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Better Alone? Evidence on the Costs of Intermunicipal Cooperation[†]

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This paper provides new evidence on why municipalities are often reluctant to integrate. Exploiting a French reform that made intermunicipal cooperation mandatory, I find that municipalities forced to integrate experienced a large increase in construction, consistent with NIMBYism, explaining their resistance and that rural municipalities ended up with fewer local public services. I do not find the same effects for municipalities that had voluntarily integrated prior to the law, while both types of municipality enjoyed similar benefits in terms of public transport and fiscal revenues. These findings support the fact that municipalities resisted to avoid the local costs of integration. (*JEL* H70, R38, R51, R53, R58)

Over the last century, developed countries have encouraged intermunicipal cooperation in order to create larger local jurisdictions and achieve economies of scale in the provision of public goods. However, municipalities are often reluctant to cooperate, slowing or even blocking the consolidation process.[1] This opposition reflects the fundamental trade-off of jurisdiction size. On the one hand, intermunicipal cooperation may improve overall efficiency by creating economies of scale and internalizing cross-municipal externalities. On the other, intermunicipal cooperation can

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[1]Despite large financial incentives, voluntary mergers in Japan resulted in a higher number of municipalities than what the government would have chosen to impose (Weese 2015); other countries, such as Denmark and Sweden, instead decided to force mergers (Lidström 2010; Mouritzen 2010); in the United States, after a wave of consolidation in the nineteenth century, municipalities became more and more reluctant to integrate (Jackson 1987); in France, the government failed to impose mergers in the 1970s and then strove to promote the formation of ICs.

be costly for municipalities, as they lose autonomy over local policies, reducing their ability to tailor policies to local preferences and protect local interests (Tiebout 1956; Alesina and Spolaore 1997; Bolton and Roland 1997). Identifying the local costs of integration is key to understanding municipalities' opposition and to explaining why consolidation policies might fail.

Existing studies have mainly focused on the first side of the trade-off, assessing whether intermunicipal cooperation reduces overall spending (e.g., Bel and Warner 2015; Blom-Hansen et al. 2016) and tax competition (e.g., Charlot, Paty, and Piguet 2015; Breuillé, Duran-Vigneron, and Samson 2018). But there is still little evidence on the local consequences of integration faced by individual municipalities. This reflects, in part, the general focus on mergers: after consolidation, administrative data are collected at the postmerger level, making it challenging to compare the situations of preexisting municipalities before and after integration. Moreover, cooperation is usually voluntary, implying that we observe the consequences of integration only for municipalities that were willing to cooperate and are, thus, least likely to bear the costs of integration.

This paper overcomes these challenges by studying a unique setting of forced cooperation. I exploit a 2010 reform in France that made intermunicipal cooperation mandatory, forcing around 1,800 municipalities to enter an intermunicipal community (IC). Importantly, when entering a community, municipalities do not disappear as they do in mergers. They coexist with this new higher level of governance and share their public policies with neighboring municipalities in the same community. While this form of cooperation is widespread across the world,[2] France is the only country in which it became mandatory.

Using a difference-in-difference strategy, I compare, before and after 2010, municipalities forced to integrate with municipalities that have been part of an IC for a long time. I provide extensive evidence supporting the common trend assumption. In particular, I show that those two groups, while selected, evolved similarly prior to the law. Along with extensive data collection at the municipal level, this strategy enables me to measure the causal impact of integration on municipalities that resisted it. I then compare their experience to that of municipalities that had voluntarily joined a community before the 2010 law, using a staggered adoption design in which the date of the treatment corresponds to the year of integration.[3] Through this comparison, I can identify the local consequences of integration that explain why resisting municipalities opposed integration in the first place.

Municipalities that are part of the same community share several public policies; losing autonomy over these can be costly. First, urban planning policies become subject to the guidelines set by the IC. The IC can issue the housing plans itself, detailing where and how much to build in each member municipality, or it can issue more general guidelines that the municipalities' housing plans must follow. This can be costly for high-demand municipalities that have been using local housing regulations to

[2] Many countries have intermunicipal organizations similar to those in France, including Finland, the Netherlands, Ireland, Brazil, Spain, and Italy (Hulst et al. 2009; De Mello and Lago-Peñas 2013). Similarly, shared services in the United Kingdom and special or school districts in the United States involve the creation of a new level of governance.

[3] In light of the recent literature on the issues associated with the staggered adoption design, I also use an alternative estimation procedure developed by de Chaisemartin and D'Haultfoeuille (2020).

prevent outsiders from coming in and to prevent further increases in housing density (Gyourko and Molloy 2015). This local opposition to new construction is commonly referred to as "not in my backyard," or NIMBYism. Sharing their housing and zoning policies with outsiders and would-be residents might therefore lead to more construction on their territory than desired.[4] Second, integrated municipalities jointly finance and provide local public services: waste management; road maintenance; public transport; daycare facilities; and social, cultural, and sports facilities. While pooling resources for large-scale services such as public transport seems generally beneficial, sharing decisions over the location of public service can be costly for some municipalities. With the aim of achieving economies of scale, ICs seek to rationalize the supply of local public services and, thus, to concentrate resources on facilities in high-density areas. As a result, low-density municipalities might end up with fewer facilities, increasing the distance to public services for their residents.

I take these two predictions to the data and test whether entering an IC leads to more construction and fewer public services in municipalities forced to integrate. I show that both dimensions help explain their resistance.

Exploring the loss of autonomy over urban planning, I find that municipalities forced to enter an IC experienced a large increase in construction: the number of building permits delivered on their territory increased on average by 12.5 percent per year after 2010. Given that control and treated municipalities displayed similar trends prior to the law, this effect can be interpreted as the causal impact of their integration.[5] To investigate further whether such an effect can explain their resistance, I turn to municipalities that voluntarily joined an IC before the law and find that they did not experience a significant change in their housing supply following their integration. Hence, only municipalities that did not want to enter an IC experienced a significant rise in construction. This differential impact supports the view that municipalities that had refused to integrate did so to avoid a rise in housing supply.

Further heterogeneity analyses show that the increase in building permits is driven by municipalities in which the demand for housing is high and that the effect is larger for those that are already densely built up. In contrast, the impact on housing is not stronger for municipalities surrounded by neighboring municipalities that are more different from them in terms of income, sociodemographic characteristics, or political preferences, or for municipalities with a higher share of homeowners. These findings suggest that resistance is not driven by residents' fear of greater population heterogeneity or by homeowners' fear of a housing price decline. Instead, they suggest that municipalities that wanted to keep control over their housing supply are mainly high-demand municipalities whose NIMBY residents, whether homeowners or renters, seek to avoid further increases in density to preserve their quality of life.

Additional results suggest that integration did not lead to a significant drop in housing prices. I provide an interpretation for this null effect that is based on demand spillovers

[4] Due to local opposition to construction, higher-level governance has been advocated as a way to overcome housing regulations and increase construction (Rusk 1995; OECD 2012; Glaeser 2014; Glaeser and Gyourko 2018). This typically triggers strong resistance from municipalities. For instance, Orfield (1997) describes the fierce opposition of municipalities in Minnesota against the transfer of urban planning policies to the metropolitan area level. In France, we say that a mayor who builds will lose the next election ("*maires batisseurs*, *maires battus*").

[5] I show that all main results are robust in magnitude and significance by using propensity score matching, varying the control group, using higher-level clustering, and including time-varying controls at the municipality level.

from nearby municipalities and is consistent with new construction taking place in high-demand municipalities. I also show that the increase in construction is neither preceded nor followed by an increase in economic activity, providing additional evidence that the rise in housing supply is due to a change in regulation after integration, rather than to a change in economic conditions. This also suggests that the disutility associated with new construction is not compensated for by economic gains. Finally, I do not find a significant impact of forced integration on population size during the period of analysis, in line with the fact that population effects take time to materialize.

I then assess the consequences of integration on local public services. I gathered data on two different public services transferred to the community level after integration: daycare services and public libraries. The results suggest that, in the average year after 2010, rural municipalities forced to integrate ended up with 20 to 30 percent fewer daycare spots and public libraries compared to rural control municipalities. Urban municipalities, however, did not experience any decline in local public services. These results suggest that the loss of local public services help explain why low-density municipalities resisted integration. I provide additional evidence that the impact comes from their loss of control over the location of facilities and from ICs concentrating resources in more densely populated areas: rural municipalities forced to integrate did not experience any change in the number of schools, the location of which is decided nationally and, thus, not directly affected by intermunicipal cooperation.

Finally, I investigate the benefits of integration in order to assess what resisting municipalities were willing to give up by not integrating. By enhancing cooperation and enabling municipalities to pool resources, integration is likely to improve large-scale public services. Specifically, it might help neighboring municipalities build larger and more efficient public transport networks. Moreover, ICs are likely to generate extra fiscal revenues through a decrease in tax competition and thanks to the additional grants provided by the government to ICs. In line with these predictions, I find that municipalities that were forced to enter an IC became twice as likely to have access to public transport. They also experienced an increase of 14.5 percent per year in the fiscal resources available per resident, driven by additional state transfers and an increase in tax revenues.

Crucially, those benefits are similar to those experienced by municipalities that voluntarily integrated prior to the law. While resisting municipalities experienced costs that other municipalities did not face, they entered ICs generating at least as much revenue and they benefited equally from an increased access to public transport. This suggests that they did not resist due to lower benefits, but to avoid the costs associated with increased construction and with the loss of public services for rural municipalities. Although resisting municipalities are quite similar to municipalities that integrated voluntarily, based on sociodemographic, land-use, and political characteristics, they tend to be smaller than their neighbors and, thus, to end up with less bargaining power once integrated. All together, this suggests that municipalities resisted integration knowing that they would not be able to prevent their neighbors from imposing new construction on them or decreasing their access to public services.

The last part of the paper provides additional evidence supporting this interpretation. I first show that the costs experienced by resisting municipalities are unlikely to

be driven by the fact that they entered an IC later on and were forced to do so, which could have triggered punishment by already integrated neighbors for having resisted so long. In particular, the impact is similar whether resisting municipalities entered longstanding communities, recently created ones, or even newly created ICs, suggesting that they would have experienced the same effects had they integrated earlier. Second, looking at ICs' composition at the end of the period of integration in 2014, I provide evidence that resisting municipalities have, on average, a lower share of seats on the intermunicipal council and are more likely to end up in ICs that encompass a large municipality. They are, thus, the ones losing the most bargaining power upon integration, making them less able to fight ICs' decisions and more likely to bear the costs of integration.

Overall, this paper provides new evidence that municipalities' opposition to consolidation is driven by local consequences of integration, beyond ideological or political considerations. As most forms of cooperation among local jurisdictions imply sharing urban planning policies and public services, these results may help explain resistance against integration beyond the French case, as long as the decision process involves some jurisdictions losing more power than others. By identifying the local costs of integration, these findings could also help policymakers design better compensation schemes to implement consolidation policies more effectively.

Contribution to the Literature.—In the first half of the nineteenth century, Alexis de Tocqueville described the US federal system as a way of "combining the different advantages which result from the magnitude and the littleness of nations" (Tocqueville 1945). In their seminal works on decentralization, Tiebout (1956) and Oates (1972) emphasized that the provision of public good at the local level reflects the population preferences more adequately than provision at the national level. Ultimately, the trade-off was formalized in Alesina and Spolaore (2003) and Bolton and Roland (1997), in which the efficiency gains of large jurisdictions are weighted against the costs associated with heterogeneity and with the loss of local control. Additionally, Alesina and Spolaore (2003) predict that political agents will tend to choose a higher number of jurisdictions than optimal, as the ones bearing the costs of size do not internalize the aggregate benefits of belonging to a larger jurisdiction. Identifying the costs that prevent aggregation is the focus of this paper.

Studies of the (un)willingness to consolidate have analyzed which types of municipality choose to integrate (see Bel and Warner 2016 for a review). Using structural or spatial models, they stress the role of expected change in fiscal revenues, expected distance to public services, and neighbors' characteristics (Alesina, Baqir, and Hoxby 2004; Gordon and Knight 2009; Saarimaa and Tukiainen 2014; Weese 2015; Bel and Warner 2016; Di Porto and Paty 2018). Relying on surveys, Sørensen (2006) and Bergholz and Bischoff (2018) show, respectively, that politicians' reported opposition to integration is driven by expected losses in revenues and decision-making power.[6] Instead of estimating the preference or modeling the

[6]Looking at secession instead and using referendum data in Canada, Lapointe (2018) shows that income and language differences affect voters' preferences concerning municipal borders.

choice to cooperate, this paper provides new evidence on the factors explaining resistance by focusing on the actual consequences of integration.

So far, the literature has mainly measured the impact of intermunicipal cooperation at the aggregate level to assess whether it leads to efficiency gains, as hoped by central governments. The results are mixed (see Bel and Warner 2015 and Bel and Sebo 2019 for a review). Although Reingewertz (2012); Blesse and Baskaran (2016); and Cobban (2019) find some evidence of efficiency gains in Israel, Germany, and Ontario, there is no evidence of cost savings in France, Denmark, the Netherlands, or Italy (Frère, Leprince, and Paty 2014; Blom-Hansen et al. 2016; Allers and De Greef 2018; Luca and Modrego 2020).[7] While intermunicipal cooperation might not achieve its goal of reducing the cost of public goods, it does seem to reduce tax competition. In France, several studies find that the voluntary integration into ICs led to higher tax rates and tax revenues (Carbonnier 2013; Charlot, Paty, and Piguet 2015; Breuillé, Duran-Vigneron, and Samson 2018).

Beyond the overall impact of cooperation, a few recent papers have used geocoded data to investigate the distributional impact of mergers on voter turnout (Horiuchi, Saito, and Yamada 2015; Lapointe 2018), local public sector jobs (Harjunen, Saarimaa, and Tukiainen 2019) and night-light intensity (Pickering, Tanaka, and Yamada 2020; Egger, Köthenbürger, and Loumeau 2022). Looking at mergers makes it particularly challenging to study local effects. First, the set of outcomes is limited, as data are typically collected at the postmerger level. Second, most mergers are voluntary, providing little insight on the impact for municipalities that did not want to merge and are the most likely to bear the costs of consolidation.[8]

In contrast, my setting of forced cooperation enables me to make three important contributions to the literature. First, exploiting the 2010 law, I can assess the causal impact of integration on municipalities that refused to cooperate to better understand their resistance. Second, I can investigate the local consequences of integration on a large set of outcomes, including housing, economic activity, local public services, public transport, and fiscal revenues. Third, given the large number of French municipalities, I can perform heterogeneity analysis along several dimensions to shed light on the mechanisms.

In particular, while the regulation of construction is one of the most important functions of local government, this paper is the first to study the impact of intermunicipal cooperation on housing. I provide novel evidence that NIMBY-ism helps explain municipalities' reluctance to integrate and to share urban planning policies. These results are consistent with survey evidence showing that residents, whether renters or homeowners, oppose nearby constructions (Hankinson 2018), which they consider nothing but a bother (Glaeser 2014). My findings also show that transferring urban planning to a higher level—allowing outsiders and would-be residents to participate in the decision-making—reduces local housing restrictions. This is in line

[7] In contrast to Luca and Modrego (2020), Ferraresi, Migali, and Rizzo (2018) find that ICs (*unioni di comuni*) lead to a reduction in public expenditures in the Emilia Romagna region of Italy.

[8] Two recent papers provide evidence of the local impacts of jurisdiction size in alternative settings. Wilner (2023) focuses on the 2016 merger of French regions to assess the impact of higher-level centralization on life satisfaction. Dahis and Szerman (2024) focuses on administrative splits instead of mergers and find that rural Brazilian municipalities that successfully split experienced some improvements in public service delivery.

with evidence in the United States showing that municipalities with ward-based representatives impose more zoning restrictions than those with at-large representatives (Clingermayer 1994; Mast 2024). These results are particularly policy relevant in light of the growing literature stressing the overall negative impact of local regulation on productivity, intergenerational mobility, and greenhouse gas emissions through urban sprawl (Glaeser and Maré 2001; Glaeser and Kahn 2010; Jones and Kammen 2014; Chetty, Hendren, and Katz 2016; Ganong and Shoag 2017; Glaeser and Gyourko 2018; Hsieh and Moretti 2019; Duranton and Puga 2023).

The remainder of the paper is organized as follows. Section I presents the institutional framework and the data. Section II describes the empirical strategy and provides descriptive statistics on resisting municipalities. I present the main results on housing supply in Section III and on local public services in Section IV. Section V studies the benefits of integration. Section VI discusses the interpretation and mechanisms. Section VII concludes.

I. Institutional Background and Data

A. *Intermunicipal Cooperation in France*

France is divided into about 36,000 municipalities with an average size of 1,800 inhabitants. Municipalities are the lowest of three tiers of local government and account for 11 percent of total public spending. They are responsible for local urban planning; social housing; the provision of primary schools;[9] daycare services; municipal roads; public transport; and social, sports, and cultural facilities. Municipalities' revenues come mainly from local taxation (54 percent) and state transfers (23 percent). They raise four local taxes: the local business tax paid by firms and accounting for 45 percent of local tax revenues, the housing tax paid by all residents on the cadastral value of their accommodations (whether they are renters or owners), the property tax paid by owners, and the land tax.[10] Each municipality is governed by a municipal council chaired by the mayor. Elections for municipal councilors take place every six years.

In the 1970s, the French government intended to pass a law that would have reduced the number of municipalities by 20 percent through mergers. Mayors massively blocked the reform and only a few mergers took place, reducing the number of municipalities by only 3 percent. Following this failure, the government decided to pivot toward promoting the creation of a new administrative structure: ICs.[11] When entering an IC, the municipality does not disappear as in mergers; it continues to exist

[9] Municipalities' responsibilities in the education sector are very limited. They are only responsible for the equipment of primary schools and for the organization of extra curricular activities. Decisions over the location of the schools, size of the classrooms, teachers' recruitment and assignment, and learning programs are centralized at the state level. Secondary schools (respective high schools) are managed at the national and departmental (respective regional) levels.

[10] Since 2010, two reforms changed the French local tax system. First, after 2010, the business tax, which relied both on capital investments (equipment and machinery) and firms' property (building and land), was replaced by a business property tax only, thus removing the capital part from the tax base. This change affected all municipalities and was fully compensated by transfers from the state (Ly and Paty 2020). Second, the housing tax on primary residences was gradually decreased starting in 2018 and disappeared in 2023, after the end of the period of analysis.

[11] In France, ICs are called *établissement public de coopération intercommunale* (EPCI). France has four types of IC: *communautés de communes* (CC), *communautés d'agglomerations* (CA), *communautés urbaines* (CU), and *métropoles*—defined mainly by the number of mandatory competences to be transferred to the community and by the size of the member municipalities. The vast majority of municipalities are part of a CC (more

under a new level of local governance. The mayor and municipal council stay in place, but the municipality has to share some public services with the other municipalities that are part of the same community.

By law, ICs are in charge of territory and economic development—that is, urban planning and the promotion of local businesses. Since the 1980s decentralization laws, French municipalities are in charge of building permits and must produce a planning and development plan (*plan local d'urbanisme*). Once a municipality is part of an IC, local planning becomes subject to guidelines set by the community. In the most stringent case, the IC issues a housing plan (*plan local d'habitat* (PLH)) detailing where and how much to build in each member municipality. While the PLH is mandatory only for the largest ICs, many adopt it voluntarily and it covered 65 percent of the French population in 2011. ICs that do not issue a PLH can still set urban planning guidelines through the territorial coherence plan (*schéma de cohérence territoriale*) or the intermunicipal development plan (*plan local d'urbanismeintercommunal*).

Municipalities also decide which additional public services to transfer to the IC. The most commonly delegated ones (in 80 to 90 percent of cases) are services for which cooperation is likely to result in economies of scale: waste management;public transport; and social, cultural, and sports facilities. Once the public service is transferred, the IC becomes the sole decision-maker and the sole owner of the financial and material resources attached to it.

Finally, an IC's revenues consist of state transfers and local taxes. The rules for how fiscal revenues are levied at the IC level depends on the tax system chosen by the member municipalities when the IC was created. In the first tax system (*EPCI à fiscalité additionelle*), the IC applies an additional tax rate on each of the four local taxes (business tax, housing tax, property tax, and land tax), which comes on top of the tax rate applied at the municipal level. In the second tax system (*EPCI à fiscalité professionnelle unique*), the IC sets a single business tax rate, while still applying an additional tax rate on the other three taxes. In this case, the municipalities lose the right to set their own business tax, there is a unique business tax base at the IC level, and all the business tax revenues go to the IC.

The IC is run by a board made up of members of the municipal councils of all participating municipalities. The number of seats held by a municipality on the intermunicipal council is proportional to its population. By law, each municipality has at least one seat and no municipality has more than half of the seats. Once the allocation of seats is decided, each municipal council elects the municipal councilors who will be part of the intermunicipal council. Then, the intermunicipal council elects its president. Decisions over which public services to transfer to the community or over which tax system to adopt require the approval of either (i) two-thirds of the municipal councilors representing more than half of the IC's total population or (ii) at least half of the municipal councilors representing more than two-thirds of the population, as well as the approval of all municipal councilors representing more than one-fourth of the IC's population. Then, day-to-day decisions about urban planning or the delivery of public services are made by the intermunicipal council, by majority. Hence, when joining an

than 80 percent)—the form of cooperation I describe in this section and the one that gives the most freedom to municipalities in deciding which public services to transfer.

IC, a municipality loses power over policies, the more so the smaller its population compared with the population of the other municipalities in the same IC.

Until 2010, municipalities were free to decide whether or not to create or join an IC. However, the financial incentives to integrate into an IC were high: since the Chevènement law in 1999, ICs receive a state transfer on top of the individual transfers to each municipality, which remain unchanged whether the municipality integrates or not. This law marked a turning point: whereas half of the municipalities were part of an IC in 1999, 95 percent were by 2010. In 2010, mainland France had 2,575 ICs, each with an average of 13 municipalities and 21,295 inhabitants. Still, 5 percent of the municipalities—about 1,800—remained isolated.

B. *The 2010 Law*

In December 2010, a new law passed requiring that (i) all municipalities must be part of an IC and (ii) all ICs must contain at least 5,000 inhabitants. This law followed a report issued by the French Court of Auditors indicating that, in general, ICs were too small to achieve economies of scale. The goal of the reform was, thus, to draw a new map of ICs and organize the territory more effectively.[12]

This law forced municipalities that were isolated to enter a community. The only exceptions were Paris and municipalities in three départements around it[13] as well as a few islands that make up one municipality. The law also forced existing small ICs to merge with other communities in order to comply with the 5,000 inhabitant threshold. This threshold did not apply to ICs in mountain zones, where municipalities are far from each other. I focus on the first aspect of the law and look at what happened to the municipalities that were not part of an IC before 2010. I call them resisting municipalities, given that they chose not to join any IC until forced to.[14]

Figure 1 shows the geographic distribution of French municipalities depending on their integration status in 2010. Red indicates that the municipality was still not integrated in 2010; blue indicates that the municipality was already part of an IC. The light gray areas are municipalities excluded from the sample, as further explained in Section IIA. Even if many isolated municipalities are located in the center north, red municipalities are present in all French regions.

Implementation of the reform took place between 2011 and 2014 and was conducted by the departmental prefect (the state representative in the département). In 2010, municipalities forced to enter an IC shared a border with 1.7 ICs on average. Those neighboring more than one IC could choose which to join, but the decision had to be approved by the prefect. When possible and if allowed by the prefect

[12] The 2010 law also changed the rule for the allocation of seats on the intermunicipal council (which still remains tightly linked to population size), as well as the way municipal councilors are elected (directly by voters during municipal elections). These changes became effective only after the 2014 municipal elections. All municipalities were already part of an IC by then, so the changes affected all municipalities the same way.

[13] Paris and municipalities in three départements around Paris (Hauts-de-Seine, Seine-Saint-Denis, and Val-de-Marne) were exempt from this law as they are part of the "Great Paris" project, which aims at consolidating the Paris metropolitan area.

[14] In particular, it never happened that one of these municipalities tried to integrate before 2010 but was rejected by an IC. More generally, an IC can refuse the entrance of a municipality only under very specific conditions and under the approval of the prefect. In practice, it almost never happened.

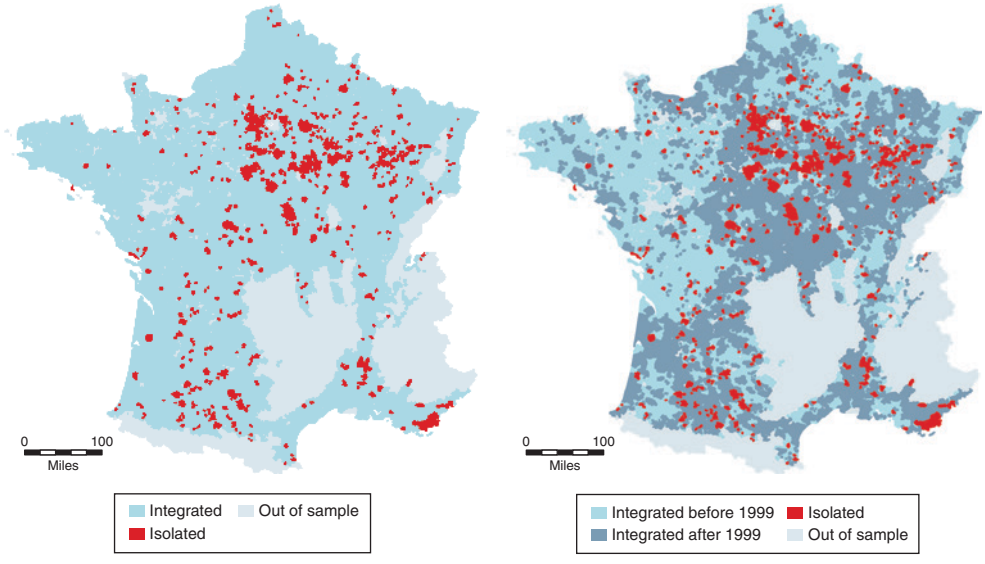

FIGURE 1. FRENCH MUNICIPALITIES DEPENDING ON THEIR INTEGRATION STATUS IN 2010

Notes: Municipalities in red were not part of an IC in 2010. Municipalities in blue were already integrated. Among municipalities already integrated, the right-hand map further distinguishes those that voluntarily integrated before 1999 (in blue) from those that voluntarily integrated between 2000 and 2010 (in dark gray). Light grey areas represent municipalities excluded from the sample of analysis, as explained in Section IIA.

they could also create a new IC with neighboring isolated municipalities. The process had to be finalized by 2014. If a municipality was still isolated in 2013, the prefect could force its integration into the IC she chose. At the end, 77 percent of the isolated municipalities entered an IC between 2011 and 2013, and 23 percent entered in 2014. This timing was greatly affected by the prefects themselves, some having initiated the process sooner after the law than others. The majority of municipalities (73 percent) joined an existing community; the rest created new ICs. As shown in Section VIA, the consequences of integration do not depend on the number of options the municipality had or on the type of IC it was forced to enter. This is consistent with all the integration options being considered equally undesirable and with resisting municipalities' decision not to join any neighboring ICs prior to the law.

On average, municipalities forced to integrate made up 5.6 percent of the population of the community they joined. In 2014, the average IC included 17 municipalities and 28,126 inhabitants.

C. *Data*

Municipalities' Characteristics.—The municipality characteristics I use for the descriptive statistics and for the heterogeneity analysis come from various sources. Municipalities' sociodemographic characteristics are available from censuses conducted by the National Institute of Statistics and Economic Studies (INSEE). INSEE also provides a classification of rural and urban municipalities as well as

the composition of French urban areas. Municipalities' geographical coordinates are obtained from the National Geographic Institute (IGN). Household taxable income data aggregated at the municipality level are provided by the Ministry of Finance (DGFiP) and extracted from income tax declarations. Municipal and presidential electoral results are obtained from the Ministry of the Interior (Ministère de l'Intérieur Français) and mayors' characteristics from the National Directory of Elected Officials (RNE). ICs' municipal composition and the list of mountain-zone municipalities are provided by the General Directorate of Local Authorities (DGCL).

Finally, data on municipalities' land use come from Combes, Duranton, and Gobillon (2021). The share of built land is computed considering all construction, whereas the average height and floor-to-area ratio (FAR) are computed considering only housing construction. To measure the FAR stringency, I follow Combes, Duranton, and Gobillon (2021) and take the thirtieth percentile of the distribution of realized FARs of all housing buildings in the municipality. I also show the statistics using the median.

Housing Building Permits.—Housing building permits data come from the Ministry of Sustainable Development's sitadel database (Ministère de la Transition Ecologique et de la Cohésion des Territoires). The dataset contains the number of housing building permits delivered every year in each municipality over 1999–2018.[15] More precisely, it provides the number of housing units allowed for construction. Hence, if a building of ten apartments was approved, the dataset registers ten authorized housing units, even if only one permit was delivered. The database also indicates whether the unit is a house (single-family home) or an apartment (unit part of a multiple-family home), whether the unit is a primary or secondary residence, the intended usage of the unit (for one's self, renting, or selling), and whether the construction takes place on empty land or as an extension to an existing building.

Housing Prices.—Building on Combes, Duranton, and Gobillon (2018) and following INSEE's guidelines (Gouriéroux and Laferrère 2009; Musiedlak and Vignolles 2016), I measure housing prices at the municipal level using official transactions records of non-new dwellings and adjusting for housing characteristics. The data are available from the Ministry of Sustainable Development for every even year since 2000, separately for the Parisian region of Île-de-France and for the rest of France. Transaction data are available until 2014 (resp. 2016) for Île-de-France (resp. the rest of the country). To build municipal housing price indices, I regress separately for each year the log of the price per square meter on the characteristics of the dwelling. I then compute the indices as the average of the residuals for each municipality and year, after adding the regression constant. Since I center the explanatory variables, the resulting indices can be interpreted as the price per square meter of a reference dwelling. Online Appendix D provides further details on the construction of the indices.

[15] I focus on ordinary housing, excluding residences providing particular services such as medical or retirement residences.

Economic Activity.—I measure firm creation using the number of new establishments created in a municipality during a given year. The data are obtained from INSEE and cover 2007–2018. As an alternative proxy for economic activity, I use the total wages of the municipality's residents over 2002–2016, obtained from the annual declaration of social data (DADS).

Local Public Services.—I gathered novel data on two local public services commonly transferred to the IC level: daycares and municipal libraries. Daycare data come from the Family Allowance Agency, which gives the number of daycare facilities and the total number of daycare spots available in each municipality for every year over 2007–2018. Data on the location of municipal libraries come from a yearly survey run by the Ministry of Culture from 2009 to 2018 (Ministère de la Culture). While all French départements ended up participating in the survey, only seven were surveyed in 2009. The analysis of public libraries is thus restricted to those départements.

I also gathered data on public schools, a largely centralized public service which is unlikely to be directly affected by intermunicipal cooperation. I obtained data on the number of preschools (*maternelle*) and primary schools in each municipality over 2009–2018 from the Ministry of Education (DEPP). Data on higher-level schools (including secondary schools, high schools, and universities) come from the Central Education Database (BCS) made available by the Quetelet network for 2004–2018.

Public Transport.—Information on municipalities' access to public transport comes from the Center for Studies and Expertise on Risk, the Environment, Mobility and Development (CEREMA), which surveys public transport operators every year in all French regions except Île-de-France. Operators report the list of municipalities served by their network. I thus know, for each year, which municipalities have access to a public transport network. The database includes all regular public transport networks that are managed at the municipal or intermunicipal level, accounting for about half of French public transport networks and 90 percent of all public transit trips (the other networks are managed at the departmental or regional level). Specific and temporary transports such as school bus services or transport services during market days are not included in the database. Data are available for every year until 2017, when the survey ended.

Fiscal Revenues.—I use municipalities' and ICs' annual accounts that are made publicly available by DGFiP from 2010 to 2018. For years prior to 2010, the data come from Fabre (2021).

II. Empirical Strategy

A. *Sample of Analysis*

This paper uses a difference-in-difference strategy in order to assess the impact of integration on resisting municipalities. More precisely, I compare, before and after

the 2010 law, municipalities that were not part of an IC in 2010—and thus forced to integrate—with municipalities that were already part of an IC in 2010—and thus not affected by the law.

I consider a balanced panel of municipalities and I focus on metropolitan France, excluding overseas territories and Corsica. I also exclude law exceptions: municipalities exempt from the law (Paris, municipalities in the three départements around Paris, and a few islands), and where the law applied differently (municipalities in mountain zones).[16]

My treatment group is made of municipalities that were still isolated in 2010. I distinguish two types of municipality among those already integrated: (i) those that were already integrated by 1999 and thus had entered an IC long before the law and (ii) those that integrated between 2000 and 2010 and thus entered an IC closer to the law. To make sure that control municipalities are not affected by their shift in integration status during the period of interest, I restrict the control group to group A and focus on the time period around the 2010 law, from 2004 to 2018.[17] The results are robust in both significance and magnitude to varying the latest date of integration of the control municipalities, from including only municipalities that integrated before 1999 to including all municipalities already integrated in 2010 (see online Appendix B1).

The final main sample of analysis is a balanced panel of 16,396 municipalities: 15,097 in the control group and 1,299 in the treatment group (8 percent). To illustrate the sample, Figure 2 plots the share of municipalities part of an IC, separately for the control group (blue line) and the treatment group (red line). By construction, all municipalities in the control group belonged to an IC by 1999 and over the whole period. In contrast, no municipality in the treatment group belonged to an IC before 2010. After the law, treated municipalities gradually enter a community and, by 2014, all municipalities from the sample are integrated.[18] Finally, the gray dotted line displays the integration of the 11,894 municipalities that integrated between 2000 and 2010. While these municipalities are excluded from the main sample of analysis, I will take advantage of their staggered integration to assess the impact of integration on municipalities that voluntarily integrated and compare it with the experience of municipalities forced to integrate (see Section IIIB).[19]

[16] As noted in Section IB, as municipalities in mountain zones are small and far from each other, the 2010 law applied differently. First, the prefect had less leverage to force them to enter an IC, as her decision had to be approved by the local mountain committee, which slowed down the process. By 2013, only 60 percent of these municipalities were integrated, compared to 77 percent outside of mountain zones. Second, communities in mountain zones were not subject to the 5,000 population threshold, meaning that isolated municipalities were free to create or join smaller ICs.

[17] This definition of the sample excludes the less than 1 percent of municipalities whose integration status changed over 1999–2010: isolated municipalities in 2010 that were part of an IC at some point between 1999 and 2010 as well as municipalities that were part of an IC in 2010 but briefly isolated at some point between 1999 and 2010. The results remain unchanged if I include them.

[18] There are only two exceptions: one municipality integrated in 2015 and another in 2017. Both went to court to challenge the decision made by the prefect but ultimately had to comply with it.

[19] I focus on municipalities that joined an IC starting in 2000 to assess the impact of voluntary integration for two reasons. First, the municipal composition of French ICs is only available from 1999, meaning that we do not know in which year municipalities that integrated earlier entered an IC. Second, the structure of ICs changed following the Chevènement law in 1999. Hence, municipalities that integrated voluntarily after 1999 entered ICs closer in characteristics to the ICs that resisting municipalities entered, making the comparison more relevant.

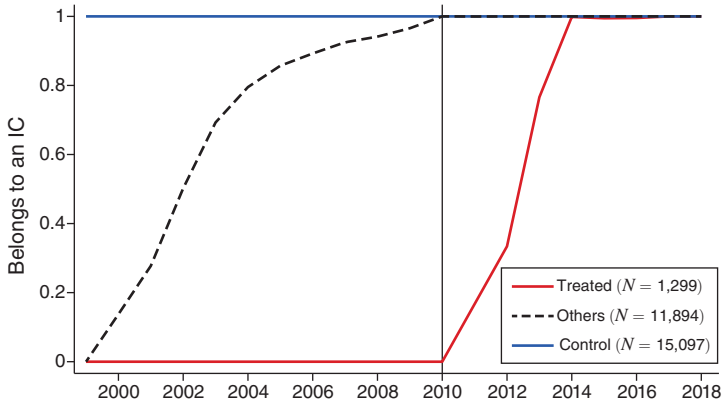

FIGURE 2. INTEGRATION STATUS

Notes: This graph plots the share of municipalities part of an IC separately for the treatment group (red line) and the control group (blue line). The gray dotted line represents municipalities that integrated between 2000 and 2010 and are excluded from the main sample of analysis.

B. *Descriptive Statistics*

Table 1 provides descriptive statistics on the treatment group in 2010 and compares treated municipalities with municipalities that were already integrated.

The first panel displays sociodemographic characteristics. On average, a treated municipality had 1,640 inhabitants in 2010, versus 1,711 for an integrated municipality. While treated municipalities are slightly denser on average, they exhibit similar population growth between 1999 and 2010 and the share of urban municipalities is quite comparable across the two groups. The population composition of treated municipalities is also similar compared to other municipalities, in terms of age composition, average number of children per family, and share of immigrants and unemployed workers. Treated municipalities have a larger share of executives on average (7.0 versus 5.3 percent for integrated municipalities). Accordingly, residents are on average richer: the average annual taxable income per capita is 14,064 euros in 2010 in treated municipalities against 12,621 euros in the other municipalities. Note, however, that the standard deviation in the treatment group is large (4,362), indicating that it encompasses both rich and poor municipalities.[20]

As shown in panel B, treated municipalities' land use is similar to that of integrated municipalities in 2010, suggesting that they do not systematically differ in their housing and land-use regulations. The share of built land in treated municipalities is 0.74 percent on average (against 0.73 percent in integrated municipalities), the

[20] Given that integrated municipalities benefit from additional state transfers allocated to their IC and that they share their tax revenues at the IC level, comparing treated and integrated municipalities' fiscal revenues in 2010 would not accurately reflect their relative wealth. Instead, I compare the 2002 fiscal revenues of resisting municipalities with those of municipalities that integrated voluntarily before 2010 but later than 2002 (the first year for which account data are available). In 2002, the average fiscal revenue of resisting municipalities was 581 euros per capita, compared to 523 for municipalities that voluntarily integrated after 2002. This is consistent with the gap found on residents' income in Table 1 and, as for income, the treatment group displays a large standard deviation (346).

Table 1—Descriptive Statistics—2010 (Panels A and B)

	Treated municipalities ($N = 1{,}299$)				Integrated municipalities ($N = 26{,}991$)			
	mean	SD	min	max	mean	SD	min	max
Panel A. Sociodemographic characteristics								
Population	1,640	4,692	16	72,939	1,711	9,608	3	851,420
Δ population	0.102	0.160	−0.397	1.385	0.100	0.152	−0.500	2.692
Density	162.1	541.6	2.11	6,884	140.9	422.4	0.161	9,976
Urban	0.204	0.403	0.000	1.000	0.209	0.406	0.000	1.000
Urban area	0.637	0.481	0.000	1.000	0.610	0.488	0.000	1.000
Core urban area	0.091	0.287	0.000	1.000	0.108	0.310	0.000	1.000
Immigrants	0.044	0.040	0.000	0.333	0.038	0.039	0.000	0.667
Unemployed	0.082	0.039	0.000	0.571	0.087	0.040	0.000	0.429
Below 5 years old	0.060	0.020	0.000	0.172	0.061	0.021	0.000	0.206
Above 65 years old	0.170	0.066	0.000	0.522	0.178	0.065	0.000	0.667
Av. number of children	0.907	0.245	0.000	2.000	0.892	0.228	0.000	3.000
Farmers	0.036	0.053	0.000	0.444	0.038	0.052	0.000	1.000
Executives	0.070	0.065	0.000	0.429	0.053	0.045	0.000	0.563
Workers	0.152	0.080	0.000	1.000	0.166	0.071	0.000	1.000
Retired	0.280	0.101	0.000	0.800	0.288	0.098	0.000	1.000
No diploma	0.172	0.069	0.000	0.463	0.183	0.067	0.000	0.674
Baccalaureate	0.156	0.039	0.000	0.324	0.153	0.037	0.000	0.557
High education	0.088	0.071	0.000	0.507	0.073	0.046	0.000	0.542
Residents' income	14,064	4,362	5,495	59,093	12,621	2,908	3,273	65,758
Panel B. Land-use characteristics								
Share built land (%)	0.742	1.416	0.024	15.882	0.725	1.330	0.004	25.987
Average height	1.561	0.216	1.048	4.727	1.560	0.187	1.000	4.391
FAR (p30)	0.110	0.076	0.001	0.901	0.106	0.078	0.000	1.465
FAR (p50)	0.171	0.116	0.003	1.812	0.169	0.118	0.003	1.901

(*continued*)

Notes: Sociodemographic variables come from the 2008 census, which applies to the year 2010. The variation in the population (line 2) is computed by comparing the 1999 and 2008 censuses. Indicator variables for whether the municipality is urban, part of an urban area, or in the urban core are based on the INSEE 2010 classification. Land-use characteristics come from Combes, Duranton, and Gobillon (2021) and each variable is built considering only construction before 2010. The share of built land is computed considering all construction, whereas the average height and FAR are computed considering only housing construction. The average height gives the average number of housing stories. To measure the FAR stringency, I follow Combes, Duranton, and Gobillon (2021) and take the thirtieth percentile of the distribution of realized FARs of all housing buildings in the municipality (FAR p(30)). I also show the statistics using the median (FAR p(50)).

average height of housing constructions is 1.6 stories for both types of municipality, and their measures of FAR stringency are very similar.

Overall, treated municipalities are quite representative—based on observables—of an average French municipality. This is reassuring for the identification strategy, as we would not expect completely different groups to display parallel trends in the outcomes of interest. Moreover, the set of treated municipalities is very diverse, which will enable me to perform heterogeneity analysis and to provide evidence that different types of municipality face different consequences of integration.[21]

[21] Instead of looking at all integrated municipalities, online Appendix Table A1 provides the same statistics as in Table 1 but restricting the second group to the control municipalities used in the main estimation. The *t*-tests of the differences between the control and treatment groups are displayed in online Appendix B3, along with the matching analysis. Online Appendix Table A2 replicates the first panel of Table 1 using municipalities' characteristics in 1999 instead of 2010. Finally, online Appendix Tables A3 and A4 replicate Table 1 for urban and rural municipalities separately. The same patterns emerge in all those tables.

TABLE 1—DESCRIPTIVE STATISTICS—2010 (PANEL C) (*continued*)

	Treated municipalities ($N = 1{,}299$)				Integrated municipalities ($N = 26{,}991$)			
	mean	SD	min	max	mean	SD	min	max
Panel C. Political characteristics								
Turnout municipal	0.763	0.096	0.431	1.000	0.779	0.090	0.367	1.000
Turnout presidential	0.874	0.040	0.655	1.000	0.873	0.040	0.000	1.000
Voteshare right	0.602	0.107	0.152	1.000	0.563	0.105	0.106	1.000
Voteshare far right	0.138	0.057	0.000	0.467	0.130	0.054	0.000	0.556
Right-wing mayor	0.620	0.486	0.000	1.000	0.559	0.496	0.000	1.000
Left-wing mayor	0.267	0.443	0.000	1.000	0.337	0.473	0.000	1.000
Nonclassified mayor	0.112	0.316	0.000	1.000	0.103	0.304	0.000	1.000
Woman mayor	0.161	0.368	0.000	1.000	0.142	0.349	0.000	1.000
Age mayor	57.1	9.1	25.0	87.0	56.1	8.7	18.0	88.0
Incumbent mayor	0.661	0.474	0.000	1.000	0.624	0.484	0.000	1.000
Change orientations	0.210	0.407	0.000	1.000	0.221	0.415	0.000	1.000

Notes: The municipal turnout rate and mayor's characteristics are based on the results of the 2008 municipal elections. The presidential turnout rate and far-right vote share come from the results of the first round of the 2007 presidential elections. The right-wing vote share comes from the results of the second round of the 2007 presidential elections.

The last panel displays municipalities' political characteristics, based on the results of the 2008 municipal and 2007 presidential elections. Treated municipalities are more likely to have a right-wing mayor (62.0 versus 55.9 percent) but the turnout rate in municipal and presidential elections, the share of voters voting for the far-right in presidential elections, and the probability of having a mayor not affiliated with any party are comparable across the two groups. Mayors of treated municipalities are slightly more likely to be women, but they have the same age on average as mayors in other municipalities. Finally, treated municipalities have as much political turnover as any other municipality. The average probability that the mayor is the incumbent and has thus been in place since at least 2001 and the probability that the municipality changed political orientation between 2001 and 2008 are very similar in treated and integrated municipalities (66.1 versus 62.4 percent and 21.0 versus 22.1 percent, respectively).

The fact that treated municipalities are as likely as others to have elected a new mayor in 2008 suggests that their resistance is unlikely to be driven by mayors' individual interests or political preferences. Instead, it suggests that something structural explains why these municipalities kept refusing to integrate across electoral mandates.[22] Assessing the actual consequences of integration is, thus, key to understanding why they resisted integration in the first place.

C. *Specification and Identification*

I estimate the following specification for all municipalities in the main sample of analysis over 2004–2018:

$$(1) \qquad Y_{mt} = \alpha + \beta \mathbf{1}\{t > 2010\}\mathbf{1}\{treated_m = 1\} + \delta_t + \theta_m + \varepsilon_{mt},$$

[22] Furthermore, online Appendix Tables A28 and A29 show that the costs of integration—the effects on construction and public services—are similar whether the mayor was the incumbent or newly elected.

where m stands for the municipality and t for the year. $\mathbf{1}\{t > 2010\}$ is an indicator variable equal to 1 for years after the reform, starting in 2011. $\mathbf{1}\{treated_m = 1\}$ is an indicator variable equal to 1 for municipalities that were isolated in 2010 and thus forced to join an IC (treatment group), and 0 for municipalities already integrated by 1999 (control group). δ_t and θ_m are time and municipality fixed effects, respectively. The inclusion of municipality fixed effects controls for any time-invariant unobserved factors; the inclusion of year fixed effects captures changes over time that affect all municipalities the same way. Standard errors are clustered at the municipality level.[23]

Outcomes are standardized in order to give the same weight to municipalities of different sizes. I divide each outcome by the 2010 municipal population and then multiply by 10,000. Hence, Y_{mt} is, for instance, the number of housing building permits delivered in municipality m during year t per 10,000 inhabitants, using the 2010 population. In an alternative specification, I divide the outcome by the current population of year t using the number of households living in the municipality.[24] The results remain qualitatively unchanged, as further discussed in the main text.

The identification assumption is that, absent the law, municipalities in the control and in the treatment groups would have evolved the same way. Under this assumption, the main coefficient of interest β captures any deviation from a parallel evolution in the outcome of interest between the treatment and the control groups due to the 2010 law. I outline below the additional analyses I perform to support the identification strategy.

Selection into Treatment.—The first concern is the selection into treatment: municipalities in the control group chose to integrate early, whereas those in the treatment group chose to remain isolated. The question is whether we can expect those two groups to display parallel trends in the outcomes of interest. Two main aspects of the setting might threaten the validity of the common trend assumption. I address them formally below.

First, the fact that treated municipalities resisted integration implies that they differ in some aspects and these differences might affect their trends. Reassuringly, Section IIB shows that treated municipalities are quite similar to other municipalities based on sociodemographic, land-use, and political characteristics. Still, in Section VIB, I also show that, while similar on average, treated municipalities tend to join ICs encompassing larger municipalities and lose more bargaining power upon integration, ultimately explaining why they bear the costs of integration. The identification thus rests on the assumption that these differences are orthogonal to the outcomes' trajectories absent treatment. This seems plausible: if having relatively larger neighbors influenced public service and construction trends prior to 2010, we would expect the two groups to

[23] I also run specifications with standard errors clustered at the IC level, considering municipalities' IC either in 2014 or 2018. While, as expected, the standard errors are generally slightly larger, all main results remain significant at similar levels (see online Appendix B2).

[24] The municipal population computed by the annual census is an average over five years, with different municipalities being surveyed at different times. The census survey's method makes any census measures challenging to use in a panel. I thus approximate municipalities' size in year t using the number of households computed by the Ministry of Finance based on income tax declarations.

differ in 2010 based on sociodemographic and land-use characteristics, which is not the case (Table 1). Instead, I argue that these differences start to matter only once part of an IC, as they make municipalities less able to fight ICs' decisions. Hence, the goal of the analysis is to assess whether this lower bargaining power led resisting municipalities to experience local costs of integration, explaining why they resisted integration in the first place. This can be seen as a test of the essential heterogeneity model (Heckman, Urzua, and Vytlacil 2006) where agents choose whether or not to take the treatment anticipating its effects and, thus sorting on the gains and losses. The French setting gives us a unique opportunity to assess the impact of the treatment—here, integration—on those who opposed it. If municipalities resisted integration because they anticipated bearing the costs, we should see effects on their housing construction and local public services.

Second, one could question whether control municipalities experience different trends because they are part of an IC. Removing municipalities that integrated after 1999 alleviates the concern that control municipalities' shifts in integration status affect their trends during the period of interest. Nevertheless, being part of an IC might cause control municipalities to evolve differently across time and to react differently to shocks.

This is ultimately an empirical question and, while the common trend assumption cannot be directly tested, I run several analyses to provide support for it.

First, when presenting the results, I systematically test for the presence of pre-trends by plotting for each outcome the coefficients of the following leads-and-lags regression:

$$(2) \qquad Y_{mt} = \alpha + \sum_{k=2004}^{2018} \beta_k \mathbf{1}\{t = k\} \mathbf{1}\{treated_m = 1\} + \delta_t + \theta_m + \varepsilon_{mt},$$

where $\mathbf{1}\{t = k\}$ is an indicator variable equal to 1 for year k. All coefficients are normalized relative to 2010. On top of visually inspecting the pre-trends, I test for the significance of the pretreatment estimates and for their joint significance.

Second, I estimate the impact of a series of placebo reforms by pretending that treated municipalities were forced to enter an IC before 2010 and excluding the actual treatment period from the estimation (online Appendix Figure B4). The results of the placebo exercise are discussed in the main text.[25]

Finally, I show that the main results are robust to using propensity score matching (online Appendix B3) and that they are robust to including time-varying controls—namely, municipality size proxied by the number of households and the average household's annual taxable income—as further discussed in the result sections.

Control Municipalities Affected.—We can interpret the estimated β of Equation (1) as the causal impact of integration on the treated municipalities, provided that only municipalities in the treatment group are affected by the law.

[25] I cannot run the placebo tests on daycares and public libraries, given the few pretreatment periods I have in the data. This analysis is thus restricted to the number of building permits, fiscal revenues, and public transport.

However, some municipalities in the control group might also be impacted—those that are part of an IC into which a treated municipality entered, as well as those that are part of ICs that fall below the 5,000 inhabitant threshold and therefore had to enter a larger IC or whose IC had to merge with another one. Online Appendix B5 reports the main results using several alternative control groups: excluding control municipalities whose IC received a treated municipality, excluding all control municipalities whose IC changed between 1999 and 2014 as a result of the 2010 law, excluding all control municipalities sharing a common border with a treated municipality to address potential spillovers, and excluding all the aforementioned control municipalities. The effects are very similar across these samples, supporting the fact that the estimated effects capture the impact on the treated municipalities only.

III. Impact on Housing Supply

A. *Impact on Municipalities Forced to Integrate*

I estimate the impact of integration on the number of housing building permits delivered in municipalities forced to enter an IC. The outcome is the number of housing units allowed for construction in a given year per 10,000 inhabitants (using the 2010 population).

Figure 3 plots the coefficients of the leads-and-lags regression. Vertical lines represent the 95 percent confidence intervals. First, no coefficient before 2010 is significant and all coefficients prior to the law are close to zero in magnitude. The F-statistic for the joint significance of the prereform estimates is 0.74 (p-value 0.617). In line with the absence of pre-trends, none of the placebo reforms have a significant effect on housing supply (online Appendix Figure B4). The fact that control and treated municipalities followed similar housing growth trajectories before 2010 is consistent with the fact that they share similar characteristics (Section IIB) and that the main difference between them is their relative bargaining power inside their ICs (as further discussed in Section VIB). This difference starts to matter only once resisting municipalities enter an IC and start bearing the local costs of integration.

Indeed, after the 2010 law, we observe a large increase in the building permits delivered in treated municipalities compared to control municipalities. The increase starts in 2012, reflecting the fact that most municipalities forced to integrate joined an IC after 2011. Moreover, when splitting the treatment group according to the exact year municipalities entered an IC, we see that the increase starts right after their integration (online Appendix Figure A1).[26] This is consistent with the effect capturing the impact of integration rather than of other potential factors affecting the two groups differently after 2010.

[26] Online Appendix Figure A1 presents the result separately for the 434 municipalities that integrated in the first two years after the law (corresponding to 33.4 percent of the treatment group), the 561 municipalities that integrated in 2013 (43.2 percent), and the 302 municipalities that integrated in 2014 (23.3 percent). Each analysis considers a subset of treated municipalities, reducing the power of the analysis and explaining the larger standards errors in these graphs compared to the main analysis (Figure 3).

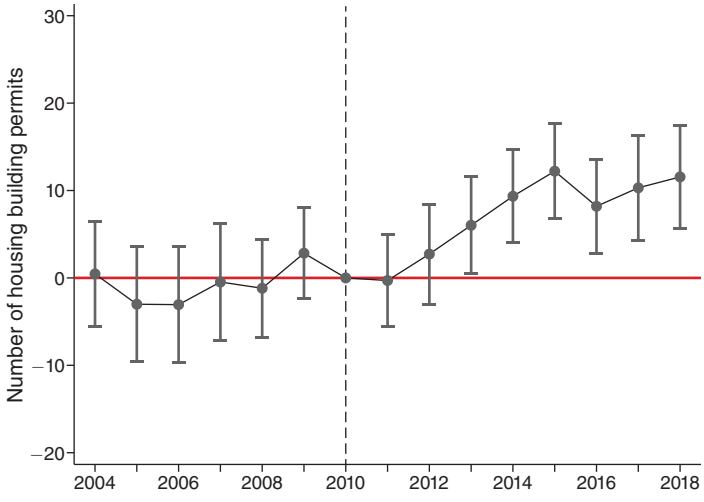

FIGURE 3. IMPACT ON HOUSING BUILDING PERMITS

Notes: This graph plots the estimates and 95 percent confidence intervals from the leads-and-lags regression (see equation (2)). The outcome is the number of housing building permits delivered in the municipality per year per 10,000 inhabitants (using the 2010 population).

Table 2 provides the formal estimate. On average, the number of building permits increased by 8.1 per year per 10,000 inhabitants after 2010 in treated municipalities compared to control municipalities, an effect significant at the 1 percent level (column 1).[27] As, on average, resisting municipalities were delivering 64.8 building permits per year per 10,000 inhabitants before 2010, their integration led to a yearly increase of 12.5 percent.[28]

This increase is partly driven by municipalities that would not have issued any building permit absent the law: the probability that a resisting municipality delivers at least one building permit is 1.9 percentage points higher in the average year after 2010, an effect significant at the 1 percent level (Table 2, column 4). However, the effect is only significant at the end of the period of analysis (online Appendix Figure A2), and the overall impact is larger for municipalities that were already delivering building permits in 2010 (Table 2, columns 2 and 3). This suggests that the intensive margin explains most of the effect in the first years after integration, consistent with high-demand municipalities driving the impact (Section IVC).

The impact is similar in magnitude when dividing the outcome by the number of households in year t instead of the population in 2010 (13.9 percent) and robust to controlling for municipality size and for household annual income in year t (online

[27] The size of the impact is very similar when using propensity score matching (7.2) and the estimate remains significant at the 1 percent level (see online Appendix Table B3.3).

[28] Online Appendix Table A5 considers three alternative specifications that provide treatment effects that can be directly interpreted as percentage changes. Columns 1 and 2 take, as outcome, the log and the inverse hyperbolic sine transformations of the number of building permits, while column 3 estimates a Poisson regression model using the ppmlhdfe stata package (Correia, Guimarães, and Zylkin 2020). I obtain an average treatment effect of 12.6, 14.8, and 20.5 percent, respectively.

TABLE 2—IMPACT ON HOUSING BUILDING PERMITS

Outcome	Number of building permits			
		Delivered a permit in 2010		
	All	Yes	No	At least 1 building permit
	(1)	(2)	(3)	(4)
Treatment	8.141	9.109	4.177	0.019
	(1.517)	(1.910)	(2.434)	(0.007)
p-value (2) = (3)		0.111		
Municipality FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	245,940	182,145	63,795	245,940
Mean dep. var.	64.836	73.834	46.005	0.715
SD dep. var.	90.844	92.110	85.124	0.451

Notes: Standard errors are in parentheses and are clustered at the municipality level. The mean of the dependent variable gives the average of the outcome variable in the treatment group during the prereform period (before 2010). In columns 1 to 3, the outcome is the number of housing building permits delivered in the municipality per year per 10,000 inhabitants (using the 2010 population). In column 4, the outcome is an indicator variable equal to 1 if the municipality delivered at least one building permit on a given year. Column 2 (resp. 3) includes only municipalities that delivered at least one building permit in 2010 (resp. did not deliver any building permit in 2010).

Appendix Table A6). This further suggests that resisting municipalities experienced an increase in building permits per current capita, in line with the impact coming from a change in housing regulations. Moreover, the fact that the impact lasts over the whole posttreatment period (Figure 3) and is similar for municipalities that integrated just after the law or a few years later (online Appendix Figure A1) suggests that the increase in construction is unlikely to come from a temporary adjustment, but rather reflects a more permanent change in regulations.

Finally, to better understand the ramifications of this increase for treated municipalities, online Appendix Table A7 explores the type of housing supply driving the effect. As shown in columns 2 to 8, the new building permits are mostly delivered for the construction of houses (single-family home) and for the construction of primary residences, and between 58 and 79 percent of the effect is driven by homeowners as opposed to renters.[29] These results suggest that forced integration brings new long-term residents to treated municipality. Moreover, in line with the effect being driven by houses, the increase is mainly coming from new construction: the number of building permits to build new housing units on empty land increased by 6.8 on average, while the number of building permits to add units to existing building increased by only 1.3 (columns 9 and 10). This result shows that resisting municipalities had to expand their share of built land once integrated, which is consistent with municipalities losing control over both housing supply and land-use

[29] The data indicate whether the housing unit will be used by the recipient of the permit, or rented, or sold. If we assume that the housing units sold will be rented, 58 percent of the effect is driven by homeowners (dividing the coefficient of column 6 by the overall effect in column 1). Instead, if we assume that the housing units sold won't be rented, 79 percent of the effect is driven by homeowners (adding the coefficients of columns 6 and 8 and dividing by the overall effect).

policies. As nothing prevented them from building more prior to the law, this rise in construction is unlikely to reflect their preferences; it is best interpreted as a consequence of their loss of autonomy.[30]

B. *Comparison with Municipalities That Voluntarily Integrated*

I now investigate the impact of integration on municipalities that joined an IC voluntarily prior to the law. If the increase in housing supply explains why municipalities forced to integrate resisted, we should see a differential impact for municipalities that instead chose to integrate.

I consider municipalities that were previously excluded from the main sample of analysis: those that joined an IC between 2000 and 2010. I apply the same geographical restrictions as for the main sample of analysis (see Section IIA), resulting in a balanced panel of 11,894 municipalities. To estimate the impact of their voluntary integration, I take advantage of the fact that they entered an IC at different times. Formally, I use a staggered adoption design, in which the date of the treatment is the year when the municipality first joined an IC. I run the analysis over the period from 1999 to 2018: in 1999, no municipality in this sample is part of an IC, whereas they all are starting in 2010. I observe municipalities up to 11 years prior to the integration (for municipalities integrating in 2010) and up to 18 years after the integration (for those integrating in 2000). I estimate the following dynamic specification:

$$(3)\quad Y_{mt} = \sum_{d=-5}^{d=5} \beta_d \mathbf{1}\{t = t_{m0} + d\} + \gamma_1 \mathbf{1}\{t < t_{m0} - 5\} + \gamma_2 \mathbf{1}\{t > t_{m0} + 5\} + \delta_t + \theta_m + \varepsilon_{mt},$$

where the year of integration of municipality m is denoted t_{m0}, and d indexes time to integration (negative before integration and positive after). The β_ds measure the difference between municipalities that are part of an IC and those not already part of a community, for each of the five years preceding and following the integration. γ_1 (resp. γ_2) estimates the effect for being more than five years before (resp. after) the integration. All coefficients are normalized relative to the year preceding the integration ($d = -1$). I include time and municipality fixed effects; standard errors are clustered at the municipality level.

In light of the recent literature on the issues associated with event-study designs (e.g., de Chaisemartin and D'Haultfoeuille 2020; Goodman-Bacon 2021; Borusyak, Jaravel, and Spiess 2024), I also use an alternative estimation procedure developed by de Chaisemartin and D'Haultfoeuille (2020). By using "not-yet switchers" as

[30] These effects are unlikely to come from a change in the benefits associated with new construction. If anything, the fact that the housing tax revenues are shared at the IC level after integration should make municipalities even less likely to start new construction. Moreover, if a change of incentives explains the results, we should see similar effects for municipalities that chose to integrate voluntarily prior to the law. Instead, as shown in the next section, municipalities that joined an IC voluntarily prior to the law did not experience the same increase in construction.

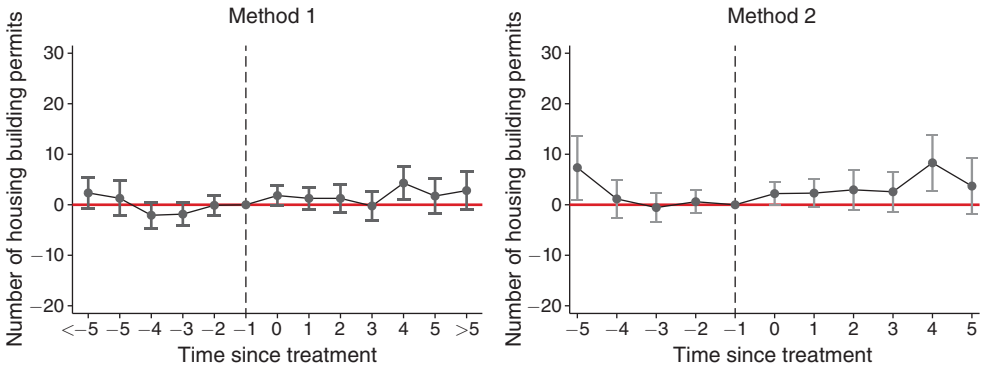

Figure 4. Comparison with Municipalities That Voluntarily Integrated: Housing Building Permits

Notes: The outcome is the number of housing building permits delivered in the municipality per year per 10,000 inhabitants (using the 2010 population). The sample is made up of municipalities that voluntarily integrated between 2000 and 2010. The left-hand graph plots the estimates and 95 percent confidence intervals from a regular staggered adoption design (method 1). The right-hand graph uses de Chaisemartin and D'Haultfoeuille's (2020) method, implemented using the Stata command did_multiplegt, available on the Statistical Software Components repository (method 2). In method 1, the period of analysis goes from 1999 to 2018, whereas in method 2 it goes from 1999 to 2009. More information on the two methods is in Section IIIB.

controls, the authors provide new estimators that are robust to heterogeneous treatment effects across groups and over time.[31]

Figure 4 plots the coefficients, taking as outcome the number of housing building permits delivered per year per 10,000 inhabitants[32] and applying the same scale as in Figure 3. The left-hand graph shows what I obtain using the regular staggered adoption design (referred to as method 1) and the right-hand graph shows what I obtain using de Chaisemartin and D'Haultfoeuille (2020)'s method (referred to as method 2).

In both graphs, only one coefficient is statistically significant in the posttreatment period. The impact of integration is close to zero except in the fourth year after integration, when the number of building permits increases by four to eight, depending on the method. The effect vanishes the year after and remains nonsignificant afterward. These results contrast with the experience of municipalities forced to integrate, namely a large increase in construction starting right after their integration and continuing over the entire posttreatment period (Figure 3 and online Appendix Figure A1).[33] To provide further evidence that the impact of integration

[31] For more details on de Chaisemartin and D'Haultfoeuille (2020)'s method for staggered adoption design, see Section 5.2 of their paper. Note that this method allows me to compute the estimated effect of being a given number of years before or after the treatment, but not to compute the estimated effect of being more than five years before or after the date of the treatment. Both estimates are, thus, absent in the right-hand graph in Figure 4.

[32] Because I consider municipalities integrating from 2000, I divide the outcome by the 1999 population instead of the 2010 population.

[33] This difference is unlikely to be driven by the fact that the two types of municipalites integrated in different periods and thus in different economic climates. In the first specification, I include all years from 1999 to 2018, meaning that I also measure the impact of voluntary integration on the number of building permits delivered after 2010, in the same period as for resisting municipalities. Moreover, the results are similar when focusing on municipalities that voluntarily integrated after 2004, closer to the integration date of the ones forced to integrate (online Appendix Figure A3).

on construction is significantly different for municipalities that were forced to integrate, I estimate the following specification on all municipalities that integrated starting in 2000:

$$(4)\quad Y_{mt} = \alpha + \beta \mathbf{1}\{integrated_m = 1\} + \delta \mathbf{1}\{integrated_m = 1\}\mathbf{1}\{forced_m = 1\} + \delta_t + \theta_m + \varepsilon_{mt},$$

where $\mathbf{1}\{integrated_m = 1\}$ is an indicator variable equal to 1 if the municipality is integrated and $\mathbf{1}\{forced_m = 1\}$ is an indicator variable equal to 1 if the municipality was forced to integrate. The coefficient β measures the average impact on municipalities that voluntarily integrated, and the average impact on municipalities forced to integrate is obtained by summing the coefficients β and δ. As shown in online Appendix Table A8, the effect is three times higher for municipalities forced to integrate and the interaction coefficient is statistically significant at the 1 percent level.

Hence, only municipalities that did not want to enter an IC experienced a significant rise in construction. This differential impact supports the view that treated municipalities opposed integration to avoid a rise in housing supply. It also suggests that mayors' decision to resist was driven by the actual consequences of integration, beyond purely ideological or political considerations. Section VI discusses further the differential impact between resisting municipalities and those that voluntarily integrated and provides additional evidence supporting this interpretation.

C. *Heterogeneity Analysis*

As stressed by the literature on housing restrictions, several stories can explain why municipalities would oppose new construction, depending on their characteristics. First, construction in high-demand and densely built places limits the space available, which can trigger resistance from residents who do not want new buildings in their backyards (Saiz 2010; Hilber and Robert-Nicoud 2013). Second, new construction might increase the population's heterogeneity in municipalities surrounded by different neighbors (Rolleston 1987; Bates and Santerre 1994). Third, through its effect on housing prices, new constructions might decrease the value of residents' assets in municipalities with a large share of homeowners (Fischel 2001; Ortalo-Magné and Prat 2014).

To determine which story best explains municipalities' opposition to construction, I explore which types of municipalities are driving the impact on housing supply. I use the same specification as in Section IIIA and perform heterogeneity analyses along several municipality characteristics measured in 2010, prior to the law. I systematically test whether the difference observed between the subgroups is statistically significant by proceding as follows: if the heterogeneity variable is an indicator variable, I report the *p*-value associated with the coefficient obtained by interacting the treatment variable with the heterogeneity variable in the main table; if the heterogeneity variable is continuous, I present the results obtained by splitting the full sample at the median value of the heterogeneity variable in the main table, while online Appendix C reports the results obtained from interacting the treatment variable with the continuous heterogeneity variable. In this case, the coefficient

associated with the interaction term gives the change in the treatment effect coming from a 1 standard deviation increase in the heterogeneity variable.

NIMBYism.—If NIMBYism explains resistance, we should see that the impact on construction is stronger in high-demand and densely built municipalities, where residents' concern over density is higher. Indeed, attractive locations will have a larger share of developed land and residents will therefore be more likely to oppose new construction so as to prevent further increases in housing density (Gyourko and Molloy 2015).

I proxy municipalities' attractiveness by their location in the urban area. Consistent with the monocentric model,[34] the demand for housing in French municipalities is the highest closer to the local center of employment and thus closer to the core of the urban area (Combes, Duranton, and Gobillon 2018). Accordingly, municipalities that are part of an urban area also have a higher share of built land.[35] As shown in Table 3 and online Appendix Figure A4, the impact on housing supply is driven by treated municipalities that are part of an urban area: after integration, they experienced an average increase of 10.5 in the number of building permits delivered per year per 10,000 inhabitants, an effect significant at the 1 percent level, while municipalities outside any urban area experienced an average increase of only 3.1, which is not significant (columns 2 and 3). This difference is statistically significant at the 5 percent level. Among municipalities part of an urban area, the increase is also significantly larger for municipalities in the core (24.5 or 38.3 percent per year, column 5), and a shorter Euclidean distance to the core is associated with a stronger effect of integration on housing supply (online Appendix Table C1). Using residents' income as an alternative measures of attractiveness, I also find that the impact on construction is higher the richer the municipality (online Appendix Tables A9 and C2).[36]

Focusing on municipalities inside an urban area, online Appendix Table A11 and Figure A5 show that the effect tends to be larger for urban municipalities than rural municipalities (15.5 versus 9.9, columns 3 and 2) and for municipalities above the housing density median (13.9 versus 9.3, columns 5 and 4), although these differences are not statistically significant. Interacting the treatment variable with housing density, online Appendix Table C3 indicates that a 1 standard deviation increase in housing density increases the treatment effect by 8.5—or more than half—compared

[34] The monocentric model predicts that the housing demand is the highest in the center (Alonso 1964). This is consistent with most housing markets in developed countries, with the notable exception of the United States, where the more desirable places are usually in the suburbs (see, for instance, Jackson 1987).

[35] Close to the definition of American metropolitan areas, a French urban area is defined as a group of neighboring municipalities encompassing an urban core (urban unit) providing at least 5,000 jobs, and by rural districts or urban units (urban periphery) among which at least 40 percent of the employed resident population works in the core or in the municipalities attracted by this core. I use the 2010 urban area breakdown and consider both large (providing at least 10,000 jobs) and medium (providing between 5,000 and 10,000 jobs) urban areas. The results are left unchanged when using the 1999 breakdown instead. In 2010, France counted 372 urban areas, encompassing two-thirds of the municipalities and 85 percent of the population. The average share of built land in municipalities that are part of an urban area is 1.1 percent, versus 0.4 percent for municipalities outside any urban area.

[36] Due to income sorting, residents' income is positively correlated with the probability that a municipality is part of an urban area. To alleviate the concern that the income heterogeneity results are solely driven by this correlation, online Appendix Table A10 replicates Table A9 considering only municipalities that are part of an urban area. As for the full sample, the impact is twice as large for municipalities above the income median.

Table 3—Impact on Housing Supply: Urban Area

Outcome	Number of building permits per 10,000 inhabitants				
		Urban area		Urban area core	
	All	Outside	Inside	Outside	Inside
	(1)	(2)	(3)	(4)	(5)
Treatment	8.141	3.105	10.494	9.621	24.471
	(1.517)	(2.585)	(1.812)	(1.831)	(5.362)
p-value (2) = (3), (4) = (5)		0.019		0.009	
Municipality FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Observations	245,940	94,440	151,500	122,715	28,785
Mean dep. var.	64.836	66.897	63.660	63.624	63.875
SD dep. var.	90.844	99.952	85.197	82.935	97.750

Notes: Standard errors are in parentheses and are clustered at the municipality level. The mean of the dependent variable gives the average of the outcome variable in the treatment group during the prereform period (before 2010). The outcome is the number of housing building permits delivered in the municipality per year per 10,000 inhabitants (using the 2010 population). Column 2 (resp. 3) includes only municipalities that are not part (resp. part) of an urban area. Column 4 (resp. 5) focuses on municipalities inside an urban area and includes only municipalities that are not part (resp. part) of the core of the urban area. The municipal composition of urban areas is based on the INSEE 2010 breakdown, and I consider both large (providing at least 10,000 jobs) and medium (providing between 5,000 and 10,000 jobs) urban areas.

with the impact on housing for an average treated municipality in the urban area, an estimate significant at the 1 percent level. These results suggest that the effect is even larger for municipalities that are relatively more densely built and, thus, where new construction most reduces the space available.[37]

Finally, the differential impact between more or less dense municipalities is unlikely to be explained by the fact that these municipalities enter different types of ICs. As shown in online Appendix Tables A12 and C3, the impact remains larger for municipalities with higher housing density levels, even when considering only municipalities ending up in ICs required by law to issue the most stringent housing plans (CA and CU; see Section IA).

Taken together, these results suggest that municipalities that opposed integration to keep control over their housing supply are mainly high-demand municipalities trying to avoid new construction in their backyards.

Neighbors' Characteristics.—Alternatively, municipalities might oppose new construction to avoid different people coming in, particularly poorer households and/or minorities.

First, while the data do not specify whether or not the building permit is delivered for social housing, the increase in construction is unlikely to come from additional social housing. In France, social housing is concentrated in the largest municipalities

[37] Based on international standards, an urban municipality is a municipality belonging to an urban unit, defined as a continuously built up zone (no cut of more than 200 meters between two constructions) with at least 2,000 inhabitants. Housing density is defined as the number of housing units per square kilometer in 2010.

(above 3,500 inhabitants), where it is mandatory (Gobillon and Vignolles 2016). As shown in online Appendix Table A13, the impact on housing supply is very stable across municipality size, with municipalities below 1,000 or below 500 inhabitants experiencing a similar rise in construction per capita.

Still, new regular housing could bring different people in. If this is why municipalities opposed construction, we should see a stronger effect for municipalities surrounded by neighboring municipalities that are more different from them. I consider several heterogeneity dimensions: per capita residents' annual taxable income, the share of unemployed workers, and the share of immigrants. For each, I construct a ratio equal to the value for the municipality divided by the average value in neighboring municipalities, weighted by their population. For instance, the immigration ratio indicates whether the proportion of immigrants in a given municipality in 2010 was greater than, less than, or equal to the average proportion in surrounding municipalities. I define surrounding municipalities as all other municipalities from the same département, including but not limited to those from the same IC. The results are robust if I instead define surrounding municipalities as direct neighbors—those sharing a border (online Appendix Tables A14 and C5).

Table 4 reports the impact on housing supply depending on whether the municipality is above or below the median value of the ratio. If municipalities were trying to prevent poorer people from coming in, we should see a stronger effect the richer the municipality is compared with its neighbors and, thus, the higher the income ratio. Instead, the impact is very similar for municipalities below and above the median (8.0 and 7.4, columns 2 versus 3). Conversely, if municipalities resisted because they expected more immigrants or unemployed workers to come, we should see that the effect is larger the smaller the municipality's share of immigrants or unemployed compared with those of its neighbors and, thus, the smaller the ratios. Instead, the impact is larger for municipalities above the median (columns 4 to 7).[38] The effect is even surprisingly large for municipalities above the unemployment ratio median (column 7). However, the estimate obtained by interacting the treatment variable with the unemployment ratio is small and not significant, indicating that this result should not be overinterpreted. Similarly, the interactions with the income and immigrant ratios provide small and nonsignificant estimates (online Appendix Table C4).

Next, I consider two measures capturing political heterogeneity. I first look at whether, in 2010, the mayor had the same political orientation as the member of parliament elected by the municipality's legislative district, indicating whether or not the municipality is politically aligned with the median voter of its district.[39] Second, I consider the absolute value of the difference between the share of voters in the municipality and the share of voters in surrounding municipalities who voted for the right-wing candidate in the second round of the 2007 presidential election, in which a candidate from the right faced a candidate from the left. As shown in online Appendix Table A16, the impact on construction is not stronger when the municipality is less

[38] The effects are similar if I consider non-European immigration only (online Appendix Table A15).

[39] The last parliamentary election before 2010 took place in 2007. At that time, metropolitan France had 551 legislative districts (*circonscriptions*), each encompassing 128 municipalities on average. In 2010, 57 percent of the mayors had the same political orientation as their member of parliament (63 percent in the treatment group).

Table 4—Impact on Housing Supply: Neighbors' Characteristics

Outcome	Number of housing building permits per 10,000 inhabitants						
		Median income ratio		Median immigrants ratio		Median unemployed ratio	
	All	Below	Above	Below	Above	Below	Above
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Treatment	8.141	7.983	7.413	6.548	9.745	3.695	12.634
	(1.517)	(2.144)	(2.090)	(1.883)	(2.405)	(2.102)	(2.190)
Municipality FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	245,940	122,850	122,850	122,970	122,970	122,970	122,970
Mean dep. var.	64.836	60.787	67.524	59.883	70.129	67.563	61.949
SD dep. var.	90.844	83.960	94.371	84.459	96.934	95.575	85.466

Notes: Standard errors are in parentheses and are clustered at the municipality level. The mean of the dependent variable gives the average of the outcome variable in the treatment group during the prereform period (before 2010). The outcome is the number of housing building permits delivered in the municipality per year per 10,000 inhabitants (using the 2010 population). For each municipality, the ratio divides the value of the heterogeneity variable in the municipality by the average value in the other municipalities from the same département, weighted by their population. Column 2 (resp. 3) includes only municipalities below (resp. above) the median value of the ratio using the per capita residents' annual taxable income. Data on taxable income in 2010 are missing for the 16 smallest municipalities. Column 4 (resp. 5) includes only municipalities below (resp. above) the median value of the ratio using the share of immigrants in 2010. Columns 6 and 7 repeat the same exercise using the share of unemployed workers in 2010.

politically aligned with its neighbors. The effect is similar whether or not the mayor has the same orientation as the member of parliament, and even a bit larger when she does (8.7 versus 7.2, columns 2 and 3). While the impact is slightly larger for municipalities above the vote-share-difference median (10.0 versus 6.0, columns 5 and 4), the estimates are instead very close when considering only direct neighbors (8.3 versus 7.9, columns 7 and 6), and the coefficient corresponding to the interaction between the heterogeneity and treatment variables is small and not significant (online Appendix Tables C4 and C5). Overall, this suggests that the impact is not driven by municipalities whose neighbors are more different in terms of income, immigration, unemployment, or political preferences.

Homeowners.—Finally, if homeowners' fear of a housing price decline explains why municipalities resisted integration, we should see that the impact on construction is higher the larger the municipality's share of homeowners. Instead, the effect is not stronger for treated municipalities above the median (Table 5) and the interaction between the treatment variable and the share of homeowners is negative and not significant (online Appendix Table C6). To account for the fact that homeownership is negatively correlated with housing density, online Appendix Table A17 reproduces the same analysis restricting the sample to urban municipalities. As for the full sample, the impact is equally strong for urban municipalities above and below the median.

These findings are consistent with the lack of empirical evidence supporting the hypothesis that housing regulations are stronger in places with a higher rate of home ownership (e.g., Brueckner 1998; Glaeser and Ward 2009; Hilber

Table 5—Impact on Housing Supply: Share of Homeowners

Outcome	Number of housing building permits		
		Median % homeowners	
	All	Below	Above
	(1)	(2)	(3)
Treatment	8.141	9.263	7.650
	(1.517)	(2.645)	(1.798)
Municipality FE	Yes	Yes	Yes
Time FE	Yes	Yes	Yes
Observations	245,940	122,985	122,955
Mean dep. var.	64.836	70.803	60.789
SD dep. var.	90.844	97.331	85.940

Notes: Standard errors are in parentheses and are clustered at the municipality level. The mean of the dependent variable gives the average of the outcome variable in the treatment group during the prereform period (before 2010). The outcome is the number of housing building permits delivered in the municipality per year per 10,000 inhabitants (using the 2010 population). Column 2 (resp. 3) includes only municipalities below (resp. above) the median value of the share of homeowners in 2010.

and Robert-Nicoud 2013). They also show that resistance is not driven by homeowners only, in line with recent evidence showing that renters can express as much NIMBYism as homeowners, particularly in high-demand places (Hankinson 2018).

D. *Impact on Housing Prices, Economic Activity, and Population Size*

Housing Prices.—To investigate the actual impact of integration on municipalities' housing prices, I built indices based on official housing transactions, which can be interpreted as the price per square meter of a reference dwelling. As data on housing transactions for the Parisian region of Île-de-France and for the rest of France come from different databases, I present the results for the two parts of France separately (see online Appendix D for more details). Since housing prices are arguably forward-looking, we can expect them to reflect any changes in expectations about housing value shortly after the 2010 reform.

While the increase in construction in resisting municipalities is likely to affect housing prices throughout the local housing market, my goal is to assess whether resisting municipalities had to face a drop in housing prices after integration, which could account for their resistance. I thus run the analysis at the municipal level and I consider a balanced sample of municipalities, restricting the analysis to those in which at least one transaction took place every even year. This results in a sample of 459 municipalities in the Parisian region and 6,756 in the rest of France (44.0 percent of the initial sample in total). Considering instead all municipalities with at least one transaction during the period of interest almost doubles the sample size and leaves the results unchanged (online Appendix Figure D1). Given that municipalities that are part of an urban area have more housing transactions, municipalities driving the impact on construction are overrepresented: municipalities part of an urban area

(resp. urban core) make up 76.7 percent of the sample (resp. 23.8 percent) versus 61.6 percent (resp. 11.7 percent) of the full sample.

Figure 5 shows a small decrease in housing prices in 2014 for treated municipalities in the Parisian region, but the estimated impact is not significant and is small in magnitude (−€56 per square meter, or 2.3 percent). The decrease is even smaller for the rest of France, suggesting that overall, forced integration had no significant impact on housing prices. While there are some early pre-trends for the rest of France, the posttreatment effect remains close to zero when considering the unbalanced panel, for which the pre-trends are no longer significant (online Appendix Figure D1). Moreover, the same conclusions hold when using an alternative version of the indices in which I include a larger set of housing characteristics in the hedonic regressions and when restricting the analysis to municipalities inside the urban area (online Appendix Figures D2 and D3).

These results are consistent with high-demand places driving the impact on construction. As stressed by Lin and Wachter (2020), when housing constraints are relaxed at the local level, we can expect both a direct and an indirect effect on prices: the drop in prices coming from the increased supply affects the reallocation choice of households, depressing the demand in nearby municipalities and increasing the demand in the municipality in which regulations have been relaxed. This spillover effect is larger the more attractive the municipality. It can compensate for the direct effect, leading to an overall null impact on prices.

Economic Activity.—I explore whether the increase in building permits is associated with a rise in economic activity, which could mitigate the disutility associated with more construction. I first proxy economic activity by firm creation and assess the impact of integration on the number of new establishments created per 10,000 inhabitants in municipalities forced to integrate. I then measure the impact of integration on residents' total wages, divided by the number of inhabitants.

The point estimates are close to zero and nonsignificant for both outcomes, whether we look at the full sample (Figure 6) or only at municipalities that are part of an urban area (online Appendix Figure A6). These null effects provide additional evidence that the rise in construction is caused by a change in housing regulations after integration, rather than by a change in economic conditions. It also suggests that, at least in the medium run, the increase in construction in residents' backyards is not compensated for by greater economic activity.

Population Size.—As discussed in Section IIC, while it is not possible to use the census variables in a panel, I can look at the effect of forced integration on municipalities' total population by considering the yearly number of households living in the municipality (obtained from income tax declaration data). Online Appendix Figure A7 presents the results for all municipalities and restricting the sample to municipalities part of an urban area. As a further validation of the empirical strategy, we see that control and treated municipalities had similar population growths before 2010. There is no significant impact in the posttreatment period either. If anything, the estimates become negative at the end of the period of analysis, but the magnitudes are small (about 1 percent of the mean). This result can be explained by the fact that population effects take

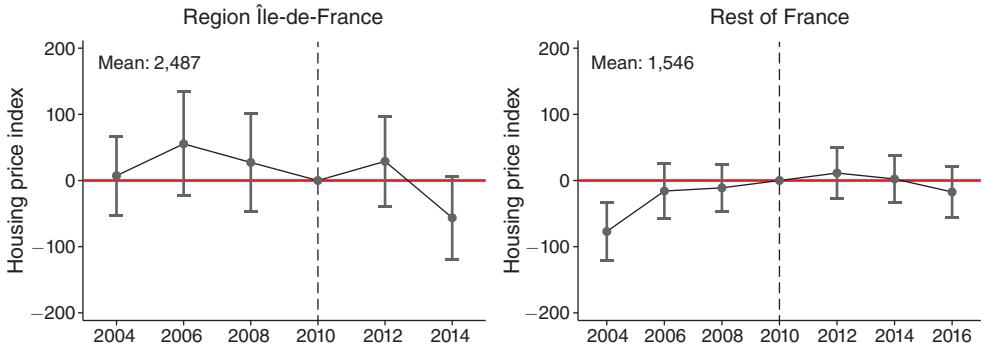

FIGURE 5. IMPACT ON HOUSING PRICES

Notes: This graph plots the estimates and 95 percent confidence intervals from the leads-and-lags regression (see equation (2)). The outcome is the municipality housing price index giving the price per square meter of a reference dwelling. The sample includes only municipalities in which at least one housing transaction took place each even year over the period studied. The graph on the left-hand side includes only municipalities in the Parisian region of Île-de-France, while the graph on the right-hand side includes all the other municipalities. On each graph, the average price per square meter in the treatment group before 2010 is displayed on the top left corner.

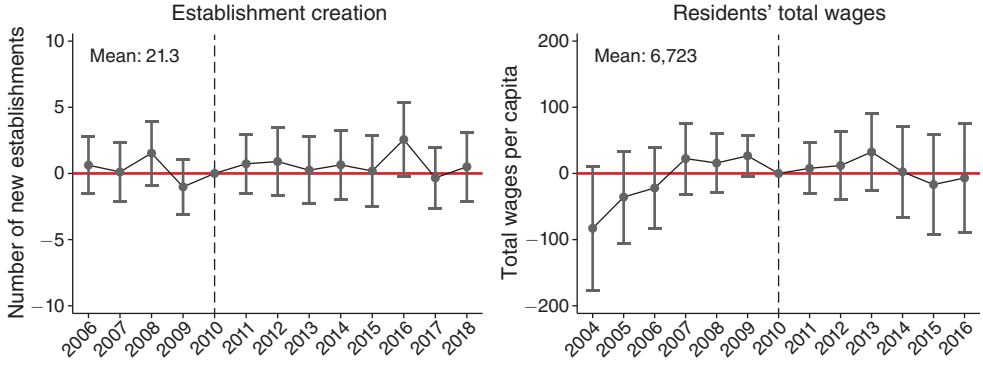

FIGURE 6. IMPACT ON ECONOMIC ACTIVITY

Notes: These graphs plot the estimates and 95 percent confidence intervals from the leads-and-lags regression (see equation (2)). On the left-hand graph, the outcome is the number of establishments created in a given year, per 10,000 inhabitants (using the 2010 population). The agricultural sector and the establishments created by individual entrepreneurs are excluded. On the right-hand graph, the outcome is the yearly total wages received by residents, divided by the 2010 population. The total wage computation includes only full-time employed residents. It excludes self-employed workers as well as the agricultural and public sectors. It is missing for the 311 smallest municipalities (2 percent of the sample). On both graphs, the average value of the outcome in the treatment group before 2010 is displayed on the top left corner.

time to materialize. The impact on building permits becomes large starting in 2014, corresponding to the end of the period of integration (Figure 3). Once the permit is delivered, the recipient has up to three years to start construction, and it can even go up to five years. Moreover, the construction projects driving the impact are likely to take long, as these are mainly new construction on empty lands, as opposed to extension of existing buildings (Table 2). While this result suggests that the increase in building

permits does not lead to an increase in population density in the medium term, it can still be consistent with municipalities opposing new construction due to NIMBYism. First, residents might expect future increases in population density. Second, more construction also means more built-up areas and less space available in the municipality. And indeed, the fact that the increase in building permits is driven by new construction on empty lands implies that the municipality is losing space.

IV. Impact on Local Public Services

In order to achieve economies of scale, ICs seek to rationalize the offer of local public services and, thus, tend to concentrate resources on a subset of public service facilities. In particular, they are likely to concentrate resources on facilities located in central and densely populated areas, closing facilities or preventing new ones from opening in other areas. As a result, low-density municipalities may lose local public services after entering an IC, which then increases the distance to public services for their residents. The loss of local public services is an important source of discontent, as evidenced by the recent demonstrations and blockades of the yellow vests movement in France, which was tightly linked to the loss of public service facilities in peripheral places (Algan, Malgouyres, and Senik 2020; Boyer et al. 2020).

I gathered local data on two different public services transferred to the IC after integration: child daycares and public libraries. I explore the impact on the number of daycare spots available and on the number of public libraries located in municipalities forced to integrate, per 10,000 inhabitants (using the 2010 population). The data are less comprehensive than the data on building permits. First, data on daycares and libraries start in 2007 and 2009, respectively, which does not leave enough time prior to the law to compare the main results with the effects of integration for municipalities that voluntarily integrated before 2010. Moreover, while data on daycares are available for the whole territory, data on libraries are available for only seven départements.[40] Still, the results go in the same direction for both daycare and libraries, strengthening the conclusions we can draw about the effects of integration on local public services in resisting municipalities.

To test the main prediction—that integration decreases public services in low-density places—Figure 7 presents the results separately for rural and urban municipalities (see online Appendix Figure A8 for the impact on the full sample). The decreasing trends for rural municipalities indicate that rural municipalities forced to integrate ended up with fewer public services after the law, compared to rural control municipalities. We see no such decline for urban municipalities and, if anything, the trend is even slightly increasing after the law.

Table 6 provides the estimates for the full sample and separately for rural (columns 2 and 5) and urban municipalities (columns 3 and 6). In line with the graphical evidence, the coefficient for rural municipalities is negative and significant at the 5 percent level for both public services, whereas the coefficient for urban

[40] The seven départements are in different parts of the country: Aisne (in the north of France), Finistère (west), Drôme (southeast), Gironde and Dordogne (southwest), and Essonne and Val d'Oise (center north). They make up 9 percent of the municipalities in the main sample of analysis.

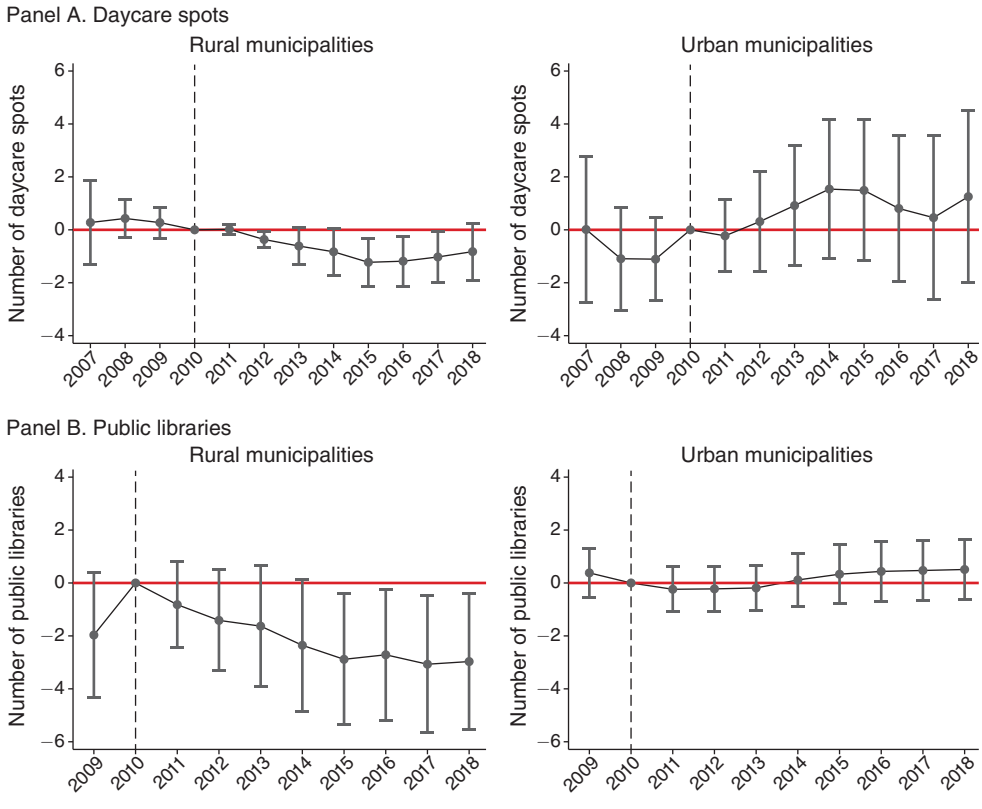

Figure 7. Impact on Daycares and Public Libraries

Notes: These graphs plot the estimates and 95 percent confidence intervals from the leads-and-lags regression (see equation (2)). In panel A, the outcome is the number of child daycare spots in the municipality per 10,000 inhabitants (using the 2010 population). In panel B, the outcome is the number of public libraries in the municipality per 10,000 inhabitants (using the 2010 population) and the sample is restricted to the seven départements for which data are available starting in 2009. The graphs on the left-hand side include only rural municipalities, while the graphs on the right-hand side include only urban municipalities.

municipalities is either positive or close to zero and not significant. The difference between the coefficients for rural and urban municipalities is statistically significant (p-values of 0.085 and 0.080 for the number of daycare spots and public libraries, respectively). In the average year after 2010, rural municipalities forced to integrate had 1.0 fewer daycare spot and 1.2 fewer public libraries per 10,000 inhabitants, compared to rural control municipalities (a decrease of 27.7 and 23.6 percent, respectively).[41] The number of daycare facilities follows a similar pattern, suggesting that the

[41] Online Appendix Table A18 shows the results obtained using three alternative specification and focusing on rural municipalities. Taking the log of the outcome (columns 1 and 4), the inverse hyperbolic sine transformation (columns 2 and 5), or estimating a Poisson regression model (columns 3 and 6) all yield estimates significant at the 1 percent level for both public services. While the average treatment effect is small in magnitude using the 2 first transformations (between 2 and 5 percent), the Poisson regression yields an estimate of 18.6 and 20.4 percent for daycare and library, respectively—close to the percentage effects reported in the main text.

Table 6—Impact on Daycare and Public Libraries

Outcome	Daycare spots			Public libraries		
	All (1)	Rural (2)	Urban (3)	All (4)	Rural (5)	Urban (6)
Treatment	−0.616	−1.001	1.366	−0.913	−1.248	−0.039
	(0.461)	(0.463)	(1.292)	(0.460)	(0.620)	(0.305)
p-value (2) = (3), (5) = (6)		0.085			0.080	
Municipality FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	196,752	153,216	43,536	14,290	11,020	3,270
Mean	10.620	3.617	37.947	4.374	5.277	2.032
SD	38.600	31.900	48.954	9.574	10.983	3.089

Notes: Standard errors are in parentheses and are clustered at the municipality level. The mean of the dependent variable gives the average of the outcome variable in the treatment group during the prereform period (before 2010). In columns 1 to 3, the outcome is the number of child daycare spots in the municipality per 10,000 inhabitants (using the 2010 population); the period of analysis is 2007–2018. In columns 4 to 6, the outcome is the number of public libraries in the municipality per 10,000 inhabitants (using the 2010 population); the period of analysis is 2009–2018 and the sample is restricted to the seven départements for which data are available starting in 2009. Columns 2 and 5 include only rural municipalities, while columns 3 and 6 include only urban municipalities.

loss of entire daycare facilities is what is driving the decrease in the number of daycare spots (online Appendix Figure A9 and Table A19).

Turning to the extensive margin, I find that rural resisting municipalities have a higher probability to end up with no daycare spot or no library after their integration (online Appendix Table A20 and Figure A10). Additional heterogeneity analyses suggest that the overall impact on daycare is driven by rural municipalities that did not have any daycare spot to start with, meaning that their integration prevented the opening of facilities on their territory (online Appendix Table A21, columns 2 and 3). Instead, the overall impact on public libraries is driven by rural municipalities that had at least one library to start with, meaning that their integration led to the closing of facilities on their territory (online Appendix Table A21, columns 5 and 6). Interestingly, the resulting effect on the gap in public good provision between rural control and treated municipalities differs for the two public services. On the one hand, rural municipalities forced to integrate already had fewer daycare spots per capita in 2010, meaning that their integration further increased the gap with rural control municipalities. On the other, they had more public libraries per capita, meaning that their integration brought them closer to rural control municipalities.[42]

The decrease in public services remains significant and the effect size is of similar magnitude when dividing the outcomes by the number of households in year t rather than by the 2010 population and when controlling for municipalities' size and residents' revenues (online Appendix Table A22). This suggests that the impact

[42] In 2010, rural resisting municipalities had, on average, 4.0 daycare spots per 10,000 inhabitants, compared to 6.5 for rural control municipalities, while having the same average number of children (see Table 1). In contrast, rural resisting municipalities had, on average, 6.7 public libraries per 10,000 inhabitants, compared to 4.5 for rural control municipalities.

is not driven by a differential change in the population of rural treated and control municipalities after 2010. Instead, these results are consistent with the loss of public services being driven by decisions made at the IC level to concentrate resources in denser municipalities, explaining rural municipalities' resistance to integration in the first place.

To provide further support for this interpretation, I assess the impact of integration on public schools. If the impact on daycares and libraries is driven by the loss of control over public services, we should not find the same pattern for public services that are unlikely to be directly affected by integration. I look at the number of preschools (*maternelles*) and primary schools in the municipality and then at the number of higher-level schools, including secondary schools, high schools, and universities. The former are managed both at the national and municipal levels, but municipalities' role is limited (see Section IA). The latter are managed at the national and departmental or regional levels. Unlike the case of daycare and public libraries, integration does not lead to a decrease in the number of public schools in rural municipalities forced to integrate and the point estimates are close to zero (online Appendix Figure A11).

V. Evidence on the Benefits of Integration

Results so far suggest that municipalities resisted cooperation to avoid an increase in construction and to avoid losing local public services. In this section, I investigate the impact of integration on two additional dimensions on which cooperation is likely to provide some benefits: public transport and fiscal revenues. I first assess the impact for municipalities forced to integrate to see what they were ready to give up by not integrating. I then compare the effect with what municipalities that integrated voluntarily experienced. This enables me to see whether, on top of incurring the costs of integration, resisting municipalities also benefited differently from the gains of cooperation.

A. *Impact on Public Transport*

By enhancing cooperation and enabling municipalities to pool resources, integration is likely to help neighboring municipalities build larger and more efficient public transport networks. As a result, joining an IC might increase a municipality's probability of being connected. I estimate the impact of integration on an indicator variable equal to 1 if the municipality is connected to a public transport network at some point during the year (there is at least one public transport route operating in the municipality) and 0 if the municipality is not connected (there is no public transport route). This analysis excludes municipalities in Île-de-France, for which data on public transport are not available.

Figure 8 shows the impact for municipalities forced to integrate. The decreasing pre-trend suggests that before 2010, access to public transport increased more rapidly for control municipalities than for treated municipalities. One plausible explanation is that coordination inside ICs helped control municipalities develop transport networks more rapidly. In contrast, the large increasing trend after 2010

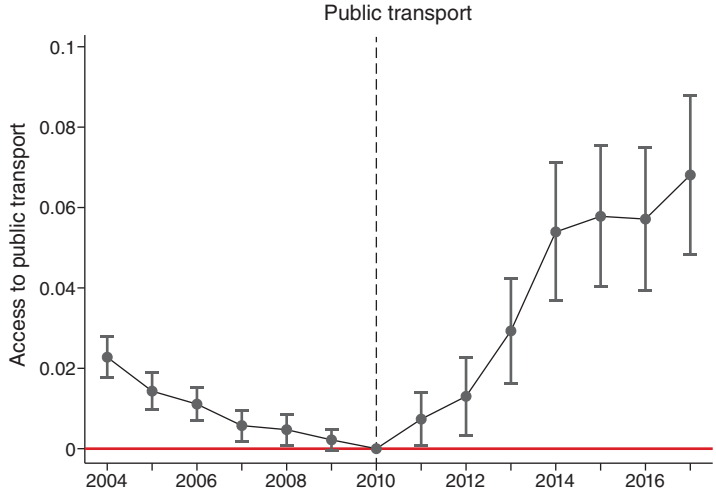

FIGURE 8. IMPACT ON PUBLIC TRANSPORT

Notes: This graph plots the estimates and 95 percent confidence intervals from the leads-and-lags regression (see equation (2)). The outcome is an indicator variable equal to 1 if the municipality has access to public transport. The sample excludes municipalities in the Parisian region of Île-de-France, for which the data are not available.

shows that, after the law, access to public transport increased more rapidly for municipalities forced to join an IC. In line with the presence of pre-trends, the coefficients associated with the placebo reforms before 2010 are significant but small and negative, contrasting with the large and positive effect of the true reform (online Appendix Figure B4).

Table 7 indicates that resisting municipalities' probability of being connected to a public transport network is 3.2 percentage points higher in the average year after 2010—an effect significant at the 1 percent level. Given that only 2.4 percent of treated municipalities had access to public transport before 2010, their entry into an IC more than doubled their probability of being connected. In 2017, the effect reaches 6.8 percentage points—a nearly threefold increase. The point estimate is larger for urban than for rural municipalities (10.6 versus 2.0, columns 3 and 2), but the magnitude relative to the pretreatment mean is similar, and both estimates are significant at the 1 percent level. The impact is robust in magnitude and statistical significance to using propensity score matching or to adding time-varying controls (online Appendix Tables A23 and B3.5).

I then measure the impact of integration on public transport for municipalities that voluntarily joined an IC before 2010, using the same estimation methods as in Section IIIB (online Appendix Figure A12). The results obtained with the regular staggered adoption design suggest that, on average, the probability of having access to public transport is 2 percentage points higher in the years following their integration. Using de Chaisemartin and D'Haultfoeuille (2020)'s method, I find that the impact increases over time and reaches 4 percentage points 4 years after integration. This is a sizable effect, given that only 3.4 percent of the municipalities that integrated between 2000 and 2010 had access to public transport in

Table 7—Impact on Public Transport

Outcome	Access to public transport		
	All (1)	Rural (2)	Urban (3)
Treatment	0.032	0.020	0.106
	(0.007)	(0.006)	(0.024)
p-value (2) = (3)		0.001	
Municipality FE	Yes	Yes	Yes
Time FE	Yes	Yes	Yes
Observations	221,368	173,894	47,474
Mean dep. var.	0.024	0.013	0.078
SD dep. var.	0.152	0.115	0.269

Notes: Standard errors are in parentheses and are clustered at the municipality level. The mean of the dependent variable gives the average of the outcome variable in the treatment group during the prereform period (before 2010). The outcome is an indicator variable equal to 1 if the municipality has access to public transport. The sample excludes municipalities in the Parisian region of Île-de-France, for which the data are not available. Column 2 includes only rural municipalities, while column 3 includes only urban municipalities.

1999. Hence, integration had a large positive effect on public transport for both municipalities that voluntarily joined an IC and those that resisted integration. Moreover, as the share of residents using their cars was the same in both types of municipality in 1999—before any of them integrated—we can conclude that they benefited equally from this increase in public transport.[43]

B. *Impact on Fiscal Revenues*

While a municipality's own state transfers do not change after integration, the municipality benefits from the additional state transfers allotted each year to the IC. As stressed in Section IIA, these transfers were introduced to incentivize cooperation, and gains in fiscal revenues are considered as a major benefit of integration (e.g., Bel and Warner 2016; Di Porto and Paty 2018). However, if a municipality integrates with neighboring municipalities that have lower fiscal capabilities, the fiscal gain coming from the additional transfers could be compensated by fiscal losses coming from the sharing of tax revenues at the IC level. Therefore, I study the impact of integration on municipalities' total fiscal revenues per capita and test whether resisting municipalities entered ICs generating lower revenues. This would imply that they benefited less from the fiscal advantage of integration, which could further explain their resistance.

I compute municipalities' resources as follows. If a municipality is isolated, its fiscal revenues are made up of its own tax revenues and state transfers. If a municipality is part of an IC, I compute its fiscal revenues as the sum of its own fiscal revenues and the total IC's fiscal revenues scaled by the municipality's share of the

[43] Statistics from the 1999 census indicate that 75.3 percent of resisting municipalities' residents were using their cars to go to work, compared with 76.7 percent for municipalities that voluntarily integrated between 2000 and 2010.

total IC population.[44] I then divide the total fiscal revenues by the municipal population in 2010. This outcome measures the resources available per resident, assuming that every resident benefits equally from the IC's spending. While the results of Section IV suggest otherwise, comparing the impact for municipalities forced to integrate and those that voluntarily integrated sheds light on whether resisting municipalities entered ICs generating lower revenues, which could further explain why they resisted integration in the first place.

As shown in Figure 9, contrasting with the small decreasing trend before 2010, municipalities forced to integrate had a large increase in fiscal revenues after integration. As with public transport, the estimates associated with placebo reforms are small and negative, contrasting with the large and positive effect of the true reform (online Appendix Figure B4). Table 8 indicates that, on average, integration increased fiscal revenues by €101.2 per capita per year in resisting municipalities—an effect significant at the 1 percent level. This effect corresponds to a 14.5 percent yearly increase and is of similar magnitude for rural and urban municipalities (15.1 and 13.3 percent, columns 2 and 3). The increase in fiscal revenues can be interpreted as an increase per current capita, given that the magnitude is similar when dividing by the number of households in year t and when controlling for municipalities' size (online Appendix Table A25).

Importantly, this increase does not mechanically come from the fact that a share of the IC revenues is added to the municipality's own revenues after integration. Indeed, due to their loss of tax setting power (see Section IA), resisting municipalities experienced a decrease in their own local tax revenues after integration, as shown in online Appendix Figure A13. Hence, the positive impact on total revenues implies that this decrease is more than compensated for by their share of the IC's revenues. Online Appendix Figure A14 and Table A24 further show that the positive effect on total revenues is driven both by state transfers and tax revenues. First, a share of the IC's state transfers is attributed to the municipality, increasing the municipality's total revenues by €39.1 per capita (column 3). Second, the per-capita tax revenues generated by the IC more than compensate the decrease in the municipality's own local tax revenues, increasing the municipality's total revenues by €60.8 per capita (column 2). The fact that ICs generate more tax revenues than the municipalities individually is likely coming from a decrease in tax competition among neighboring municipalities, as shown by Charlot, Paty, and Piguet (2015) and Breuillé, Duran-Vigneron, and Samson (2018).

Turning to municipalities that decided to join an IC voluntarily prior to the law, online Appendix Figure A15 (panel A) suggests that their fiscal revenues increased by about €80 to €100 per capita per year after their integration, or 14.1 to 17.6 percent per year.[45] As for municipalities forced to integrate, the increase comes from

[44] If the IC gives direct transfers to one of the member municipalities—for instance, as part of the solidarity transfers to poorer municipalities in the community—I consider these transfers as part of the revenues of that municipality only, but not as part of the total IC revenues shared among all members.

[45] Data on municipalities' and IC's fiscal revenues are available only starting in 2002. I therefore focus the analysis on municipalities that voluntarily integrated between 2003 and 2010. For the regular staggered adoption design, the period of analysis goes from 2002 to 2018, while when using de Chaisemartin and D'Haultfoeuille (2020)'s method, the period of analysis goes from 2002 to 2009 (see Section IIIB). To compute the magnitude

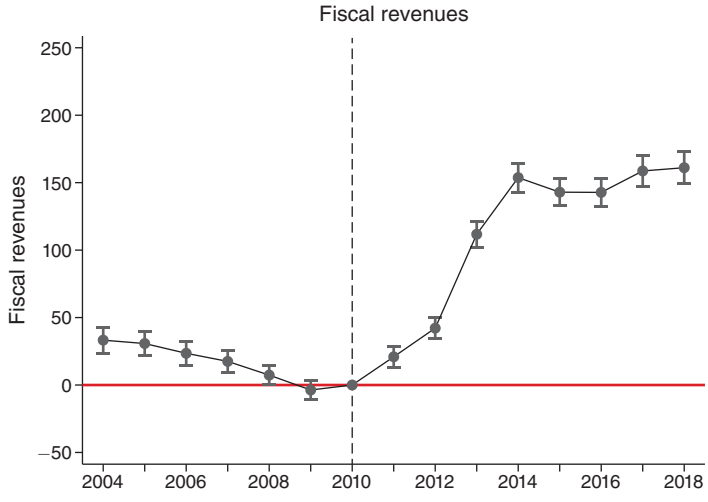

Figure 9. Impact on Fiscal Revenues

Notes: This graph plots the estimates and 95 percent confidence intervals from the leads-and-lags regression (see equation (2)). The outcome is the municipality's total fiscal revenues per capita, as defined in Section VB. I exclude from the analysis the few municipalities for which the data are missing for at least one year over the period 2004–2018 (0.4 percent of the sample).

Table 8—Impact on Fiscal Revenues

Outcome	Fiscal revenues per capita		
	All	Rural	Urban
	(1)	(2)	(3)
Treatment	101.2	93.1	134.7
	(4.8)	(5.1)	(12.2)
p-value (2) = (3)		0.002	
Municipality FE	Yes	Yes	Yes
Time FE	Yes	Yes	Yes
Observations	244,965	190,965	54,000
Mean dep. var.	698.6	617.7	1,015
SD dep. var.	430.0	329.1	598.6

Notes: Standard errors are in parentheses and are clustered at the municipality level. The mean of the dependent variable gives the average of the outcome variable in the treatment group during the prereform period (before 2010). The outcome is the municipality's total fiscal revenues per capita, as defined in Section VB. I exclude from the analysis the few municipalities for which the data are missing for at least one year over the period 2004–2018 (0.4 percent of the sample). Column 2 includes only rural municipalities, while column 3 includes only urban municipalities.

both additional state transfers and higher fiscal revenues (online Appendix Figure A15, panels B and C). The impact is, thus, similar for resisting municipalities and for those that voluntarily integrated.

of the effect, I compare the increase of €80 and €100 to the average fiscal revenues in 2002 for municipalities not already integrated.

These results suggest that resisting municipalities did not oppose integration because they anticipated entering ICs generating less revenues, but to avoid the local costs of integration. It also suggests that these additional revenues were not enough to compensate for the costs associated with increased construction and with the loss of local public services. These additional revenues are generated at the IC level and, thus, controlled by the intermunicipal council. Given that ICs tend to concentrate resources in densely populated areas (Section IV), rural municipalities are unlikely to benefit much from ICs' spending, making these extra resources unlikely to compensate for the costs of integration in those municipalities. Urban municipalities are instead more likely to benefit directly from those additional revenues. However, the fact that they had to be forced to integrate suggests that, even when municipalities benefit from these extra revenues, they are not enough to cover for the costs associated with increased construction.

VI. Interpretation and Mechanisms

A. *Interpretation*

While municipalities forced to integrate experienced benefits of integration similar to those of municipalities that voluntarily integrated, they faced an increase in construction and a loss of local public services that the other municipalities did not experience, at least regarding construction. I have interpreted those results as evidence that municipalities resisted integration to avoid those very costs. This interpretation assumes that they correctly anticipated the consequences of integration and that they would have experienced the same costs had they integrated earlier. Alternatively, one could argue that resisting municipalities faced such effects because they integrated later on and were forced to do so. They might have entered ICs better organized and more able to impose costs on them. Moreover, already-integrated municipalities might have decided to punish them for having resisted so long. This would imply that resisting municipalities would not have experienced the same costs had they voluntarily integrated earlier, casting doubt on whether the impacts observed can explain their resistance.

If this alternative interpretation is correct, we should see that the costs of integration are borne by treated municipalities that entered existing ICs after the law, as opposed to treated municipalities that created new ICs after 2010. Similarly, when joining existing communities, we would expect the costs to be lower for those that joined more recently created ICs. Finally, if municipalities are punished for not having integrated the community earlier, we would expect the impact to be lower for resisting municipalities that shared borders with several ICs at the time of the law, as it would be less clear which IC they were avoiding. I assess the impact of integration in each of these situations, focusing on municipalities that are part of an urban area with respect to building permits and focusing on rural municipalities with respect to daycare and public libraries.

As shown in Table 9, compared to the effect for the full sample (10.5, column 2), the impact on construction remains large and significant at the 1 percent level for treated municipalities that joined a new IC (8.8, column 1), joined a recently

created one (15.6, column 4), or had a choice of at least two ICs at the time of the law (6.9, column 5). Turning to public services (online Appendix Table A26), the impact for rural municipalities remains negative across all three cases and only loses statistical significance for recent IC (resp. new IC) for daycare services (resp. libraries).

When entering a new or a recently created IC, the integration process of resisting municipalities resembles that of municipalities that integrated early on. Finding similar patterns in such cases supports the view that municipalities that opposed integration would have experienced the same had they integrated earlier and, thus, that the consequences they faced help explain their resistance.

B. *Mechanism*

The results above further support the view that municipalities forced to integrate opposed cooperation knowing that they would face some costs in terms of housing supply and local public services. This begs the question of how other municipalities were able to avoid these costs.

One possible explanation is that the costs of integration apply only to municipalities with specific characteristics. However, as shown in Section IIB, resisting municipalities are, on average, quite similar to municipalities that integrated voluntarily, based on sociodemographic, land-use, and political characteristics. Moreover, municipalities closest to the urban center face the largest increase in construction, while only rural municipalities experience a loss of public services, showing that integration costs can apply to different types of municipalities.

A more likely explanation is that the resisting municipalities are the ones losing the most autonomy when integrating. This can be the case if such municipalities—although, on average, similar to the rest of the country—tend to be smaller than their neighbors and, thus, less able to fight their IC's decisions. As the number of seats a municipality gets in the intermunicipal council is proportional to its population, I measure a municipality's bargaining power as its share of the IC's total population divided by the share of the IC's total population an average municipality from the same IC represents. The greater this ratio, the larger the share of seats the municipality has compared with the average number of seats others get. I look at the composition of ICs in 2014—that is, at the end of the period of integration. While the average value of the ratio is 1 by construction, it is only 0.85 for municipalities that were forced to integrate, suggesting that resisting municipalities have a 15 percent lower bargaining power on average.

A municipality loses even more power when joining an IC encompassing large municipalities that can impose their decisions. Resisting municipalities are also more likely to end up in such situation: 51.2 percent of them are part of an IC encompassing a big city (of more than 5,000 inhabitants) in 2014, versus 42.3 percent for the full sample.[46] Moreover, in line with the costs being the highest

[46] The threshold of 5,000 inhabitants corresponds to the minimum legal size of an IC. Only 5 percent of French municipalities had more than 5,000 inhabitants in 2010.

Table 9—Impact on Housing Depending on the Integration Process: Urban Areas

Outcome	Number of building permits per 10,000 inhabitants				
			Existing IC		
	All (1)	New IC (2)	All (3)	Recent (4)	≥ 2 choices (5)
Treatment	10.494 (1.812)	8.751 (3.207)	11.298 (2.116)	15.634 (3.472)	6.879 (2.549)
Municipality FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Observations	151,500	143,010	147,585	142,125	144,585
Mean dep. var.	63.660	63.138	63.900	58.509	67.357
SD dep. var	85.197	83.922	85.788	85.666	86.968

Notes: Standard errors are in parentheses and are clustered at the municipality level. The mean of the dependent variable gives the average of the outcome variable in the treatment group during the prereform period (before 2010). The outcome is the number of housing building permits delivered in the municipality per year per 10,000 inhabitants (using the 2010 population). The sample includes only municipalities part of an urban area. Columns 2 (resp. 3) includes only treated municipalities that created a new IC (resp. that joined an existing IC) after the 2010 law. Column 4 includes only treated municipalities that entered a recently created IC (in which all other members integrated after 2000). Column 5 includes only treated municipalities that entered an existing IC and that had the choice between at least two of them in 2010.

for municipalities losing the most power, Table 10 shows that the impact on construction is larger for resisting municipalities that join an IC encompassing a big city (13.0 versus 6.1)—a difference that is statistically significant (p-value of 0.050). The results on public services are less conclusive; they go in the expected direction for libraries but not for daycares (online Appendix Table A27). This can be explained by the fact that resisting rural municipalities do not need to integrate with a big city to loose a great share of autonomy, given the very low bargaining power they have to start with (average ratio of 0.63).

All together, these results suggest that municipalities resisted integration knowing that they would not be able to prevent their neighbors from imposing new construction or decreasing the availability of public services in their territory. This also suggests that the costs identified in this paper can explain resistance beyond the specific case of municipalities forced to enter an IC in 2010. In particular, they help explain why the vast majority of French municipalities recently opposed new laws aimed at increasing the size of ICs. Such reforms would lead many municipalities to lose bargaining power and, thus, to suffer from costs they have been able to avoid so far.[47] Finally, as most forms of cooperation among local jurisdictions imply sharing urban planning policies and public services, these findings may help explain resistance to integration beyond the case of French municipalities, as long as the decision process involves some jurisdictions losing more power than others.

[47] In 2015, a new law passed requiring that ICs should have at least 15,000 inhabitants by 2017 and requiring municipalities to share more public services. There was widespread complaint from mayors, leading to multiple revisions of the law with additional room for exceptions (e.g., AMF-Cevipof/SciencesPo 2018). In the face of such resistance, the French president announced he might reconsider the law (see for instance: https://www.amf.asso.fr/documents-vers-une-revision-la-loi-notre-/39240).

Table 10—Impact on Housing Depending on Whether the IC Encompasses a Big City: Urban Areas

Outcome	Number of building permits		
	All (1)	No big city (2)	Big city (3)
Treatment	10.494	6.093	12.961
	(1.812)	(2.507)	(2.453)
p-value (2) = (3)		0.050	
Municipality FE	Yes	Yes	Yes
Time FE	Yes	Yes	Yes
Observations	151,500	67,860	83,625
Mean dep. var.	63.660	65.957	61.974
SD dep. var	85.197	87.040	83.792

Notes: Standard errors are in parentheses and are clustered at the municipality level. The mean of the dependent variable gives the average of the outcome variable in the treatment group during the pre-reform period (before 2010). The outcome is the number of housing building permits delivered in the municipality per year per 10,000 inhabitants (using the 2010 population). The sample includes only municipalities part of an urban area. Column 2 (resp. 3) includes only municipalities that, in 2014, were part of an IC in which all municipalities were below 5,000 inhabitants (resp. encompassing a municipality above 5,000 inhabitants).

VII. Conclusion

This paper provides new evidence on the factors explaining municipalities' opposition to consolidation by measuring the local consequences of integration. Exploiting a 2010 reform in France that forced nonintegrated municipalities to enter an IC, I measure the causal impact of integration on resisting municipalities. Comparing what they faced to the experience of municipalities that had chosen to integrate prior to the law, I infer the local consequences explaining why resisting municipalities opposed integration in the first place.

Using a difference-in-difference strategy, I first find that municipalities forced to integrate experienced an increase of 12.5 percent in the number of building permits delivered per year. On the contrary, municipalities that joined an IC voluntarily had no such significant increase in their housing supply after integration. Only municipalities that did not want to integrate faced a large increase in construction, supporting the view that they refused to integrate to avoid an increase in housing supply. Further heterogeneity analyses show that the impact is mainly driven by high-demand municipalities, consistent with NIMBYism driving their opposition against cooperation.

I then assess the impact of integration on local public services. I gathered data at the local level on two different public services transferred to the community level after integration: daycares and public libraries. I find that rural municipalities forced to enter an IC ended up with 20 to 30 percent fewer daycare spots and public libraries after the law, implying that integration increased the distance to public services for their residents.

Finally, I explore the benefits of integration. I find that municipalities that were forced to enter an IC became twice as likely to have access to public transport and

experienced a 14.5 percent per year increase in the fiscal resources available per resident. Municipalities that voluntarily integrated experienced very similar gains. These results suggest that resisting municipalities did not oppose integration due to lower benefits, but to avoid the local costs of integration.

These results have several policy implications. First, I provide evidence that opposition to integration is driven by actual consequences of integration, beyond political or ideological considerations. These findings could help policymakers implement consolidation policies more effectively and design compensation schemes that take into account the costs associated with increased construction and the loss of local public services. This likely applies beyond the French context, as local housing regulations and the provision of local public goods are among the most important functions of municipal governments.

Second, this paper stresses the consequences of changing the scale of decision-making. I provide causal evidence that transferring housing and zoning policies to a higher level reduces housing regulations. Such a policy could be used to increase housing supply in areas with strong economic growth, where housing regulations keep workers from moving in. These results speak to the case of the United States, where regulations have become tighter, arguably due to a shift of power to the microscale (Purcell 2006; Hankinson 2018). Following the rise of neighborhood institutions, residents have become more involved in urban planning decisions (Rohe and Gates 1985; Angotti 2011) and evidence suggests that such ward-based decision-making leads to more restrictive policies (Clingermayer 1994; Mast 2024). To overcome housing regulations—and in line with my own results—urban scholars have instead advocated for a shift of power from the municipalities to the metropolitan areas (Rusk 1995; Glaeser 2014; Glaeser and Gyourko 2018). However, this is politically difficult to implement due to the fierce opposition of municipalities that do not want to lose control over urban planning (e.g., Orfield 1997).

Finally, by identifying the local consequences of integration, this paper opens the avenue to a comprehensive welfare analysis of consolidation reforms that would take both sides of the trade-off into account. On the cost side, one would need to take into account the local costs borne by the residents of municipalities losing local public services and facing unwanted increases in density. Moreover, integration is costly for the government when it involves additional transfers. A simple back-of-the-envelope calculation suggests that increasing construction through forced cooperation cost the French national government about €48,272 per new housing unit.[48] On the benefit side, an increase in housing supply in high-demand municipalities can help allocate workers more effectively, increasing overall productivity, decreasing commuting and gas emissions, and fostering intergenerational mobility (Glaeser and Kahn 2010; Chetty, Hendren, and Katz 2016; Ganong and Shoag 2017; Glaeser and Gyourko 2018; Hsieh and Moretti 2019). Moreover, the concentration of public service facilities is likely to generate economies of scale, reducing the overall cost of

[48] This number is obtained by comparing the average 8.1 yearly increase in building permits per 10,000 inhabitants over the period 2010–2018 (Table 2, column 1) to the average €39.1 per capita of additional transfers received by resisting municipalities each year over the same period (online Appendix Table A24, column 3).

public service provision. These aggregate benefits take time to materialize and call for further research to quantify them.

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