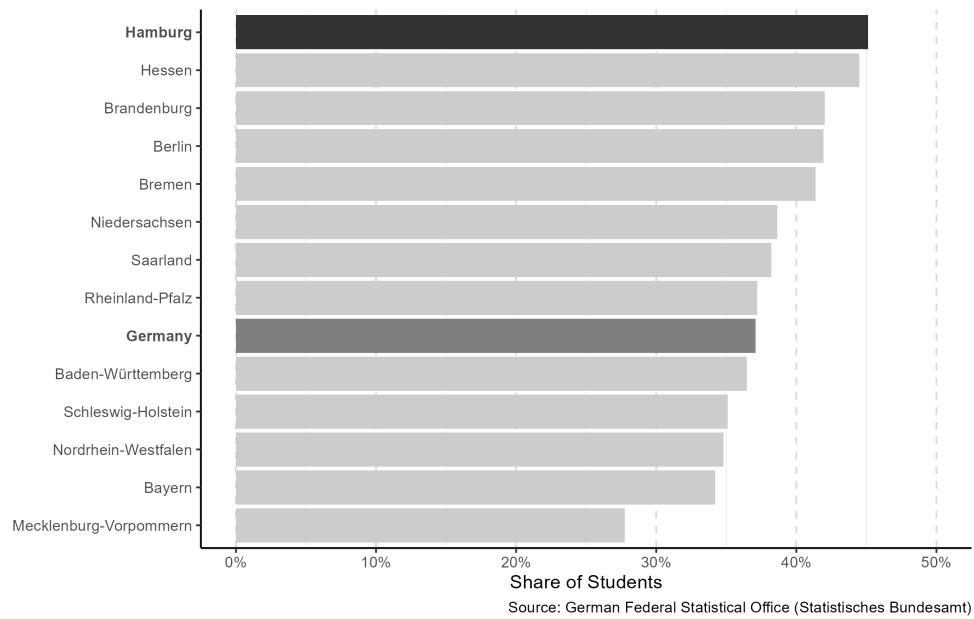


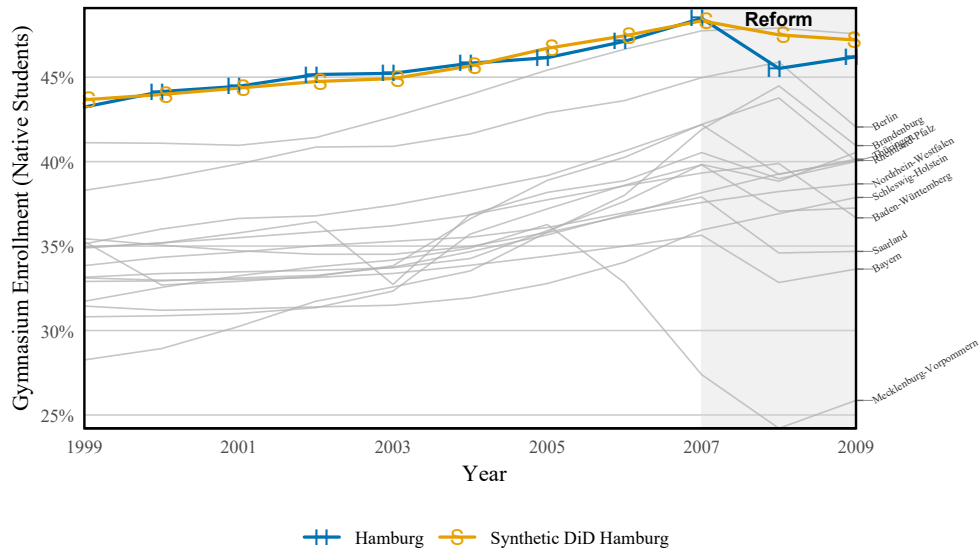
Figure 14: Share of Students Attending *Gymnasium* by State (2007-2008 School Year)



## C.2 Synthetic DiD: Hamburg Native Gymnasium Attendance

I use a synthetic difference-in-differences estimator to measure how native students' access to academic schools was affected by the reform in Hamburg to test H2. Besides being theoretically motivated as detailed in section 3.3, this offers a causally identified test for the significance of an apparent relative decline in the share of native students who attend academic *Gymnasium* schools in Hamburg during the reform period (figure 5). Generically, synthetic controls estimators allow treatment effects to be measured even in cases where only a single unit is treated by creating a “synthetic” counterfactual for the treated unit’s trajectory *without* exposure to treatment, using the convex combination of a set of untreated “donor” units (Abadie et al., 2015). While this estimator allows researchers to make less implausible assumptions about data-generating processes than alternative difference-in-differences (DiD) estimators (Xu, 2017), they can struggle to construct plausible counterfactuals for treated units that are significant outliers as measured by the outcome of interest. While DiD estimators can embed assumptions about data that are poorly motivated by research design (Imai and Kim, 2021), they do have the alternative advantage of accommodating large level differences between treatment and control units. Methodologists in the field of economics have recently introduced an estimator that embeds comparative strengths of both synthetic control and DiD estimators while addressing their relative weaknesses: the synthetic difference-in-differences estimator (Arkhangelsky et al., 2021).

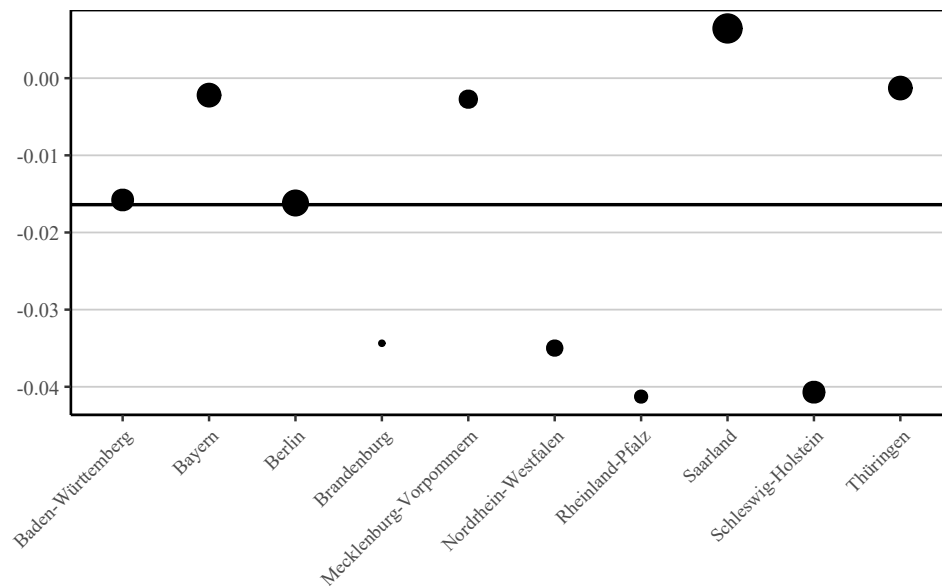
Figure 15: “Spaghetti” Plot: Hamburg vs Other States, Native Gymnasium Attendance



Synthetic difference-in-differences (SDiD) estimators are ideal for measuring effects of treatments on units that are outliers in outcomes, such as Hamburg in the case of native students' *Gymnasium* attendance. Since synthetic controls create counterfactuals from “convex combinations” of untreated units, they struggle where treated outcomes lie outside the range of values that convex linear combinations of donor units can attain; outside, in technical terms, of their “convex hull” (Arkhangelsky et al., 2021). As the bar plot in Appendix C.1 shows, Hamburg had the highest share of native students who attended academic *Gymnasium* across all German states just prior the the “treatment”, meaning the reform. To provide context and show the limits of standard synthetic

controls estimators, figure 15 plots the treated outcome of native *Gymnasium* attendance in Hamburg and the synthetic Hamburg created by the *SDiD* method against time-series of non-treated units, in what the literature calls a “spaghetti plot”. With standard synthetic controls, Hamburg’s persistent position at the maximum of all units’ in the outcome poses a thorny empirical problem: because they all have lower values of the outcome, no convex linear combination of the donor can be used to construct a plausible synthetic counterfactual for Hamburg. With synthetic difference-in-differences, large level differences between treated and weighted control units can be differenced: persistent level gaps between treated and donor units can be treated as time-invariant fixed effects, as with difference-in-difference estimators. By accounting for level differences, convex combinations of donor units can now be used to create synthetic controls for treated units that lie outside of the convex hull, as the synthetic Hamburg atop the spaghetti heap in figure 15 shows.

Figure 16: Estimated Hamburg Treatment Effect vs Control Unit Contributions



The negative estimated treatment effect of the Hamburg reform on native students’ *Gymnasium* enrollment is not statistically significant at the  $p=.05$  level, but this may reflect statistical power limitations rather than the absence of causal effects. The estimated effect of the reform on native Hamburg students’ enrollment share in *Gymnasium* of  $-1.6\%$  is visualized with the horizontal line in figure 16. This is estimated by taking differences between the treated unit of Hamburg and level-adjusted weighted versions of donor units whose names are displayed on the x-axis, with relative weights indicated by the size of circles in the figure. The ten donor units with largest weight-contributions are shown to make the figure more parsimonious. This research design, which compares *Gymnasium* attendance shares in Hamburg with a convex linear combination of enrollment shares in other German states during the same time period, imposes binding limits on statistical power. The data is observed annually across sixteen states. These states have only existed in their form since the re-unification of Germany in the 1990s, placing a limit on the size

of the pre-treatment window. Finally, the movement against reform was so effective that the post-treatment window over which treatment effects can be meaningfully measured is limited to two-years. All of these factors limit statistical power, which limits the scope of real-world causal effects over which *any* rigorous test would register statistical “significance” at the .05% level against a null hypothesis of zero. The 95% confidence interval for the treatment effect, using the placebo simulation estimation described in (Arkhangelsky et al., 2021), is  $[-0.0499, 0.0172]$ , which includes 0. In other words,  $p > .05$ . However researchers and social scientists in particular should be careful not to assume that failing to reject the default null hypothesis of zero at the 5% level implies the absence of genuine causal treatment effects (Gill, 1999; Gelman, 2018).

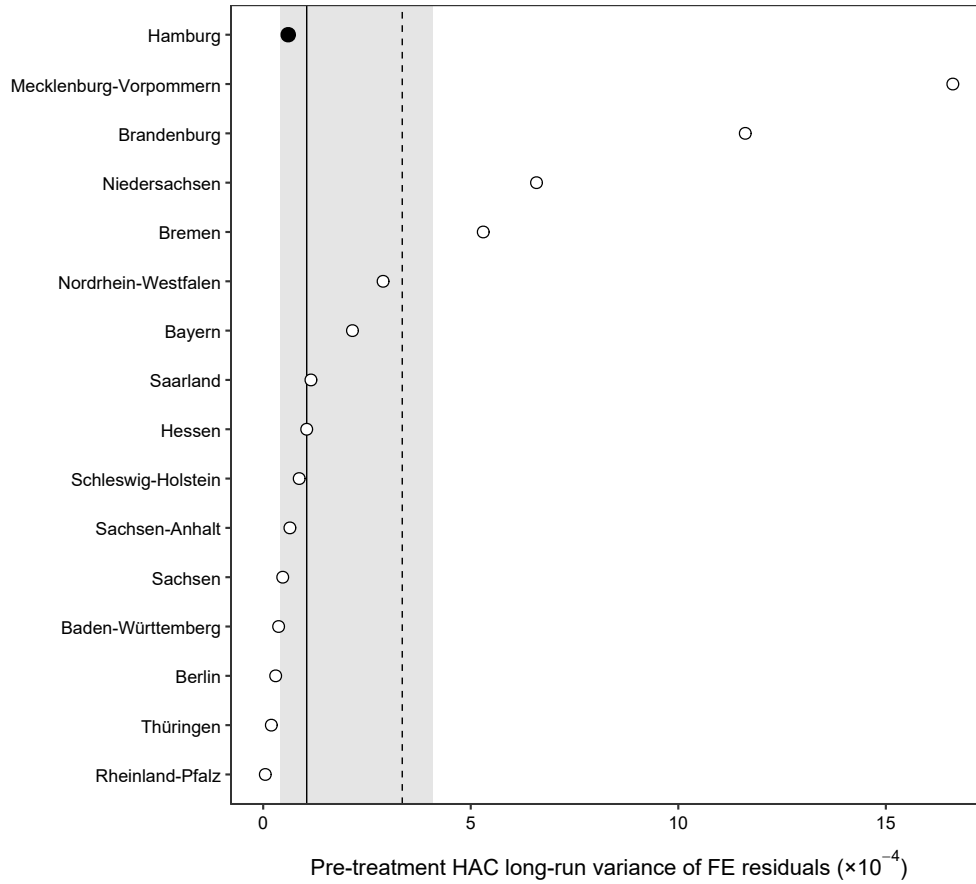
Table 1: Pre-treatment volatility for *Hamburg* vs controls (SDiD residuals)

Measure	Hamburg	Cntrls (Med. [Mean])	Ratio H/M	Implied SE	Pr(C > H)	p (< vol)
HAC long-run var.	6.02e-05	1.05e-04 [3.35e-04]	0.57	0.76	67%	0.375
Residual var.	3.63e-05	5.53e-05 [2.15e-04]	0.66	0.81	73%	0.312
Mean  res. , MAD	5.18e-03	6.60e-03 [8.99e-03]	0.78	0.89	67%	0.375

Particular care should be taken to avoid reflexively interpreting  $p > .05$  as a heuristic for zero causal effects where data generating processes cause estimator-specific standard errors to be overly *pessimistic*, as in cases where higher variance among donor than treated units causes upward bias in the size of placebo-simulation based standard errors for SDiD treatment effects. Feckless Fisherians frequently caution that standard errors may be under-estimated when estimators embed inaccurate assumptions about data and researchers have confirmation biases. For example, frequentist pedagogy warns that heteroskedastic data can lead researchers to underestimate the size of standard errors and assume spurious non-zero effects, especially when they have psychological biases in favor of confirming priors. However, biases of this sort can be bi-directional, depending on what specific mistaken assumptions estimators embed about data, and which arbitrary null hypothesis a researcher happens to favor. In the case of synthetic difference-in-difference estimators, specific cases of heteroskedasticity can lead to either underestimating *or* overestimating placebo-simulation based estimates of standard errors on treatment effect sizes. Where treated unit outcomes are more volatile than the donor units, then placebo-based estimates will underestimate the size of confidence intervals, whereas the opposite is true where the treated unit outcomes are relatively more stable. Intuitively, the estimates over-interpret the meaning of divergences between treated units and donors where the treated unit is relatively volatile, while it underappreciates the significance of these differences where the treated unit is historically stable.

Gymnasium attendance is more stable in Hamburg than in the average of other states, which suggests that the standard error of the reform’s estimated negative effect on native Germans’ Gymnasium access is an upper bound. Table 1 shows that across a range of statistical tests of long-term volatility (Heteroskedastic autocorrelation consistent or HAC estimation of long-run variance, variance of the residuals, mean residual deviance), Hamburg’s volatility is lower than that of the average state. Figure 17 shows why this is the case by visualizing the pre-treatment variance of residuals as measured by HAC estimation. Gymnasium attendance in Hamburg before the reform was relatively stable compared to the mean (dashed line) and median (solid line) level

Figure 17: Comparison of Pre-Treatment Variance of Residuals: Hamburg vs Control Contributors



across control states, and was near the bottom of the inter-quartile range across states (shaded gray), because there are a several outlier states with significantly above third quartile variance, with Mecklenburg-Vorpommern and Brandenburg being especially notable.

Although beyond the scope of this study, this analysis has implications for future research which studies the causal impacts of shocks on outcomes across comparable units, such as the effects of state-level reform on group-specific access school access in this case-setting. The high volatility of Gymnasium enrollment shares in several states suggests there were other structural changes in the pre-treatment period for these cases that reduces their reliability for use in a synthetic controls style measurement of treatment effects. Since placebo-based measures of treatment effect standard errors is sensitive to volatile outliers, researchers may be justified in excluding them in synthetic controls based estimates of average treatment effects. However, post-hoc removal of relatively volatile cases may rightfully raise concerns about cherry-picking to achieve specious statistical significance, since every set of data will include cases with relatively high values for any given statistical moment. Therefore, future researchers attempting to apply synthetic controls -style methods to estimate causal effects in relatively small-n and small-t settings may consider *pre-registering* expectations about cases that should be excluded as potential controls in synthetic controls analysis. This might be conceived of as a reverse face for previous descriptions of synthetic controls as offering opportunities for achieving “qualitative inference with bones” (Tarrow, 1995;

Abadie et al., 2015), as in this setting a broader motivational *qualitative* analysis provides needed background for subsequent analysis that uses *quantitative* inferential techniques to estimate causal effects in discrete case studies (Seawright and Gerring, 2008). This approach accords with general methodological frameworks which posit that, given limits to statistical power in the settings that political scientists care about (Arel-Bundock et al., 2024), qualitative process observations are valuable complements for quantitative dataset analysis to achieve credible causal inference (Seawright and Gerring, 2008).

To conclude, there is suggestive but not statistically conclusive evidence that the 2008 Hamburg reform caused a negative shock to native parents' certainty about their children's access to academic *Gymnasium* schools. In settings where a theoretically motivated hypothesis is supported suggestively but not conclusively by statistical tests, further quantitative and qualitative empirical tests are warranted to better triangulate the plausibility of the theory for which the hypothesis is an observable implication (Hall, 2003; Brady and Collier, 2010). Thus, the rest of the paper proceeds to further mixed-methods tests against alternatives to evaluate the case-specific relevance of the theory of boundary defense.

### C.3 Precinct-Level Predictors of Referendum Support: Vote-Weighted Regressions

Table 2: Precinct-Level Predictors of Referendum Support: Design-Motivated Specification Iteration

	M1	M2	M3	M4	M5	M6	M7	M8	M9
CDU vote (2008)	0.49*** (0.06)	0.49*** (0.12)	0.50*** (0.11)	0.65*** (0.09)	0.70*** (0.12)	0.55*** (0.12)	0.62*** (0.13)	0.54*** (0.15)	0.51*** (0.15)
Green vote (2008)	-1.71*** (0.13)	-1.71*** (0.21)	-1.69*** (0.20)	-1.42*** (0.18)	-1.23*** (0.23)	-1.61*** (0.23)	-1.39*** (0.24)	-1.51*** (0.27)	-1.51*** (0.27)
Income (cont.)		0.00 (0.00)							
Low-income tercile			0.24 (1.79)						
Mid-income tercile			-0.24 (1.25)						
Below-median income				2.89** (1.25)	2.67** (1.25)	3.17** (1.26)	2.99** (1.27)	3.42** (1.32)	2.82** (1.36)
Citizens w/ migration bg.					0.20* (0.11)			0.27 (0.22)	0.31 (0.22)
Foreign residents					-0.08 (0.10)			0.10 (0.23)	-0.09 (0.25)
Under-18 share							0.23 (0.15)	0.13 (0.22)	-0.02 (0.23)
M-B children share							-0.01 (0.06)	-0.12 (0.16)	-0.40* (0.22)
Non-academic school share						-0.07 (0.05)		-0.08 (0.06)	-0.23** (0.10)
Non-academic school share × M-B children share									0.01* (0.00)
Observations	200	200	200	200	200	200	200	200	200
$R^2$	0.780	0.780	0.780	0.786	0.790	0.788	0.789	0.794	0.798
Adj. $R^2$	0.778	0.777	0.776	0.783	0.784	0.784	0.783	0.786	0.788
RMSE (pp)	5.65	5.65	5.65	5.58	5.53	5.55	5.54	5.47	5.42

Note: Coefficients/SEs reported in percentage points of the dependent variable. WLS with valid-vote weights, HC2 robust SEs in ().



Table 3: Precinct-Level Predictors of Referendum Support: Interaction Effect Robustness and Explorative Analysis

	M1	M2	M3	M4	M5	M6	M7	M8
CDU vote (2008)	0.60*** (0.17)	0.42*** (0.16)	0.55*** (0.15)	0.61*** (0.13)	0.51*** (0.15)	0.44*** (0.16)	0.52*** (0.16)	0.51*** (0.16)
Green vote (2008)	-1.31*** (0.32)	-1.62*** (0.28)	-1.31*** (0.29)	-1.38*** (0.25)	-1.50*** (0.27)	-1.56*** (0.30)	-1.65*** (0.28)	-1.58*** (0.29)
Income (cont.)	-0.00* (0.00)							
Low-income tercile		0.22 (2.01)				60.57 (48.04)	1.82 (2.22)	54.99 (47.77)
Mid-income tercile		0.16 (1.40)				-0.08 (1.44)	46.59* (23.95)	49.78* (25.31)
Below-median income			70.52** (35.40)	-0.19 (4.62)	-3.60 (7.87)			
Citizens w/ migration bg.	0.18 (0.22)	0.25 (0.23)	0.30 (0.23)	0.36* (0.21)	0.14 (0.12)	0.28 (0.23)	0.28 (0.23)	0.26 (0.24)
Foreign residents	-0.25 (0.24)	-0.25 (0.26)	-0.29 (0.30)	0.09 (0.24)	-0.13 (0.14)	-0.28 (0.31)	0.05 (0.28)	-0.09 (0.33)
Under-18 share	0.15 (0.25)	-0.03 (0.24)	-0.01 (0.25)	-0.02 (0.20)	0.20 (0.17)	-0.03 (0.24)	-0.05 (0.24)	-0.02 (0.25)
M-B children share	-0.38* (0.22)	-0.39* (0.23)	-0.27 (0.40)	-0.20 (0.16)		-0.41 (0.33)	-0.43* (0.25)	-0.21 (0.43)
Non-academic school share	-0.38*** (0.12)	-0.26** (0.11)	-0.19 (0.17)		-0.10* (0.05)	-0.27* (0.15)	-0.12 (0.12)	-0.02 (0.20)
Non-academic school share × M-B children share	0.01*** (0.00)	0.01** (0.00)	0.00 (0.01)			0.01 (0.00)	0.00 (0.00)	0.00 (0.01)
Below-median income × Non-academic school share			-1.12* (0.61)		0.12 (0.14)			
Below-median income × M-B children share			-1.22* (0.72)	0.08 (0.10)				
Below-median income × Non-academic school share × M-B children share			0.02 (0.01)					
Low-income tercile × Non-academic school share						-0.95 (0.80)		-0.93 (0.80)
Low-income tercile × M-B children share						-0.97 (0.88)		-0.93 (0.90)
Low-income tercile × Non-academic school share × M-B children share						0.01 (0.01)		0.02 (0.01)
Mid-income tercile × Non-academic school share							-1.02** (0.43)	-1.09** (0.46)
Mid-income tercile × M-B children share							-0.85 (0.63)	-1.00 (0.71)
Mid-income tercile × Non-academic school share × M-B children share							0.02* (0.01)	0.02* (0.01)
Observations	200	200	200	200	200	200	200	200
$R^2$	0.797	0.793	0.802	0.793	0.795	0.795	0.804	0.805
Adj. $R^2$	0.787	0.782	0.789	0.784	0.786	0.781	0.790	0.788
RMSE (pp)	5.43	5.48	5.36	5.48	5.46	5.45	5.34	5.32

Note: Coefficients/SEs reported in percentage points of the dependent variable. WLS with valid-vote weights, HC2 robust SEs in ().

## C.4 Maps: Referendum Votes, Income, and 2008 Partisanship

Figure 18: Polling-Place Referendum Yes, Income per Capita

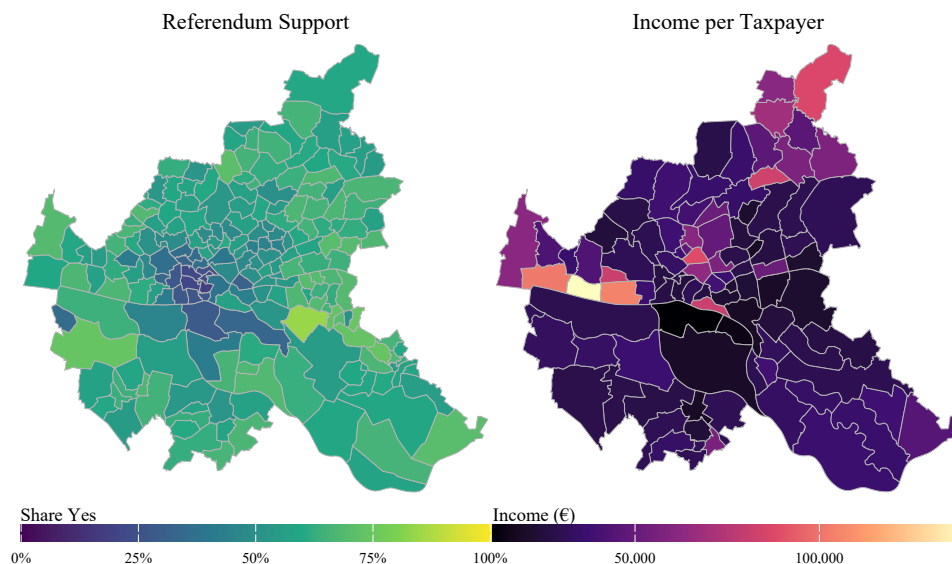


Figure 18 compares precinct-level votes for the referendum in the left panel with city-district (*Stadtteile*) level income per taxpayer in right panel. This shows that opposition to delayed tracking does not align neatly with neighborhood-level wealth. Instead, the largest variation in support for the referendum is between the city-state's dense downtown and outlying neighborhoods, including lower income working-class neighborhoods in the city's east.

Figure 19: Partisan Vote Shares, 2008 Parliamentary Election

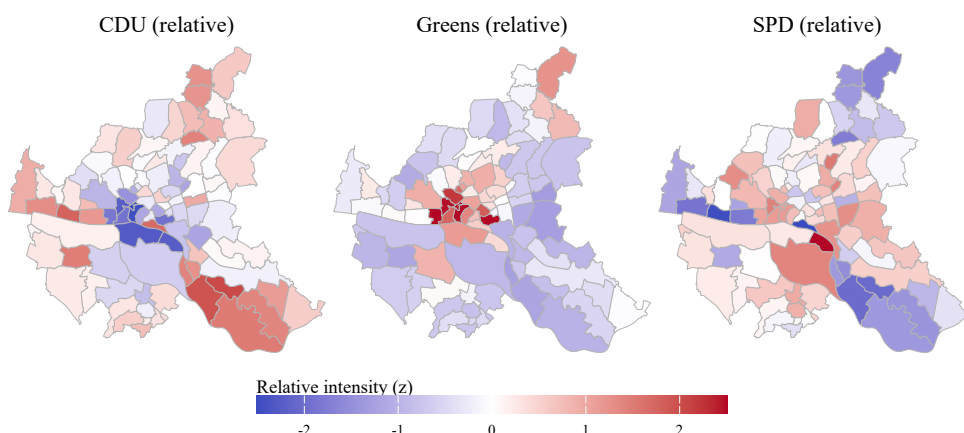


Figure 19 plots relative vote shares in the cross-section for the Christian Democratic Union (CDU), Greens, and Social Democratic Party (SPD) in the 2008 Hamburg parliament election

preceding the reform and referendum. Consistent with this vote occurring prior to the coalition agreement for education reform and its historical issue positioning, the CDU is most obviously misaligned with its electoral base on education reform. The Greens meanwhile are relatively well-aligned, with an electoral base predominately in the higher-income areas of the urban center and North. The SPD's 2008 base by was in the city's historically working-class lower-income west, corresponding to some precincts shown in figure 18 where referendum support was relatively high.

## C.5 Tests of Precinct-Level Interaction Effect Support and Linearity

Figure 20: Effect of Non-Academic School Sorting Share Across Levels of Migration-Background Children

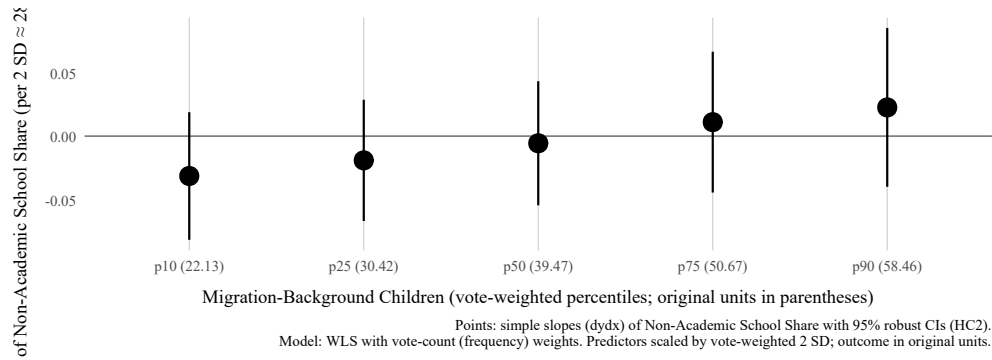
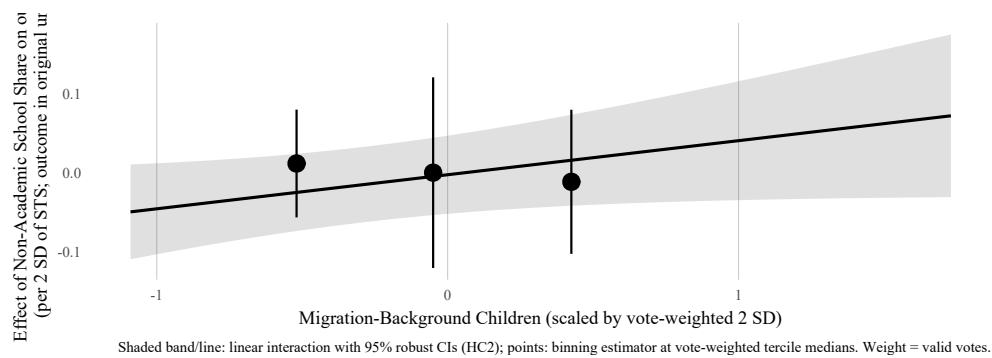


Figure 21: Binned Estimator at Tercile Medians: Interaction Effects



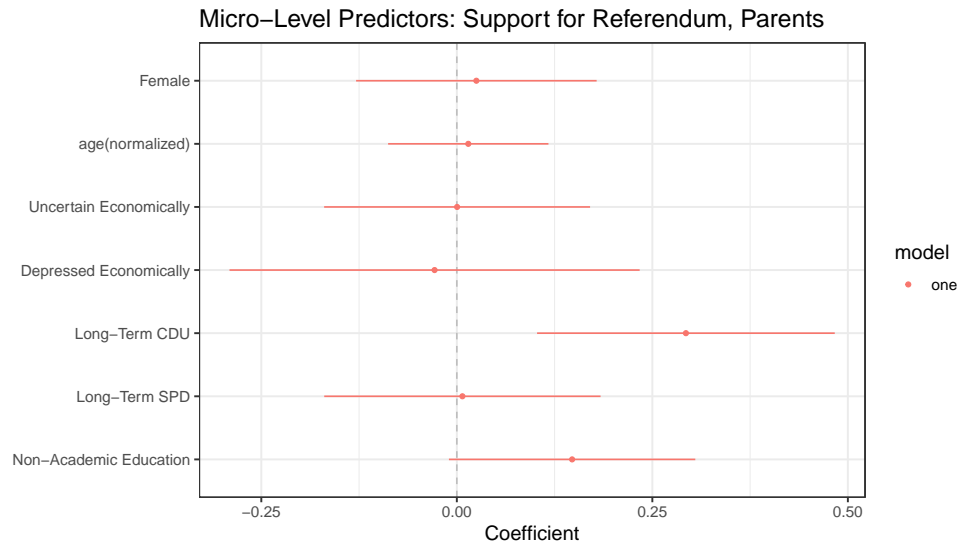
## C.6 Hamburg GLES Regression Table

	All	Interaction	Parents Only
Female	0.28 (0.28)	0.29 (0.29)	0.08 (0.12)
Age (normalized)	0.50 (0.61)	0.62 (0.61)	0.29 (0.30)
School-Age Parents	−0.11 (0.31)	−0.73 (0.47)	
Income	−0.18 (0.66)	−0.10 (0.66)	0.27 (0.35)
Non-Academic Education	0.04 (0.32)	−0.26 (0.38)	0.26** (0.12)
Migration Background	0.26 (0.50)	0.21 (0.51)	0.08 (0.18)
Anti-Redistribution	1.05** (0.51)	1.01* (0.51)	0.27 (0.22)
Anti-Immigration	0.85 (0.52)	0.92* (0.53)	0.17 (0.19)
School-Age Parents X Non-Academic Education		1.27** (0.64)	
Deviance	346.16	342.12	14.25
Dispersion	1.00	1.01	0.21
Num. obs.	263	263	68

\*\*\* $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.1$

## C.7 Referendum Support: Hamburg State Election Study

Figure 22: Survey-Weighted Logistic Regression: Favorable towards Referendum



Parents Only	
Female	0.02 (0.08)
age(normalized)	0.01 (0.05)
Uncertain Economically	0.00 (0.09)
Depressed Economically	−0.03 (0.13)
Non-Academic Education	0.15* (0.08)
Long-Term CDU	0.29*** (0.10)
Long-Term SPD	0.01 (0.09)
Deviance	43.52
Dispersion	0.23
Num. obs.	192

\*\*\* $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.1$

## C.8 Table: Predictors of Support for Delayed Tracking in Germany

	Parents Only
Female	−0.46*** (0.17)
Age	0.00 (0.19)
Migration Background	−0.08 (0.21)
Income	0.22** (0.09)
Non-Academic Education	−0.42** (0.19)
Child: Pre-Tracking	−0.50** (0.21)
Child: Post-Tracking Gym.	−0.57** (0.27)
Long-Term CDU/CSU	−0.59*** (0.21)
Long-Term SPD	−0.26 (0.21)
Long-Term Green	0.07 (0.36)
Treatment: Germany Outlier	0.57** (0.23)
Treatment: Disadvantaged	−0.08 (0.23)
Treatment: Working Class	0.14 (0.23)
Deviance	1101.82
Dispersion	1.00
Num. obs.	891

\*\*\*  $p < 0.01$ ; \*\*  $p < 0.05$ ; \*  $p < 0.1$

## C.9 Table: Predictors of Polling-Place level 2011 SPD Support

	Referendum Vote
Intercept	26.17*** (2.63)
Share Referendum Support	2.85*** (0.21)
SPD Vote (2008)	0.69*** (0.07)
Income	−2.05*** (0.44)
Migration Background (Citizens)	−0.94** (0.43)
Children	0.20 (0.26)
Stadtteilschule	−0.88** (0.43)
Migration BG Children	−1.95*** (0.51)
R <sup>2</sup>	0.79
Adj. R <sup>2</sup>	0.78
Num. obs.	200

\*\*\* $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.1$



## C.10 Table: Predictors of Micro-level 2011 SPD Support

	Referendum Support
Female	−0.07 (0.05)
age(normalized)	0.02 (0.02)
Uncertain Economically	−0.06 (0.05)
Depressed Economically	−0.07 (0.08)
Non-Academic Education	−0.01 (0.05)
School Age Kids	−0.16** (0.07)
Pro Referendum	−0.10* (0.06)
Pro Referendum X School-Age Parent	0.18* (0.10)
Deviance	86.58
Dispersion	0.18
Num. obs.	473

\*\*\* $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.1$