

BANCA D'ITALIA

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THE ROLE OF ITALY'S FIRST-HOME GUARANTEE FUND IN MORTGAGE LENDING TO YOUNG BORROWERS

by Simona Arcuti*, Andrea Benecchi*, Carlo Bottoni*, Iconio Garrì* and Laura Sigalotti*

Abstract

This paper documents the use of the Italy's First-Home Guarantee Fund (Fondo di garanzia per la prima casa) and assesses its effectiveness. The empirical analysis uses an original dataset based on data from the Italian Central Credit Register (Centrale dei Rischi) and covers the period from 2011 to 2023. This time span includes the period following the introduction of the guarantee covering 50 per cent of the mortgage principal, as well as the period during which young borrowers under the age of 36 with a low ISEE (Italy's means-tested indicator of household economic conditions) were eligible for an enhanced guarantee covering up to 80 per cent of the principal, together with tax incentives. The empirical design combines panel analysis, Bartik-style specifications, and difference-in-differences estimates. The results suggest that strengthening the scheme significantly increased mortgage originations to young borrowers, with stronger effects in economically disadvantaged areas.

JEL Classification: R28, G21, H31.

Keywords: public guarantee, mortgage, households.

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1 Introduction[1]

One of the main barriers to homeownership for young people is limited access to credit. Scarce initial resources, less stable income and relatively short credit histories make it more challenging for them to secure a mortgage to purchase a property. In Italy, these issues are particularly pertinent given that home ownership is still considered an important marker of economic and family independence, while younger generations are more likely to experience irregular employment and rely on parental support.

In Italy, the "Fondo di Garanzia Mutui Prima Casa" (Public Guarantee Fund for First-Home Mortgages), established in 2014, is a public policy instrument designed to support access to credit for first-home purchases. In its initial phase, the Fund provided a public guarantee covering 50 percent of the principal amount for mortgages of up to €250,000. Although the scheme was primarily targeted at certain priority categories,[2] its initial take-up remained relatively limited and the measure operated on a broad basis, without a clear focus on young borrowers. In the second phase, which began in mid-2021, the policy was significantly strengthened. Applicants under the age of 36 with an ISEE[3] below €40,000 were offered increased guarantee coverage of up to 80 percent of the principal amount and the opportunity to obtain loans with a loan-to-value ratio of up to 100 percent, along with substantial tax incentives.

The international literature suggests that public interventions supporting mortgage credit can significantly affect access to home ownership. However, these effects depend on the design of the policy and the institutional context in which it operates. Evidence from the United States and the United Kingdom shows that guarantee schemes and mortgage support instruments can expand credit flows and facilitate home purchases by potentially constrained groups. At the same time, these policies may be associated with uneven distributional and territorial effects, as well as with possible pressures on house prices. The public fiscal cost should also be considered, together with the credit risk that such policies may entail and the potentially substantial losses that may arise in the event of housing market crises, as occurred after 2007.

For Italy, despite the growing quantitative relevance of the First-Home Guarantee Fund in recent years, there is still no systematic assessment of its impact on young people's access to credit[4].

This paper documents the use of the Fund in its two main phases of operation and evaluates its effects on mortgage originations, with a specific focus on young borrowers. We use an original dataset based on granular data from the Italian Central Credit Register (Centrale dei Rischi), managed by the Bank of Italy, integrated with administrative sources from Istat, the Ministry of Economy and Finance, and the Revenue Agency. To identify the impact of the measure, our empirical analysis combines complementary approaches: a panel model, a Bartik-style shift-and-share specification, and a difference-in-differences model.

The results show that the effectiveness of the policy is concentrated mainly in the second phase of operation. For the 50 percent guarantee, the empirical evidence is overall limited. By

[1]The authors thank Giuseppe Albanese, Alessio Barbalonga (discussant), Alessio De Vincenzo, Angelo Nunnari (discussant), Valerio Vacca and an anonymous referee from the Bank of Italy for their valuable comments, as well as seminar participants at the Bank of Italy's Seminar on Regional Economics (Rome, December 2025), the XLVII AISRe Annual Scientific Conference (Florence, June 2026), the XXXVIII SIEP Annual Conference (Modena, September 2026), and the LXVII Annual Conference of the Italian Economic Association (Cagliari, October 2026). The views expressed in the paper are entirely the responsibility of the authors and should not be attributed to the Bank of Italy. All errors are our own.

[2]Borrowers belonging to priority categories benefit from a cap on the applicable interest rate, which is defined on the basis of market indices.

[3]The ISEE (*Indicatore della Situazione Economica Equivalente*) is the Italian indicator of household economic condition. It combines household income and wealth, weighted according to statutory criteria, and adjusts the resulting measure using an equivalence scale that accounts for household size and composition.

[4]The domestic literature has documented significant constraints in the mortgage market, but has not yet clarified the extent to which the Fund has actually generated additional credit or whether its impact has been homogeneous across areas.

contrast, the strengthening introduced in 2021 is associated with an increase of about 36 percent in new mortgages granted to young borrowers relative to those granted to other borrowers. The estimates also suggest that the policy increased credit to young borrowers by about €13.3 billion from July 2021 to December 2023. This implies that approximately three quarters of guaranteed mortgage credit corresponds to lending that would likely not have been granted in the absence of the measure and the fiscal incentives. Finally, we find that the policy effects vary across areas and are significantly stronger in economically disadvantaged ones.

The paper is organized as follows. Section 2 contains the literature review. Section 3 describes the First-Home Guarantee Fund and reviews its regulatory evolution. Section 4 presents the data. Section 5 documents the use of the measure. Section 6 illustrates the empirical strategy; Section 7 concludes.

2 Related literature

Young people's access to the housing market may be constrained by difficulties in obtaining financing, often linked to precarious employment, low entry-level wages, and information asymmetries. In the presence of imperfect information and unestablished creditworthiness, intermediaries tend to mitigate risk by requiring high down payments or stringent repayment criteria (Stiglitz and Weiss, 1981), with exclusionary effects that are particularly pronounced for applicants with insufficient wealth endowments and limited income capacity (Acolin et al., 2016). In the Italian context, where non-standard contracts and fragmented employment careers are highly prevalent among younger cohorts, these frictions translate into a postponement of first-home purchases, frequent reliance on family transfers, and delayed transitions to residential independence (Filandri and Bertolini, 2016; Gentili and Hoekstra, 2021; Bricocoli and Peverini, 2024). Similar dynamics have also been documented in other European countries, where the combination of high house prices, income stagnation, and employment insecurity has contributed to delaying both departure from the parental home and access to homeownership among younger cohorts (Lennartz et al., 2016).

Several measures have been developed internationally to support access to the mortgage market. Despite the variety of instruments, including subsidized interest rates, public guarantees, and public loans supplementing the mortgage, their common objective is to make homeownership more accessible to potential buyers. Within this framework, part of the literature discusses public guarantees as forms of implicit subsidy to households and the construction sector, highlighting both their potential benefits and their risks in terms of equity and financial stability (Elsinga et al., 2009).

In the United States, the Federal Housing Administration (FHA) has provided mortgage insurance since the 1930s with the aim of promoting home purchases by first-time buyers, including those with low-to-middle income. The scheme provides a public guarantee on the loan in exchange for the payment of an insurance premium by the borrower, with part of the credit risk falling on the public budget and exposing it to potential losses during housing market downturns, as occurred after 2007. In this context, Davis et al. (2020) show that the reduction in the FHA insurance premium in 2015 expanded the pool of homeowners, while also contributing to higher house prices in the most affected areas. Bhutta and Ringo (2021) document, for the same episode, an immediate increase in purchases resulting from the easing of the payment-to-income constraint. Grundl and Kim (2021) suggest that access to homeownership would be only modestly affected by a reduction in public guarantees, whereas Gete and Zecchetto (2018) show, using a heterogeneous-agent model, that removing such guarantees would increase inequality to the detriment of lower-income households. DeFusco and Paciorek (2017), exploiting a discontinuity in conforming loan limits, document a marked sensitivity of mortgage demand to financing conditions.

In the United Kingdom, the Help to Buy programme, active from 2013 to 2023 and com-

prising several schemes, including a public equity loan, a government guarantee on high-LTV mortgages, and an incentivized savings instrument, aimed to facilitate access to credit and support new construction. Carozzi et al. (2024), however, document a sizeable increase in house prices in areas with higher take-up, without a corresponding increase in housing supply, with benefits concentrated mainly among large construction firms.

With reference to the Italian mortgage market, several studies have analysed access conditions and credit dynamics. Chiuri and Jappelli (2003), in a comparative perspective across OECD countries, highlight the strong relevance of access to credit in determining homeownership rates, especially among younger age groups. Felici et al. (2012), using microdata on mortgage contracts, document a sharp decline in new originations following the global financial crisis, particularly pronounced for younger borrowers and for those born outside the European Union. Magri and Pico (2014) show a decline in the share of indebted households after the crisis, especially among younger and lower-income households, accompanied by a tightening of credit supply conditions. Liberati and Vacca (2016) highlight the roles of the loan-to-value ratio and the initial budget constraint as crucial factors leading to the exclusion from the mortgage credit market, while Mistrulli et al. (2023) show a negative effect of employment contract insecurity on the conditions offered by banks, especially for younger and low-income borrowers. With respect to the relationship between credit and house prices, Loberto and Zollino (2016) and Nobili and Zollino (2017) analyse the interaction between demand and supply factors in the Italian housing and credit markets, while Barone et al. (2021) estimate a positive and significant causal effect of mortgage supply on house prices. Finally, Affinito et al. (2025) identify income inequality as a key factor driving the dynamics of household mortgages.

This paper contributes to several strands of this literature. First, it relates to studies examining the effects of public guarantees as an instrument to support access to mortgage credit for categories of borrowers that may be credit rationed (Elsinga et al., 2009; Gete and Zecchetto, 2018; Grundl and Kim, 2021). It provides, for the first time, evidence based on granular data for Italy and systematically documents the use of the First-Home Guarantee Fund. We also jointly assess the effectiveness and additionality of the measure, in line with the approach adopted for the United States by Davis et al. (2020) and Bhutta and Ringo (2021), and for the United Kingdom by Carozzi et al. (2024). More generally, the paper contributes to the strand of literature assessing the impact of public credit guarantees (Zecchini and Ventura, 2009; Gropp et al., 2014; Gai et al., 2016; de Blasio et al., 2017; Jimenez et al., 2022), which has so far focused mainly on loans to firms.

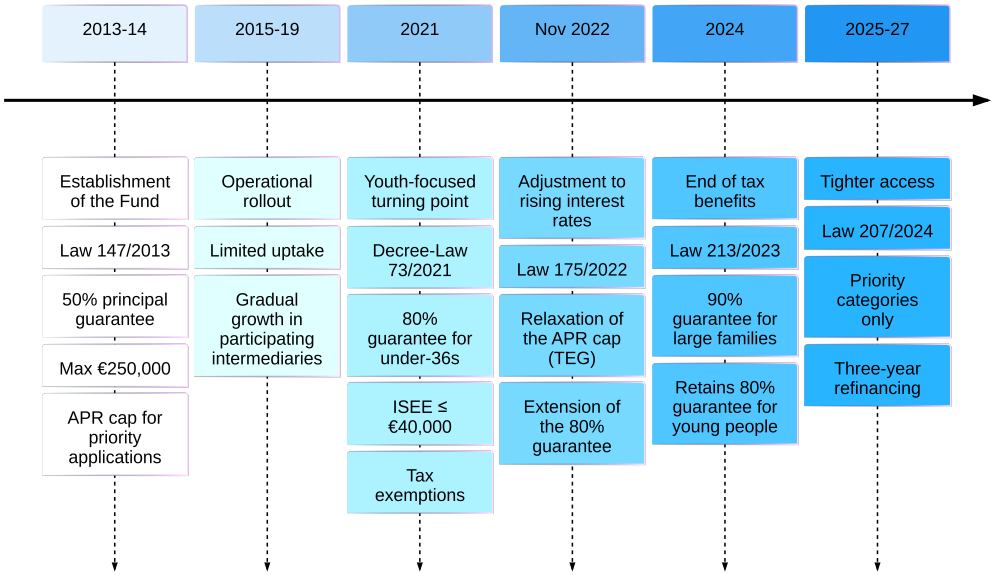
3 The First-Home Mortgage Guarantee Fund

In Italy, Law No. 147/2013 (the 2014 Stability Law) introduced a public guarantee scheme to facilitate households' access to the mortgage market for the purchase of a first home, with particular attention to younger households: the First-Home Mortgage Guarantee Fund (Fondo di garanzia Mutui per la prima casa), managed by Consap on behalf of the Ministry of Economy and Finance.[5] The Fund provides a public guarantee covering 50 percent of the principal amount of mortgage loans for the purchase of a first home, including loans combined with renovation works aimed at improving energy efficiency, for amounts of up to €250,000 and excluding luxury properties. Figure 1 reports the main regulatory milestones of the First-Home Guarantee Fund. Since its inception, the legislation has granted priority[6] to certain categories of beneficiaries, including young couples, single-parent households with minor children, individuals under the age of 36 with non-standard employment contracts, and tenants of public housing; it did not grant them exclusive access to the First-Home Guarantee Fund.

[5]The Fund incorporated the previous Fondo per la casa, the so-called Fondo Giovani Coppie, established in 2008. See Appendix A for details on the regulatory evolution of the First-Home Mortgage Guarantee Fund.

[6]Priority is relevant when applications are submitted on the same day.

Figure 1: Evolution of the guarantee legislation



The Decree of 31 July 2014, which defined the operational rules of the scheme, nevertheless introduced an interest-rate benefit for priority categories only. Initially, the annual effective overall rate (tasso effettivo globale, TEG) on the loan could not exceed the average effective overall rate (tasso effettivo globale medio, TEGM) published quarterly by the Ministry of Economy and Finance, with reference to the quarter preceding the loan origination.[7]

Participation in the Fund by banks is voluntary. The number of participating intermediaries granting mortgages backed by the First-Home Guarantee Fund has increased substantially over time. Guarantees are granted on first demand within the limits of the Fund's endowment,[8] with risk transferred to the State up to 50 percent of the principal amount, while the residual risk remains with the bank.

In the first years after the introduction of the First-Home Guarantee Fund, the origination of mortgages backed by a public guarantee remained limited, also because this period coincided with declining interest rates and relatively relaxed credit access conditions. The first loans were originated in 2015, but until 2017 the use of the measure was extremely limited. Subsequently, flows of guaranteed mortgages increased gradually, also in connection with significant regulatory changes.

In 2020, with the onset of the Pandemic, the targeting of the First-Home Guarantee Fund was strengthened, among the various measures aimed at supporting the recovery of the Italian economy, in order to concentrate resources on more vulnerable groups. From October 2020, access to the guarantee was temporarily restricted to applicants belonging to priority categories, but this restriction was repealed in December of the same year. In 2021, the functioning of the Fund was modified through a substantial intervention targeted at young borrowers. Decree Law No. 73/2021, the so-called "Sostegni bis" decree, raised the Fund's maximum coverage to 80 percent of the principal amount for mortgages requested by individuals under the age of 36 with ISEE up to €40,000, limited to loans exceeding 80 percent of the purchase price of the property, including ancillary costs. In addition, beneficiaries of the 80 percent guarantee were eligible

[7] This constraint was relaxed in 2022 in response to the sharp rise in interest rates; see below.

[8] As of 31 December 2024, the Fund's total endowment amounted to approximately €2,323.6 million, with residual available resources of approximately €95.6 million after deducting resources committed for provisions set aside under the risk coefficient, amounts paid following guarantee calls, and management costs. See Relazione sull'attività svolta dal Fondo di Garanzia per la prima casa – anno 2024.

for significant tax incentives, through exemptions from registration, mortgage, and cadastral taxes, as well as VAT relief. In the technical report accompanying the provision, the estimated financial effects of the tax incentives on the state budget amounted to about €347 million for 2021 and €260 million for 2022.[9]

The introduction of the 80 percent guarantee, together with the tax incentives, was initially provided for a limited period, until 30 June 2022. It was then extended until the end of 2022 and subsequently renewed for most of 2023, most recently through the 2023 Milleproroghe decree and Decree Law No. 132/2023.

At the end of 2022, in a context of rapidly rising market interest rates, the TEGM constraint became particularly binding. The cap on the interest rate applied to guaranteed mortgages was therefore subsequently relaxed.[10] Law No. 175 of 17 November 2022 introduced the possibility for banks to offer mortgages to young borrowers with ISEE below €40,000 at rates slightly above the TEGM, within a spread calculated monthly on the basis of developments in the IRS index.[11] This prevented the changed market conditions from leading to supply-side restrictions in guaranteed mortgages.

The 2024 Budget Law (Law No. 213/2023) extended the 80 percent guarantee for the whole of 2024 and introduced an even broader guarantee, equal to 90 percent, for large families. However, the tax incentives on property purchases were discontinued,[12] although they had contributed to supporting the extensive use of the measure by young borrowers from the second half of 2021 onward.

The 2025 Budget Law (Law No. 207/2024) extended the operation of the Fund until 2027 and refinanced its endowment, while limiting access to the guarantee to a list of priority categories: young people, single-parent households with minor children, tenants of public housing, and large families with ISEE below a given threshold.

According to Consap data (Consap, 2025), by the end of 2024 around 464,000 guarantees had been initiated, of which 435,700 were outstanding. Of these, only 0.6 percent had been suspended following a moratorium and classification as non-performing; in only 0.2 percent of cases had the guarantee been called. Overall, the measure made it possible to finance around €54.2 billion in mortgages. The nominal value of the guarantees amounted to €28.6 billion, with provisions of around €2.1 billion at the end of 2024[13].

4 The data

This paper uses a dataset covering the period 2011–2023, based on data from two sources managed by the Bank of Italy: the Italian Credit Register (CR, Centrale dei Rischi) and the quarterly survey of lending rates (Taxia, Rilevazione analitica dei tassi di interesse). From the CR, we extracted information on credit exposures of consumer households and reports on guarantees provided, as well as some demographic characteristics of loan holders. Taxia provides data on the interest rates. A detailed description of the dataset construction procedure and of the methodological choices adopted can be found in Appendix B.

The final dataset all mortgages identified as valid and newly originated in each quarter of the considered period. For each mortgage, the available information includes the quarter of

[9] Relazione Tecnica al Decreto-Legge 25 maggio 2021, n. 73 submitted to the Senate of the Republic in July 2021.

[10] Because the regulation imposed a cap on the TEG based on the TEGM observed in the previous period, the cap risked falling well below prevailing market rates.

[11] Law No. 175 of 17 November 2022 established that the TEG may exceed the TEGM up to the amount of the differential, if positive, between the average 10-year IRS recorded in the month preceding loan origination and the average 10-year IRS recorded in the quarter used to calculate the applicable TEGM.

[12] Under Law No. 18/2024, cases involving a preliminary sale agreement signed and registered by December 2023 were made eligible for the tax incentives.

[13] The risk provision, initially set at 10 percent of the guaranteed principal, was reduced to 8 percent from 2019.

origination, the lending bank, the loan amount and the guarantees. It also includes selected demographic characteristics of the debtor, such as age, gender, municipality of residence and municipality of birth, as well as information on the presence of multiple borrowers. For the subset of mortgages also observed in Taxia, we also know the type of interest rate (fixed or variable) and the annual percentage rate of charge (TAEG in Italian). Overall, the dataset includes around 4.3 million mortgages during the period 2011–2023, of which more than 330,000 are backed by the First-Home Guarantee Fund[14].

For the empirical analysis, the observations were subsequently aggregated at the level of Italy's Local Labour Market Areas (LMAs), according to the 2011 Istat definition. This dataset was then supplemented with the following variables: income tax returns from the Ministry of Economy and Finance; population composition by age group from Istat; average house prices from the Real Estate Market Observatory (OMI); and labour market conditions from Istat.

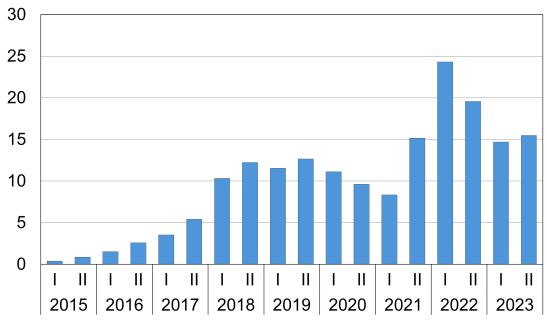
To assess the representativeness of our dataset, we compared it with statistics from other sources: supervisory reports on new mortgage flows and Consap financial statements in mortgage originations backed by the First-Home Guarantee Fund. The dataset showed high coverage in both comparisons, with limited discrepancies mainly attributable to methodological differences, such as different reporting thresholds.[15]

5 Descriptive analysis

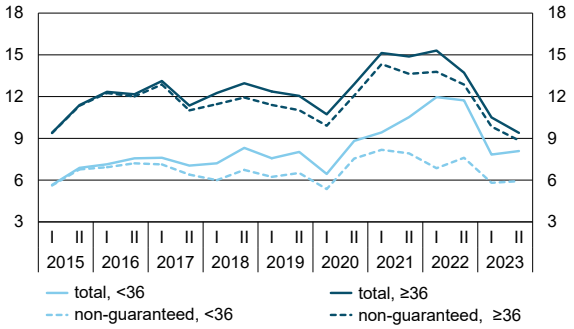
This section presents descriptive evidence on the use of the guarantee provided by the First-Home Guarantee Fund. In particular, we analyse its evolution over time and differences across categories of borrowers, especially by age group, territorial heterogeneity, the characteristics of lending banks, and, finally, mortgage costs and the share by type of interest rate.

Figure 2: Share of guaranteed mortgages and amount of total loans

(a) Share of new guaranteed mortgages
(percentage values)



(b) Loans by borrower age and guarantee status
(billion euro)



Source: Based on Central Credit Register.

Figure 2a reports, at a semi-annual frequency, the share of mortgages backed by the First-Home Guarantee Fund out of total new mortgages at the national level. The chart shows the gradual increase in the share of guaranteed mortgages up to 2019. After a temporary decline in the early stages of the Pandemic, the use of the measure strengthened markedly with the introduction, in mid-2021, of the 80 percent guarantee and the tax incentives, reaching almost one quarter of originations in the first half of 2022, before stabilizing at around 15 percent

[14]Interest-rate information from Taxia is available for around 2.1 million mortgages, including more than 240,000 that are backed by the First-Home Guarantee Fund.

[15]For further details and a quantification of the discrepancies, see Appendix B.

during 2023. Figure 2b shows the strong growth recorded between 2021 and 2022 in mortgages to young borrowers backed by the First-Home Guarantee Fund. The use of the 80 percent guarantee increased rapidly among younger borrowers, accounting for more than 80 percent of guaranteed lending to young borrowers in the last half of 2023, while remaining marginal for the older age group. The latter nevertheless continued to use the 50 percent guarantee (see Figure C.1 in the Appendix).

The analysis of the characteristics of borrowers who used the Fund guarantee shows greater use among younger borrowers: 67.3 percent of applicants for loans backed by the First-Home Guarantee Fund are under the age of 36, compared with 36.9 percent among non-guaranteed mortgages (see Table 1, and Figure C.2 in the Appendix for the age distribution in the sub-periods 2015—20 and 2021—23). Among guaranteed mortgages, the presence of a couple of joint borrowers is more frequent (46.4 percent compared with 39.2 percent), suggesting that the instrument supported young households. The presence of women is instead similar in the two groups, at around two thirds[16]. The share of mortgages granted to foreign citizens is almost three times higher among guaranteed mortgages (30 percent) than among non-guaranteed mortgages (11.2 percent)

Table 1: Descriptive statistics on mortgages in the CR sample and on the corresponding borrowers

	Mortgages with First-Home Guarantee	Mortgages without First-Home Guarantee	Total
Young under 36 (%)	67.3	36.9	40.3
Couple (%)	46.4	39.2	40.1
Woman (%)	67.0	64.9	65.2
Foreigners (%)	30.0	11.2	13.3
Average amount	116,895	125,537	124,563
Average amount for mortgages below €250,000	116,591	111,080	111,731

Source: Based on Central Credit Register. Data refer to averages over the period 2015–23.

Given the maximum amount eligible for access to the Fund guarantee, almost all mortgages backed by the Fund have amounts below €250,000; the corresponding share in the comparison group is around 95 percent. The average amount of mortgages in the CR sample backed by the Fund is, on average, lower than that of non-guaranteed mortgages. However, when considering only mortgages below €250,000, for which the Fund guarantee is applicable, the average amount is generally higher for guaranteed mortgages.

Figure 3 describes the territorial heterogeneity in the share of new mortgages backed by the First-Home Guarantee Fund out of total new mortgages. The evidence is presented separately for the periods 2015—20, when only the 50 percent guarantee was available (panel a), and 2021–23, after the introduction of the 80 percent guarantee and the related tax incentives (panel b).[17]

The analysis shows that, in the first phase, the use of the guarantee was generally limited, with a maximum value of 12.5 percent in Friuli Venezia Giulia. Its incidence was higher in the North-East regions and markedly more limited in the North-West. In the second phase, the use of the guarantee was more intense and more widespread across the country than in the previous phase, with only three regions below 14 percent.

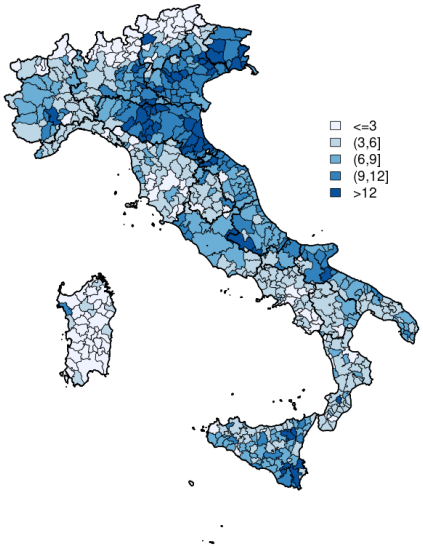
Since its introduction, the use of the First-Home Guarantee Fund among intermediaries has increased progressively up to 2022, when it reached its peak, equal to 51 percent of intermediaries

[16]In the case of jointly held mortgages, the characteristics of the youngest borrower are considered.

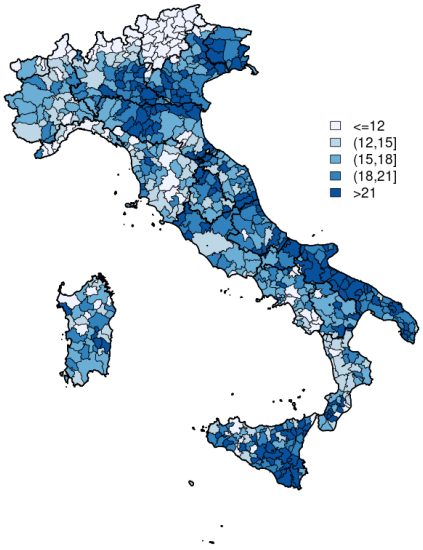
[17]Figure 3 reports data at the LMA level, while Figure C.3 in the Appendix provides the regional breakdown.

Figure 3: Share of new mortgages backed by the First Home Fund guarantee in total new mortgage lending, by local labour market area (LMAs), for the overall borrower population

(a) Period 2015–2020
(percentage values)



(b) Period 2021–2023
(percentage values)



Source: Based on Central Credit Register.

that originated residential mortgages during the year, compared with 15.1 percent in 2015 and 42 percent in 2023 (see Figure C.4a in the Appendix).

Similarly, the market share of intermediaries using the First-Home Guarantee Fund has increased. On average over the three-year period 2021–2023, these intermediaries accounted for 76 percent of the total amount of new mortgage originations, almost 20 percentage points higher than in 2015 (see Figure C.4b in the Appendix).

Figure 4 shows average interest rates on guaranteed mortgages[18] by borrower group and type of interest rate, together with the cap on the annual effective overall rate (TEG) granted to for priority categories.[19] The average rate applied to mortgages to young borrowers with the 80 percent guarantee remained well below the cap in all quarters, also as a result of the relaxation of the cap introduced at the end of 2022. For mortgages to young borrowers with the 50 percent guarantee, rates have been observed, since mid-2021, at levels broadly in line with those of mortgages guaranteed at 80 percent.[20] In all periods, the cost of new guaranteed mortgages granted to borrowers over the age of 36 is higher than that for young borrowers, and almost always above the cap.

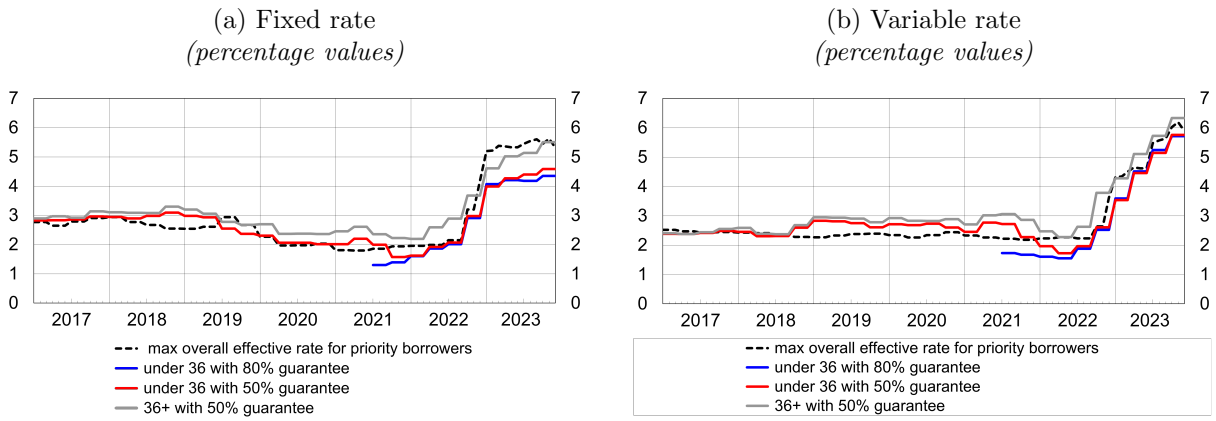
Figure 5 compares the cost of mortgages with and without the First-Home Guarantee Fund

[18]We now restrict the analysis to the subset of reports for which information on the applicable interest rate is available from Taxia; see Section 4.1 and Appendix B

[19]For priority categories, the legislation sets a cap on the TEG equal to the average effective overall rate (TEGM) in force for the quarter of origination. From the end of 2022, amid rapidly rising interest rates, this criterion was relaxed by raising the cap through a spread linked to developments in reference rates and determined monthly. The TEG may exceed the TEGM up to the amount of the differential, if positive, between the average 10-year IRS in the month preceding loan origination and the average 10-year IRS in the quarter used to calculate the applicable TEGM. The cap, including any increase due to the differential, is published monthly by Consap.

[20]The cases in which the TEG cap is exceeded in some quarters for mortgages to young borrowers with the 50 percent guarantee are plausibly attributable to the fact that membership in a priority category was not recognized automatically, but had to be explicitly declared by the applicant.

Figure 4: Average interest rates on residential mortgages by age group and presence of the First-Home Guarantee Fund guarantee (1)

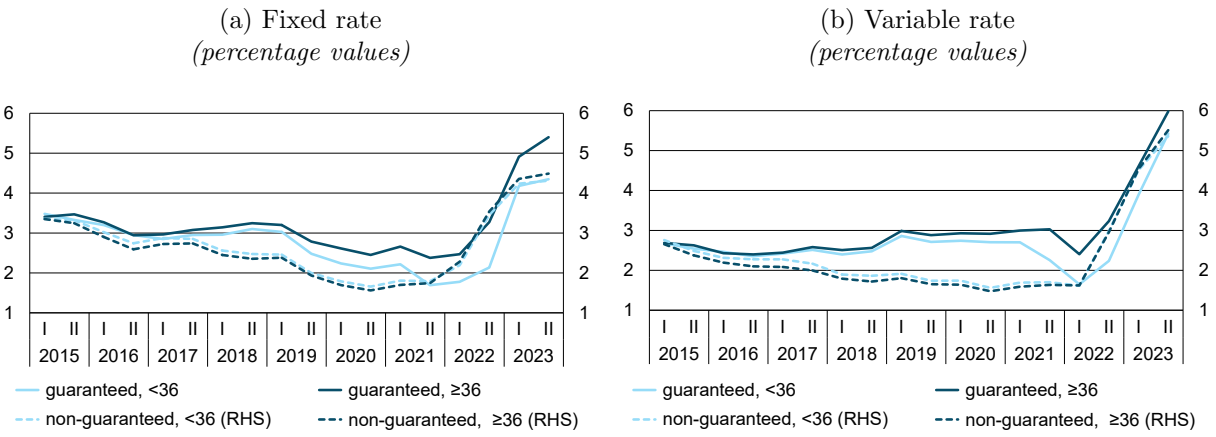


Source: Based on Central Credit Register and Taxia.
(1) To make the comparison more focused, average interest rates are computed considering only mortgages with amounts not exceeding €250,000 (the eligibility threshold for the First Home Guarantee Fund).

guarantee, by age group and type of interest rate. Until 2022, the year in which the First-Home Guarantee Fund was used most extensively, guaranteed mortgages had, on average, more expensive cost conditions than mortgages not backed by the Fund guarantee. This pattern occurred for both borrower age groups and for both types of interest rate. For mortgages backed by the First-Home Guarantee Fund, the cost differential between younger borrowers and older borrowers was always favourable to the former; moreover, the gap widened over time. By contrast, for mortgages not backed by the First-Home Guarantee Fund, the cost gap by borrower age was always close to zero, both for fixed-rate and variable-rate mortgages.

Since 2018, the first year in which guaranteed mortgages accounted for at least 10 percent of total new originations, the share of fixed-rate mortgages has been lower among guaranteed mortgages (see Figure C.5 in the Appendix). In particular, in the first half of 2018 the fixed-rate share stood at around 50 percent both for guaranteed mortgages to borrowers under the age of 36 and for those to borrowers over the age of 36, compared with similar values for non-guaranteed mortgages. This was followed by a phase of gradual increase in the fixed-rate share, which involved especially loans backed by the guarantee, interrupted only by the decline recorded in the second half of 2022. At the end of 2023, the fixed-rate share stabilized again at slightly above 80 percent, with non-guaranteed mortgages reaching values close to 90 percent.

Figure 5: Average interest rates on residential mortgages, by age group and First Home Fund guarantee status



Source: Based on Central Credit Register and Taxia.

6 Empirical analysis

6.1 Use of the Fund and mortgage dynamics: panel analysis

A first exercise aimed at investigating the effectiveness of the policy consists in analysing the relationship between the dynamics of newly originated mortgages, both overall and for the subset of young borrowers, and the degree of use of the guarantee by young borrowers.

The adopted econometric specification is the following:

$$\Delta \log M_{b,s,t} = \alpha + \beta \Delta G_{b,s,t} + \tau_b + \theta_s + \delta_t + \varepsilon_{b,s,t} \ , \tag{1}$$

where $\Delta \log M_{b,s,t}$ denotes the change in the logarithm of the amount of new mortgages granted to young borrowers by bank b in LMA s in year t relative to year $t-1$; $\Delta G_{b,s,t}$ is the change in the share of guaranteed mortgages granted to young borrowers (out of total mortgages); τ_b and θ_s denote bank and LMA fixed effects, respectively; δ_t denotes year fixed effects; and $\varepsilon_{b,s,t}$ is the error term. The coefficient β allows us to test whether there is a statistically significant relationship between the change in the share of guaranteed mortgages and the dynamics of new mortgages granted to young borrowers. Standard errors are clustered at the bank and LMA level, in order to account for possible correlation within both dimensions.

The fixed effects included in the model control for unobserved heterogeneity that may affect the relationship between the use of the guarantee and the dynamics of mortgage lending to young borrowers. Bank fixed effects account for time-invariant structural characteristics of each bank, such as risk appetite and lending policies. LMA fixed effects capture persistent differences across local areas, such as income levels, labour-market conditions, demographic characteristics, or the strength of the local housing market. Finally, year fixed effects control for macroeconomic or regulatory shocks that affect all observed units simultaneously over the sample period.

The model in equation (1) is augmented by interacting bank and LMA fixed effects with the time dimension to further reduce the risk of confounding the effect of the First-Home Guarantee Fund with idiosyncratic bank or area-specific dynamics. Bank-year fixed effects make it possible to control for shocks or strategies specific to each bank in a given year, such as changes in lending policies or in risk allocation. Similarly, LMA-year fixed effects account for local developments in the labour market, housing demand, or other time-varying territorial factors.

The estimates of the model (1), reported in Table 2, show a positive and statistically significant relationship between the dynamics of the mortgages granted to young borrowers and the

Table 2: Relationship between new mortgage lending to young borrowers and changes in the use of the First-Home Guarantee Fund

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable: Δ log loans	Mortgages to young borrowers	Mortgages to young borrowers	Mortgages to young borrowers	Mortgages to young borrowers	Total mortgages	Total mortgages	Total mortgages	Total mortgages
Δ share of guaranteed mortgages to young borrowers	0.235*** (0.031)	0.239*** (0.033)	0.106*** (0.018)	0.098*** (0.019)	0.134*** (0.027)	0.142*** (0.028)	0.057*** (0.018)	0.059*** (0.019)
Observations	55,707	55,545	55,171	55,005	55,707	55,545	55,171	55,005
R-squared	0.061	0.138	0.209	0.286	0.091	0.161	0.297	0.365
Fixed effects:								
LMA	Yes	No	Yes	No	Yes	No	Yes	No
Bank	Yes	Yes	No	No	Yes	Yes	No	No
Year	Yes	No	No	No	Yes	No	No	No
LMA × Year	No	Yes	No	Yes	No	Yes	No	Yes
Bank × Year	No	No	Yes	Yes	No	No	Yes	Yes

Notes: Model estimated using `reghdfe`. Standard errors clustered at the bank and LMA level are reported in parentheses. *** denotes statistical significance at the 1 percent level.

change in the take-up of the First-Home Guaranty Fund. In particular, a 10 percentage point increase in the incidence of mortgages backed by the First-Home Guarantee Fund is associated with a 2.4 percentage point higher growth rate of mortgages to young borrowers. This effect is confirmed when LMA-year fixed effects are included (column 2). When bank-year fixed effects are added (columns 3 and 4), the estimated coefficient falls by more than half, while remaining highly statistically significant. In this case, the identification relies on the variation over time in the intensity with which the same bank used the guarantee across different local areas.

Furthermore, when the change in total mortgages granted by a bank in a given LMA is used as an alternative dependent variable (Δ log), the estimates indicate that greater use of the First-Home Guarantee Fund for mortgages to young borrowers is associated with an increase in total mortgages granted by the bank in the LMA (columns 5–8). This evidence rules out the possibility that the result for young borrowers is driven by a substitution effect at the expense of older borrowers.

The relationship between the dynamics of mortgage lending to young borrowers and the use of the First-Home Guarantee Fund, observed at the bank-LMA level, could reflect only substitution patterns between banks that are more active and less active in the use of the instrument. To rule out this possibility, the model was estimated by aggregating the data at the LMA level (4,894 observations), including LMA and time fixed effects and clustering standard errors at the LMA level. The coefficient β on the variable of interest remains positive (0.19) and statistically significant (p-value 0.061). This evidence suggests that the instrument contributed to expanding young borrowers' access to mortgages, rather than just reallocating market shares across intermediaries.

The estimates in Table 2 were obtained over the 2015–23 period, thus abstracting from the major changes introduced to the First-Home Guarantee Fund mechanism in 2021, namely the increase in the guarantee coverage to 80 percent and the introduction of tax incentives for young borrowers with ISEE below a given threshold. To assess the impact of the new regulatory framework, the change in the share of guaranteed mortgages to young borrowers was interacted with a dummy variable (*post21*) equal to one for the 2021–23 period.

The estimation of the model at the bank-LMA level (column 1 in Table 3) indicates that there is no difference between the two sub-periods (2015–20 vs. 2021–23): the coefficient on the interaction term is small and statistically insignificant. However, when the estimates are repeated using data aggregated at the LMA level (column 2), the positive relationship between the use of the First-Home Guarantee Fund and the dynamics of mortgage lending to young borrowers emerges only from 2021 onward, consistently with the broader diffusion of the instrument after

Table 3: Relationship between new mortgage lending to young borrowers and changes in the use of the First-Home Guarantee Fund: pre- vs. post-2021 reform

	(1)	(2)
Dependent variable: Δ log loans to young borrowers	LMA–bank	LMA
Δ share of guaranteed mortgages to young borrowers	0.229***	-0.010
	(0.053)	(0.130)
Δ share of guaranteed mortgages to young borrowers × post-2021	0.011	0.370***
	(0.076)	(0.143)
Observations	55,707	4,894
R-squared	0.061	0.256
Fixed effects:		
LMA	Yes	Yes
Bank	Yes	–
Year	Yes	Yes

Notes: Model estimated using `reghdfe`. Standard errors are clustered at the bank and LMA level in column (1), and at the LMA level in column (2). *** denotes statistical significance at the 1 percent level.

the reform.[21]

6.2 The effect of the public guarantee: a shift-and-share approach

Although the First-Home Guarantee Fund policy was introduced uniformly at the national level, banks displayed heterogeneous participation, both in terms of intensity and timing. Therefore, it is possible to assess the role of bank supply in the diffusion of the guarantee by constructing a continuous treatment variable in the spirit of Bartik (Goldsmith-Pinkham et al., 2020). The treatment variable exploits differences in the banking composition across LMAs to construct an index of treatment intensity, reflecting the propensity of banks operating in each area to make use of the First-Home Guarantee Fund. More specifically, the variable is defined as it follows:

$$\mathbf{Z}^{P}_{l,t} = \sum_{b=1}^{N} w_{l,b}\theta^{P}_{b,t}, \tag{2}$$

where $\mathbf{Z}^{P}_{l,t}$ is the treatment intensity in LMA l at time t, referring either to the 80 percent guarantee[22] ($P = 80$) or to the 50 percent guarantee[23] ($P = 50$); $w_{l,b}$ is the market share of bank b in LMA l over the 2011–14 period, measured as the ratio between the value of all loans originated by the bank and total lending in the LMA;[24] and $\theta^{P}_{b,t}$ is a measure of bank

[21] According to the bank-LMA model, it seems that, at least in the first period, the Fund only helped banks acquiring market shares rather than expanding the overall provision of loans.

[22] The "80 percent guarantee" refers to the strengthening of the First-Home Guarantee Fund introduced by Decree Law No. 73 of 2021: for mortgages requested by individuals under the age of 36 with an ISEE not exceeding €40,000, the public guarantee coverage is raised to 80 percent of the principal and includes, in addition to specific tax exemptions, a cap on the applicable interest rate linked to the TEGM.

[23] The 50 percent guarantee was available to individuals in all age groups, unlike the 80 percent guarantee.

[24] Having banks market shares computed on total loans rather than young borrowers' strengthen the requirement of strict exogeneity between weights and the supply index. In fact, for $\mathbf{Z}^{P}_{l,t}$ to be a proper instrument, it is necessary that the market shares and the stance of the bank with respect to using the First-Home Guarantee Fund are uncorrelated. This is also the reason we compute these market shares before the introduction of the

b's national propensity to originate mortgages backed by the First-Home Guarantee Fund in semester t. With reference to the 80 percent guarantee, this propensity measure is obtained by estimating the following model at the bank-LMA-semester level:

$$\log \tilde{Y}^{g}_{l,b,t} = \alpha_l + \beta(X^1_{l,t}) + \theta^{P=80}_{b,t} B_{b,t} + \varepsilon_{l,t}, \tag{3}$$

where $\tilde{Y}^{g}_{l,b,t}$ is the flow of mortgages backed by the First-Home Guarantee Fund (only the the 80 percent guarantee scheme) granted to young borrowers under the age of 36 under by bank b in LMA l at time t; α_l denotes LMA fixed effects; and $X^1_{l,t}$ is a vector of LMA-level covariates that may affect credit dynamics: the activity rate, the number of employed individuals, the population under the age of 36, average house prices per square meter, and average income. Finally, $B_{b,t}$ are binary indicators identifying bank-time combinations, which allow us to estimate each $\theta^{80}_{b,t}$, namely the extent to which a bank relies on the 80 percent guarantee relative to other banks.[25]

With reference to the 50 percent guarantee scheme, the supply index is obtained by estimating the following model at the bank-LMA-semester level:

$$\log \tilde{Y}^{g}_{l,b,t} = \alpha_l + \beta(X^1_{l,t}) + \theta^{P=50}_{b,t} B_{b,t} + \varepsilon_{l,t}, \tag{4}$$

where $\tilde{Y}^{g}_{l,b,t}$ is the flow of mortgages backed by the 50 percent guarantee originated by bank b in LMA l at time t; α_l denotes LMA fixed effects; $X_{l,t1}$ is a vector of LMA-level covariates that may affect credit dynamics: the activity rate, the number of employed individuals, population, average house prices per square meter, and average income. Finally, $B_{b,t}$ are binary indicators identifying bank-time combinations, which allow us to estimate each $\theta^{50}_{b,t}$, namely the extent to which a bank relies on the 50 percent guarantee relative to other banks.

The indices $\mathbf{Z}^{P}_{l,t}$ take higher values in areas that are more exposed[26] to banks which, at the national level, originated guaranteed mortgages to a greater extent than other banks, after controlling for local demand dynamics.[27] The underlying assumption is that a bank's decision regarding the use of the guarantee is made at the national level and is therefore independent of the specific dynamics of each individual LMA. At the same time, the use of lagged market shares ensures that there is no endogeneity between bank b's policy and its market share in LMA l where it operates (Barone et al., 2021). On this basis, we estimate the following linear model:

$$\log Y_{l,t} = \alpha_{l,a} + \lambda_t + \beta_1(\mathbf{Z}^{50}_{l,t}) + \beta_2(\mathbf{Z}^{50}_{l,t}) I_{t\geq 2021h2} + \beta_3(\mathbf{Z}^{80}_{l,t}) + \beta X_{l,t} + \varepsilon_{l,t}, \tag{5}$$

where $\log Y_{l,t}$ is the logarithm of the total value of new mortgages in LMA l in semester t; $\alpha_{l,a}$ denotes LMA and age-group fixed effects, which control for time-invariant local characteristics; λ_t denotes semester fixed effects, which capture national trends and possible seasonality; $I_{t\geq 2021h2}$ is a dummy variable equal to one from the second semester of 2021 onward, when the two policies coexist; and $\varepsilon_{l,t}$ is the error term, clustered at the LMA level. Accordingly, β_1 measures the effect of the supply of mortgages backed by the 50 percent First-Home Guarantee Fund between 2015 and the first semester of 2021; β_2 measures the additional effect from the second semester of 2021 onward, when the two measures coexisted; and β_3 measures the effect of the enhanced 80 percent guarantee for young borrowers. Finally, $X_{l,t}$ is a set of observable covariates at the LMA-semester level: the logarithm of the number of residents, the activity rate, and the unemployment rate.

policy

[25] The regression results are reported in Appendix D, Table D.1. Alternatively, a model with LMA-time fixed effects was estimated, in which the covariates are therefore redundant; the coefficients thus obtained correlate by 99.9 percent with those obtained from estimating equations (3) and (4).

[26] Exposure, as mentioned earlier, is proxied by the average market share of the bank at the LMA level in the pre-policy period (i.e. over the years 2011-14).

[27] Appendix D reports the density of the distribution of the indexes over the periods 2015–20 and 2021–23 (Figure D.1).

Identification relies on two main sources of variation: the first is the cross-LMA variation in lagged banking composition, which determines different initial exposure to the policy; the second is the time variation in banks' participation in the policy, estimated through equations (3) and (4). The interaction between these two dimensions allows us to measure the effect of bank supply related to the First-Home Guarantee Fund on local credit activity.

The following assumptions are required for identification: (i) exogeneity of the exposure weights ($w_{l,b}$), which are predetermined and not affected by the introduction of the First-Home Guarantee Fund; (ii) exogeneity of banks' national supply policy with respect to the use of the guarantee in each individual LMA; and (iii) absence of general-equilibrium spillovers, namely that the impact of the policy in one LMA does not affect outcomes in other areas through general-equilibrium effects.

Table 4 reports the results from estimating the linear model, where treatment intensity is represented by $\mathbf{Z}^{P}_{l,t}$. The coefficients associated with the local supply of the 50 percent guarantee and with the 80 percent guarantee are statistically significant at the 5 and 1 percent levels, respectively. By contrast, the coefficient associated with the 50 percent guarantee during the period in which it coexisted with the 80 percent guarantee is not statistically significant, presumably because the latter was marketed more extensively and achieved considerably greater take-up.

Table 4: Effect of the First-Home Guarantee Fund on mortgage lending (continuous-treatment TWFE)

	Coefficient	SE	95% CI	p-value
$Z^{50}_{l,t}$	0.030	0.013	[0.00, 0.06]	0.024
$Z^{50}_{l,t} \times \text{post}_{t \geq 2021h2}$	-0.016	0.020	[-0.05, 0.02]	0.405
$Z^{80}_{l,t}$	0.043	0.016	[0.01, 0.07]	0.006
Unemployment rate	-0.026	0.003	[-0.03, -0.02]	0.000
Activity rate	0.004	0.004	[0.00, 0.01]	0.294
log(population)	0.778	0.198	[0.39, 1.17]	0.000
Constant	13.090	0.786	[11.55, 14.63]	0.000
Observations				13,090
Adjusted R^2				0.942
Clusters				609

Notes: The dependent variable is the logarithm of new mortgage flows. Estimates include LMA and semester fixed effects. Robust standard errors are reported.

The results suggest that the introduction of the First-Home Guarantee, initially available to all borrowers, and its subsequent strengthening through the 80 percent guarantee, reserved for borrowers under the age of 36 with ISEE below a given threshold, fostered a significant expansion of mortgage credit.

6.3 A difference-in-differences model on mortgages to young borrowers

To measure the causal effect of the public guarantee on the flow of new mortgages granted to young borrowers, we use a *difference-in-differences* model based on a semi-annual panel at the Local Labour Market Area (LMA) level over the period 2011–23. The idea is to compare the evolution of mortgage flows for young borrowers who are potentially eligible for the guarantee with that of an ineligible control group, namely individuals above the age of 35, before and after

the introduction of the 80 percent guarantee.[28]

The unit of observation is the LMA-age-group pair in each semester. The treated group consists of borrowers under the age of 36, who are eligible for the guarantee; the control group comprises borrowers aged 36 or older, who do not benefit from the measure. The dependent variable is the logarithm of the flow of new mortgages, denoted by $\log Y_{l,a,t}$, where l denotes the LMA, a the age group, and t the semester. The estimated equation is the following:

$$\log Y_{l,a,t} = \alpha_{l,a} + \lambda_{l,t} + \beta_1(Post^1_{a,t}) + \beta_2(Post^2_{a,t}) + \gamma_a \log(pop_{l,a,t}) + \varepsilon_{l,a,t}, \tag{6}$$

where $\alpha_{l,a}$ denotes fixed effects for LMA and age group, which control for time-invariant heterogeneity, and $\lambda_{l,t}$ denotes semester-LMA fixed effects, which absorb macroeconomic shocks common within each local labour market area, as well as shocks at the national level. $Post^1_{a,t}$ and $Post^2_{a,t}$ are indicators equal to one for the semesters following the introduction of the 50 percent and 80 percent guarantees, respectively, only for the group of individuals under the age of 36.[29] The coefficient β_1 captures the differential effect of the first phase of the policy, from the first semester of 2015,[30] on the treated group relative to the control group, while the combination $\beta_1 + \beta_2$ captures the effect of the 80 percent guarantee, from the second semester of 2021 onward. The coefficient γ_a associated with $\log(pop_{l,a,t})$ controls for the size of the potential pool of borrowers by age group across LMAs. Finally, $\varepsilon_{l,a,t}$ is the error term, which captures unobserved residual shocks.[31]

6.3.1 Identification assumptions

The identification of treatment effects relies on the standard assumptions of the *difference-in-differences* framework. First, it is assumed that, in the absence of the policy, mortgage flows for the treated and control groups would have followed similar trajectories over time. Given the controls included in the specification, the parallel-trends assumption is formulated conditionally: holding constant the dynamics of the potentially eligible population, mortgage flows to young and adult borrowers would have evolved similarly in the absence of the policy.

It is also assumed that neither individuals nor banks systematically changed their behaviour in anticipation of the formal implementation of the measure, and that any anticipatory changes are not correlated with the policy. A further assumption is the absence of unobserved shocks affecting the two groups, treated and control, differentially precisely around the introduction or strengthening of the guarantee, and not captured by the fixed effects or control variables. Finally, we rule out the possibility that the effect of the policy on the treated group indirectly affected the control group, for instance through strong general-equilibrium effects in local credit markets. Since all LMAs are exposed to treatment at the same dates, the model does not exploit any variation in treatment timing across geographical units, but relies exclusively on the comparison over time between the two age groups within the same LMA.

To assess the strength of the parallel-trends and no-anticipation assumptions, we examine whether significant differences are present between mortgage flows to young borrowers and those to other borrowers before the introduction of the policy (see Appendix D, Figure D.2). The estimates for the semesters preceding the introduction of the measure fluctuate around zero, and

[28] Over the period analysed, the 80 percent guarantee included both an interest-rate cap and tax incentives; therefore, it is not possible to assess the relative effectiveness of each component separately, but only that of the policy as a whole.

[29] The 50 percent guarantee was available to all individuals. What is tested here is whether the policy had a stronger effect on young borrowers relative to the rest of the population.

[30] Although the implementing decrees were issued during 2014, the first mortgage originations took place starting in 2015 (see Section 4).

[31] The specification reported here is estimated using `reghdfe`, which allows for the inclusion of multiple treatment indicators and fixed effects at the LMA-age group and LMA-semester levels, with standard errors clustered at the LMA-age group level. To assess robustness, Section 6.3.4 also reports estimates obtained using the `sdid` and `csdid` commands, with no discrepancies in the results obtained.

their respective 95 percent confidence intervals systematically include zero, without displaying a monotonic pattern or a consistently signed gradient over time. This pattern is consistent with the absence of differential pre-policy trends between the treated and control groups, as well as with the absence of anticipation effects: the joint F-test over all pre-treatment periods does not reject the parallel-trends hypothesis (p-value = 0.38).

6.3.2 Results

In the TWFE model with LMA and semester fixed effects, i.e. equation (6), the expansion of the guarantee to 80 percent in 2021, together with the introduction of tax incentives for the treated group, is associated with an increase in the flow of new mortgages of approximately 36 percent, statistically significant at the 1 percent level (see Table 5).[32]

To assess the economic relevance of this result, it is useful to translate the estimated effect into monetary terms. Considering the flow of new mortgages granted to young borrowers from July 2021 to December 2023, almost €50 billion, and given the estimated coefficient, the increase in credit attributable to the policy is estimated to be approximately €13.3 billion.[33] Comparing these values with mortgages backed by Consap and granted to young borrowers over the same period[34], we estimate that about three quarters of guaranteed mortgages correspond to additional credit that would likely not have been granted in the absence of the measure.

Table 5: Effects of the First-Home Guarantee policy on new mortgage flows (TWFE)

	Coefficient	SE	95% CI	p-value	Effect (%)
50% guarantee period (β_1)	-0.021	0.035	[-0.090, 0.047]	0.541	-2.1
80% guarantee period ($\beta_1 + \beta_2$)	0.308	0.044	[0.221, 0.395]	0.000	36.1
log(population over 36)	2.189	0.733	[0.752, 3.627]	0.003	–
log(young population)	0.196	0.269	[-0.332, 0.724]	0.467	–
Observations					34,216
Clusters					1,222
R^2					0.746

Notes: The dependent variable is the logarithm of new mortgage flows. The model is estimated using `reghdfe`, including fixed effects at the age-group × LMA level and at the LMA × semester level. Standard errors are clustered at the age-group × LMA level. The reported percentage effects are computed as $100(\exp(\beta) - 1)$; for the 80% guarantee, the effect refers to the combined coefficient $\beta_1 + \beta_2$.

This degree of additionality suggests that the guarantee may have eased credit constraints for young homebuyers. The instrument proved crucial in mitigating the effects of the monetary tightening of 2022-23, when the interest-rate increases implemented by the ECB dampened household demand for credit to purchase residential property. Furthermore, among households whose main income earner is under the age of 36, the share living in owner-occupied housing increased from 62.7 percent in 2021 to 64.6 percent in 2023[35]. The policy is likely to have contributed to this improvement. However, the gap with respect to the rest of households

[32]The introduction of the 50 percent guarantee in 2015 does not show a statistically significant average effect, a result consistent with the fact that the measure was not specifically targeted at the young population.

[33]The "counterfactual" flow corresponds to €50 billion divided by 1.361, that is, approximately €36.7 billion; the flow generated by the guarantee, €13.3 billion, is then obtained by difference.

[34]According to data provided by Consap, between mid-2021 and the end of 2023 the flow of mortgages granted to young borrowers with either the 50 or 80 percent guarantee amounted to approximately €17 billion.

[35]Data from the EU Statistics on Income and Living Conditions (EU-SILC), provided by Istat. The intertemporal comparison should be interpreted with caution, since the subgroup "households whose main income earner is under the age of 36" may change in both composition and size over time; Istat does not publish the relative size of the group across years.

remains sizeable: in 2023, the share of the overall population living in owner-occupied housing was 81.6 percent, driven by older households.

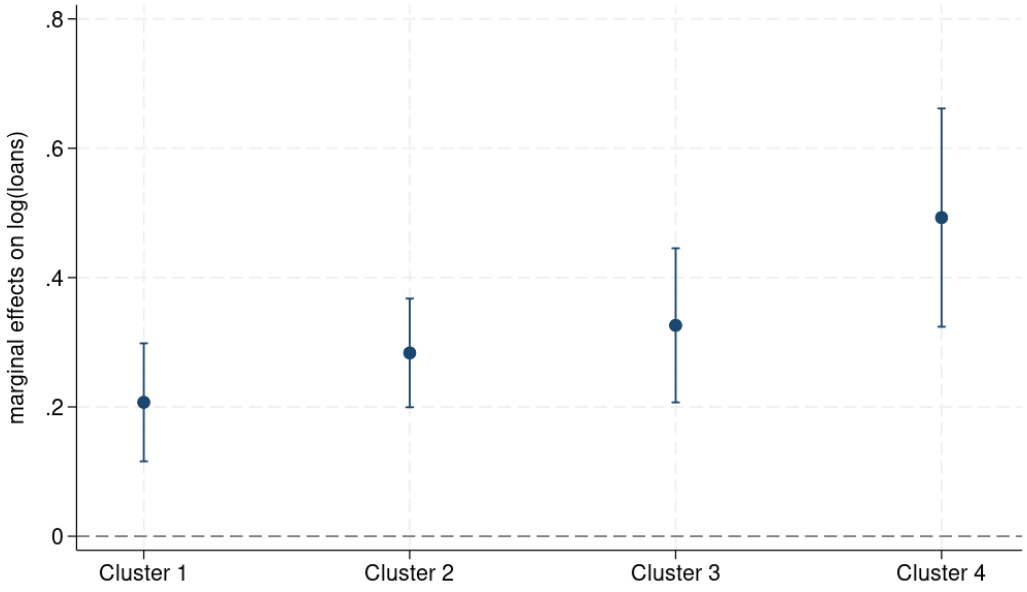
6.3.3 Extension: territorial heterogeneity

As an extension of the standard difference-in-differences model, reported in Equation (6), we introduce a specification that allows us to capture territorial heterogeneity in the effect of the policy by constructing groups of Local Labour Market Areas (LMAs) based on their pre-existing economic conditions.

To this end, we use only data for the 2010–11 period, prior to the introduction of the First-Home Guarantee Fund. For each LMA, we compute the average of three indicators: average income, the employment rate, and the activity rate. These variables are standardized as z-scores to make them comparable and to prevent any single dimension from dominating the clustering procedure. We then apply a hierarchical clustering algorithm based on Ward's linkage, which generates homogeneous groups according to the Euclidean distance between economic profiles (Murtagh and Legendre, 2014). The result is a classification into four territorial clusters (see Figure D.3 and Table D.2 in Appendix D), ordered such that Cluster 1 includes LMAs with the most favourable economic conditions, while Cluster 4 includes LMAs with the least favourable conditions.

The cluster assignments are subsequently merged back into the original dataset, allowing us to estimate a DID model with interactions between the treatment indicator related to the 80 percent guarantee[36] and the dummies indicating membership in the different LMA clusters. The dependent variable is the logarithm of the flow of new mortgages, and the specification includes fixed effects at the LMA-age group level and at the cluster-semester level, with standard errors clustered at the territorial level.

Figure 6: Average effect of the 80 percent Guarantee on mortgage flows by cluster



This extension allows us to analyse how the effect of the policy varies with local economic conditions, while avoiding bias from post-treatment contamination, since the classification is constructed exclusively using historical data. Moreover, the approach makes it possible to assess

[36]The 50 percent guarantee introduced in 2015 is omitted because the previous model showed no differential effect on young borrowers relative to the remaining borrowers.

the plausibility of the parallel-trends assumption within more homogeneous subgroups, thereby strengthening identification.

The results confirm substantial territorial heterogeneity: the impact of the policy increases as local economic conditions worsen, as one would expect due to the ISEE eligibility requirement for access to the policy (Figure 6). The effect is positive and highly significant, corresponding to an increase in flows of approximately 25 percent in Cluster 1. The impact is even larger in weaker areas: the overall effect reaches 31 and 40 percent in Clusters 2 and 3, while it exceeds 62 percent in Cluster 4, namely in the most economically fragile areas. This evidence is consistent with the hypothesis that the public guarantee provided a stronger stimulus to mortgage demand in structurally weaker areas[37].

The dynamics observed so far may also depend on structural differences in housing conditions, such as house prices per square meter, which, although correlated with territorial economic differences, are heterogeneous across LMAs. To test this, we estimated the effect of the more recent policy period, 2021–23, by dividing the LMAs within each cluster into three tertiles based on average house prices over the 2010–11 period, which is excluded from the DID regression[38]. The results of this additional heterogeneity analysis are reported in Figure 7. The most notable finding is a stronger impact in Cluster 3 for the tertile of LMAs with the lowest house prices per square meter, significantly larger than the effects estimated for the other two tertiles. Otherwise, no significant differences emerge in the policy effectiveness associated with different house-price levels among LMAs belonging to the same cluster. This is plausibly due to the fact that the type of properties purchased by young borrowers varies with territorial differences in housing affordability[39].

6.3.4 Robustness exercises

Table 6: Robustness checks: effect of the 80% guarantee on mortgage flows

	Coefficient	Robust SE	Test statistic	p-value	95% CI
SDID (ATT)	0.343	0.030	11.42	0.000	[0.284, 0.402]
CSDID (average ATT)	0.299	0.040	8.21	0.000	[0.228, 0.371]
CSDID 2021H2	0.150	0.030	4.74	0.000	[0.088, 0.212]
CSDID 2022H1	0.246	0.050	4.79	0.000	[0.145, 0.347]
CSDID 2022H2	0.458	0.050	8.58	0.000	[0.354, 0.563]
CSDID 2023H1	0.164	0.060	2.70	0.007	[0.045, 0.283]
CSDID 2023H2	0.479	0.080	5.89	0.000	[0.320, 0.639]

Notes: The table reports average treatment effects (ATT) estimated using the `sdid` and `csdid` estimators. For SDID, standard errors are computed using bootstrap with 500 replications. CSDID estimates allow for heterogeneous treatment effects across periods.

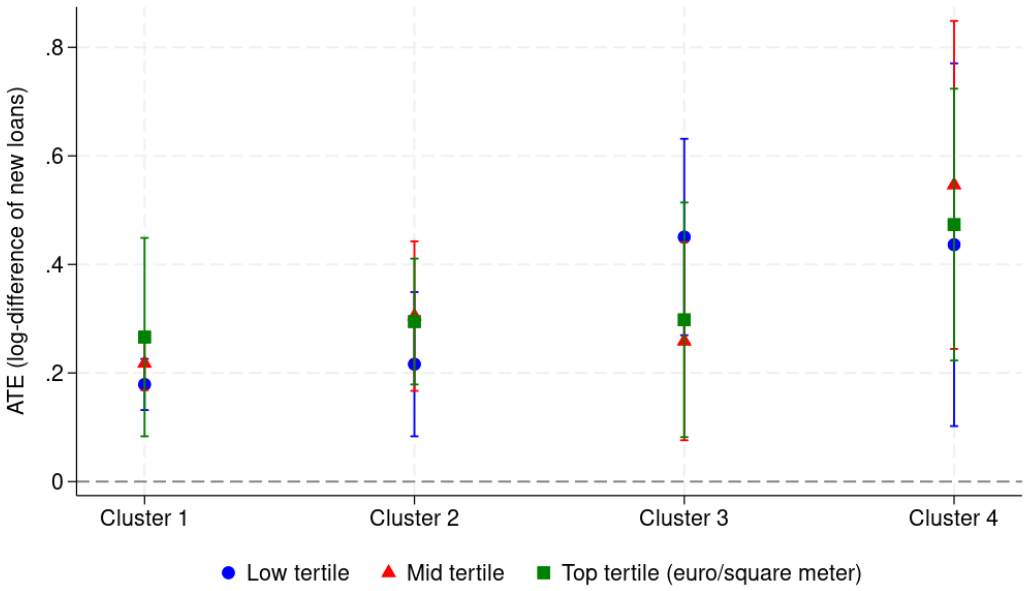
Alternative specifications. – To assess the sensitivity of the results to the identifying assumptions, the model was estimated using both the `sdid` command, with bootstrap standard errors, and the `csdid` command. These estimators were proposed by Arkhangelsky et al. (2021)

[37] As a robustness check, we augmented the baseline model by adding the first principal component, extracted via PCA from the unemployment rate, activity rate, house prices per square meter, and average income. The first eigenvalue explains 72 percent of the total variance. The component is included both on its own and interacted with the treatment term. The interaction coefficient is equal to -6 percent and is statistically significant at the 1 percent level: the effect of the 80 percent guarantee is stronger in economically disadvantaged areas, even after controlling for the fact that mortgage flows are higher in more developed areas.

[38] Table D.3 in Appendix D reports descriptive statistics on house prices per square meter across the four LMA clusters.

[39] This suggests that a housing affordability index based on average house prices per square meter may be relatively uninformative about the actual conditions of access to first-home purchases for more vulnerable individuals.

Figure 7: Average treatment effect of the guarantee across economic clusters and house-price tertiles (euros per square meter)



and Callaway and Sant'Anna (2021), respectively: the former relies on a less restrictive parallel-trends assumption than the standard DID estimator, while the latter is specifically designed for settings with staggered treatment adoption and allows treatment effects to vary across groups and periods. As reported in Table 6, the average coefficients are virtually unchanged relative to the baseline specification.

Unobserved heterogeneity. – The estimate of the average treatment effect may mask nonlinear effects across LMAs of very different sizes. This concern is partly addressed by considering both the differential availability of the guarantee and the cluster-based analysis exploiting differences in local economic performance. To further assess the role of otherwise unobserved territorial heterogeneity, we re-estimated the DID model using different weights: the population aged over 15, the inverse of population, and the inverse of the variance of mortgage flows[40]. In all three cases, the effect of the policy from the second semester of 2021 onward is statistically significant, with coefficients ranging from 0.26 to 0.51, consistently with the different scale of the effects observed across economic clusters.

7 Conclusions

In this paper, we analyze the functioning of the First Home Fund guarantee, the main policy instrument supporting access to mortgage credit in Italy. By constructing an original dataset, we describe the use of the instrument, examining its evolution over time, differences across borrower categories (particularly by age group), territorial heterogeneity, the characteristics of lending banks, and, finally, mortgage costs and the distribution by interest rate type.

Moreover, we estimate the effectiveness of the guarantee in supporting new mortgage lending to young borrowers for the purchase of their first home, particularly following the extension of the guarantee to 80 per cent and the simultaneous introduction of targeted tax incentives. Our estimates show that the policy is associated with a significant increase in credit flows granted to young individuals, with more pronounced effects in areas characterized by weaker initial

[40]Using weights can provide information whether the results are driven by few large (or small) LMAs rather than the majority of areas.

economic conditions.

This paper leaves several avenues for future research. Potential extensions include: the effect of the measure on homeownership access among young individuals; possible interactions between the First Home Fund guarantee and regional or provincial housing support schemes (such as those in place in Friuli Venezia Giulia or in the autonomous provinces of Trento and Bolzano), which differ in type and intensity and may generate complementary or substitution effects with the state guarantee. The quantification of any potential advantage accruing to intermediaries could also be considered within a broader framework for evaluating the policy's impact on public finances, allowing for a more comprehensive comparison between the benefits in terms of improved access to credit for young borrowers and the potential costs for the government budget.

A Appendix A: Regulatory chronology of the First-Home Guarantee Fund

Table A.1: Regulatory chronology of the First-Home Guarantee Fund

Date	Legal reference	Main changes
27/12/2013	Law No. 147/2013 (Stability Law 2014)	Establishment of the **First-Home Guarantee Fund**. Public guarantee up to **50%** of the loan principal. Priority given to young couples, single-parent households, and young workers with atypical contracts.
31/07/2014	Interministerial Decree	Operational rules defined; management assigned to **Consap**. Interest rate cap for priority groups: TEG $\leq$ TEGM. Maximum loan amount: **€250,000**.
13/10/2020	Law No. 126/2020	Access to the guarantee temporarily **restricted to priority groups**.
18/12/2020	Law No. 176/2020	Restriction removed; general access restored.
25/05/2021	Decree Law No. 73/2021 ("Sostegni bis")	Guarantee raised to **80%** for borrowers under 36 with ISEE $\leq$ 40,000. Introduction of **tax incentives**. Eligibility restricted to high-LTV loans.
30/12/2021	Law No. 234/2021	Extension of 80% guarantee and tax incentives to end-2022.
17/11/2022	Law No. 175/2022	Relaxation of the **TEG cap** via IRS-based spread mechanism.
24/02/2023	Law No. 14/2023	Further extension of 80% guarantee and tax incentives (mid-2023).
03/07/2023	Law No. 87/2023	Extension of measures to September 2023.
29/09/2023	Decree Law No. 132/2023	Extension of 80% guarantee and tax incentives to end-2023.
30/12/2023	Law No. 213/2023 (Budget Law 2024)	Extension of 80% guarantee to 2024. Introduction of **90% guarantee** for large families. Tax incentives discontinued.
23/02/2024	Law No. 18/2024	Partial reintroduction of tax incentives for pre-registered purchase agreements.
30/12/2024	Law No. 207/2024 (Budget Law 2025)	Fund extended to 2027 and refinanced. Access limited to priority categories (young households, families, public housing tenants).

B Appendix B: Credit data sources and dataset construction

The dataset used for the analysis was constructed using information drawn from the Credit Register (CR) and the Analytical Survey of Active Interest Rates (Taxia) for the period 2011–2023. From the CR, monthly information was extracted regarding: i) the debt exposures of a subject towards an intermediary, provided they amount to at least 30,000 euros; ii) the guarantees received by intermediaries to cover credit exposures. The Taxia survey is based on reports from a sample of banks comprising the main credit institutions operating at the national level. In this work, quarterly reports on the annual percentage rate (APR) of new fixed-term transactions aimed at the purchase of residential property[41] were used, subject to a reporting threshold of 75,000 euros. The CR also provides certain personal characteristics of borrowers (age, sex, municipality of residence and of birth, province of residence). In the case of mortgages jointly held by two or more individuals, the personal details of the youngest account holder were considered for the purposes of the analysis. To identify new mortgage transactions for the purchase of a primary residence, loans recorded in the CR granted to consumer households and having a duration and residual duration compatible with mortgage loans[42] were first selected. Second, reports were excluded that showed, for the same borrower, a ratio between the loan amount[43] at a given date and the previous one falling between 0.9 and 1.1. This was done to exclude loans already in existence at the previous date, and therefore not disbursed at the reference date. Finally, to correctly identify the originating bank, corrections were made for mergers and incorporations among banking intermediaries, and any loan assignments and securitisations were taken into account. In order to identify, among the new mortgage transactions, those backed by a guarantee from the *Fondo prima casa*, the dataset was supplemented with information on guarantees received by intermediaries and issued by Consap or the *Fondo prima casa*. The merge between the mortgage data and the guarantee data was carried out on the basis of the registered subject and the reporting intermediary. The dataset, converted to a quarterly frequency, was further supplemented with Taxia interest rate data. A tolerance on amounts (equal to ±500 euros) and on dates (with a maximum deviation of one quarter) was applied to the merge operation.

Consistency checks of the dataset against other sources To ensure the representativeness of our dataset, we compare the data reconstructed from the CR with statistics from other sources. We compare the disbursements of loans guaranteed by the *Fondo prima casa* with data available (from 2016 onwards) from Consap's final financial statements, while we compare the flows of new mortgages with information drawn from supervisory reports periodically published by the Bank of Italy. The comparison with data published by Consap (Tab. B.1), regarding the number and amount of mortgages guaranteed by the *Fondo prima casa*, indicates a high coverage of our sample; in terms of amount, dataset coverage ranges from 72 to 94 per cent across the different years of analysis. The discrepancy is likely attributable to factors such as the presence of the reporting threshold and some possible failures by certain banks to report the guarantee in the CR[44].

We carried out a further comparison between the entire sample of mortgages reconstructed by us on the basis of CR data and the statistics drawn from supervisory reports on new mortgage disbursements to households, from 2017 onwards. Over the period considered, the ratio between the two sources remains within a range of between 93 and 99 per cent, confirming the excellent representativeness of the reconstructed sample (Tab. B.2). This result is particularly significant

[41] Variable tip_att =27

[42] Values: 2, 16, 17 for duration; 2, 18 for residual duration

[43] In terms of both the amount granted and the amount drawn.

[44] The Bank of Italy, in a communication dated 16 February 2024, clarified that guarantees issued by the "*Fondo prima casa*" must not be reported in the CR, as they qualify as *ex lege* guarantees pursuant to Circular No. 139/1991. The adjustment of reports was required to be completed by March 2024. From that date onwards, it is therefore no longer possible to identify the phenomenon of *Fondo prima casa* guarantees through the CR.

Table B.1: Mortgages backed by the First-Home Guarantee Fund: Consap vs CR sample

	2017	2018	2019	2020	2021	2022	2023
Consap (number)	21,272	46,784	47,815	40,979	53,613	110,451	61,473
Consap (€mn)	2,379.8	5,229.6	5,277.4	4,602.3	6,285.3	13,862.7	7,000.0
CR sample (number)	15,074	40,880	43,498	35,647	49,942	92,128	47,449
CR sample (€mn)	1,720.0	4,599.5	4,827.4	3,982.9	5,879.8	11,568.9	5,382.0
Ratio (number, %)	70.9	87.4	91.0	87.0	93.2	83.4	77.2
Ratio (amount, %)	72.3	88.0	91.5	86.5	93.5	83.5	76.9

Source: Based on Central Credit Register and Consap financial statements.

when one considers that the 30,000 euro reporting threshold established for the CR does not apply to supervisory reports.

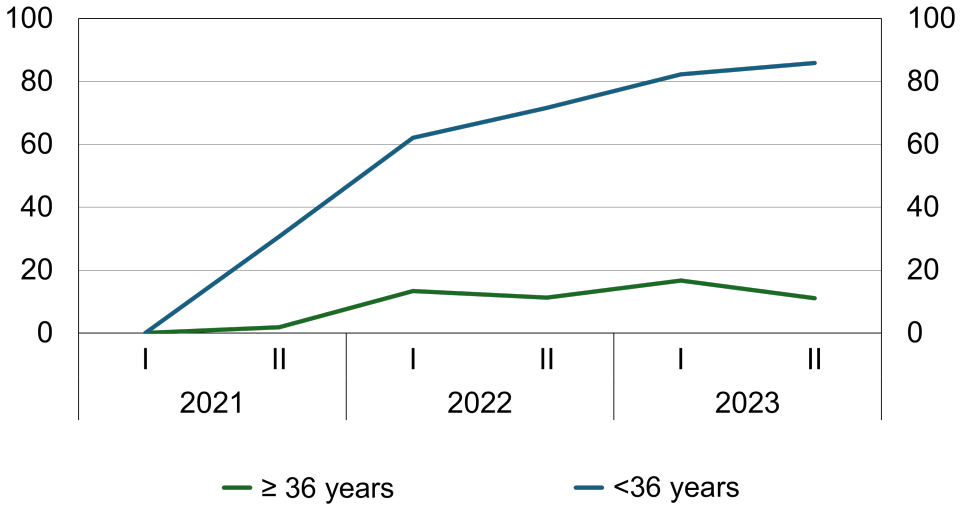
Table B.2: Comparison of new mortgage flows: CR sample vs supervisory data

	2017	2018	2019	2020	2021	2022	2023
CR amount (€mn)	38,965	40,588	39,863	38,732	49,789	52,528	35,698
CR number	324,547	334,536	325,035	304,160	378,893	396,417	280,877
Supervisory flows (€mn)	39,783	42,731	41,322	40,107	53,389	53,014	37,937
Ratio (%)	97.9	95.0	96.5	96.6	93.3	99.1	94.1

Notes: CR amounts and supervisory flows are rounded to the nearest million euros.
Source: Based on Central Credit Register and supervisory statistics.

C Appendix C: Additional descriptive figures

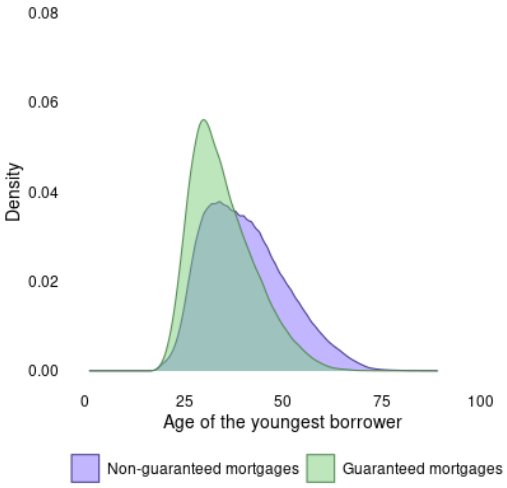
Figure C.1: Share of total guaranteed amounts covered at the 80 per cent guarantee level, by age group



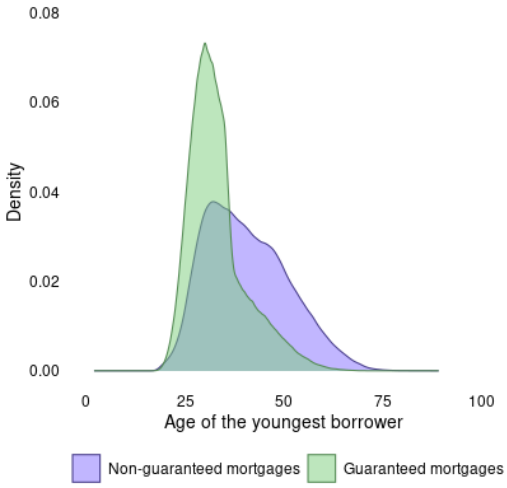
Source: Based on Central Credit Register and Taxia.

Figure C.2: Loans distribution by borrower age(1)

(a) Period 2015–2020



(b) Period 2021–2023

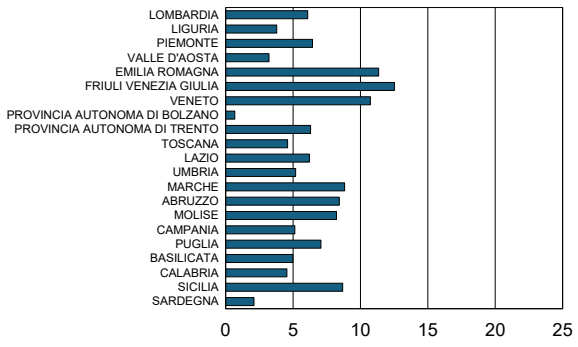


Source: Based on Central Credit Register.

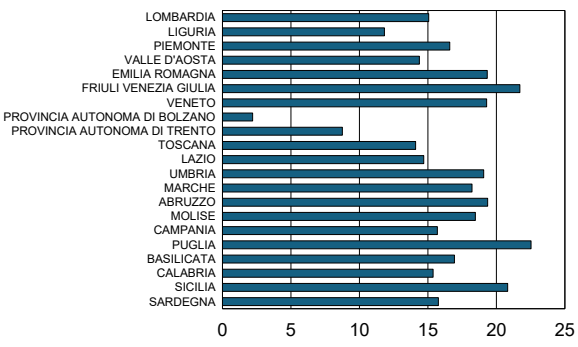
(1) In the case of joint mortgages, the youngest borrower is considered.

Figure C.3: Share of new mortgages backed by the First Home Fund guarantee in total new mortgage lending, by region, for the overall borrower population

(a) Period 2015–2020
(percentage values)



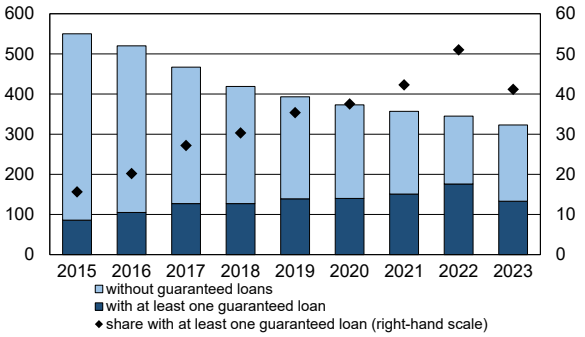
(b) Period 2021–2023
(percentage values)



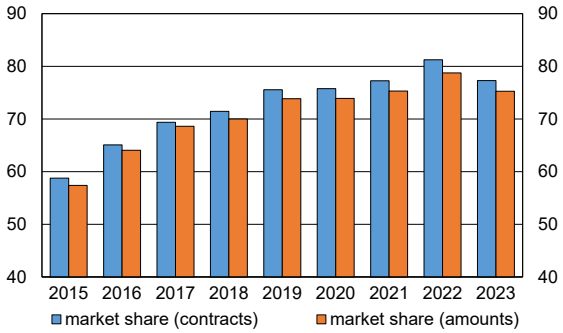
Source: Based on Central Credit Register.

Figure C.4: Use of the First Home Fund guarantee across banks

(a) Number of banks
(units and percentage values)



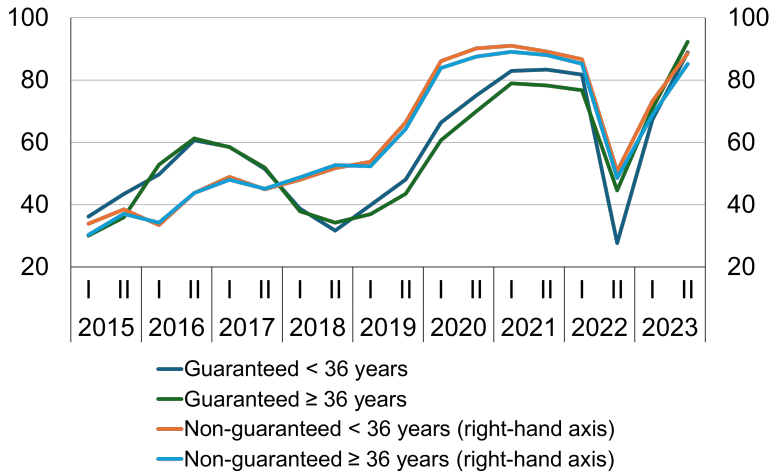
(b) Market share of banks that used the guarantee[(1)]
(percentage values)



Source: Based on Central Credit Register.

[(1)] Share of new mortgages granted by banks that used the guarantee during the year in total new mortgages granted by the banking system as a whole.

Figure C.5: Share of fixed-rate mortgages in total disbursements



Source: Based on Central Credit Register and Taxia.

D Appendix D: Additional figures and tables for estimates

Figure D.1: Density of $Z_{l,t}^{P}$

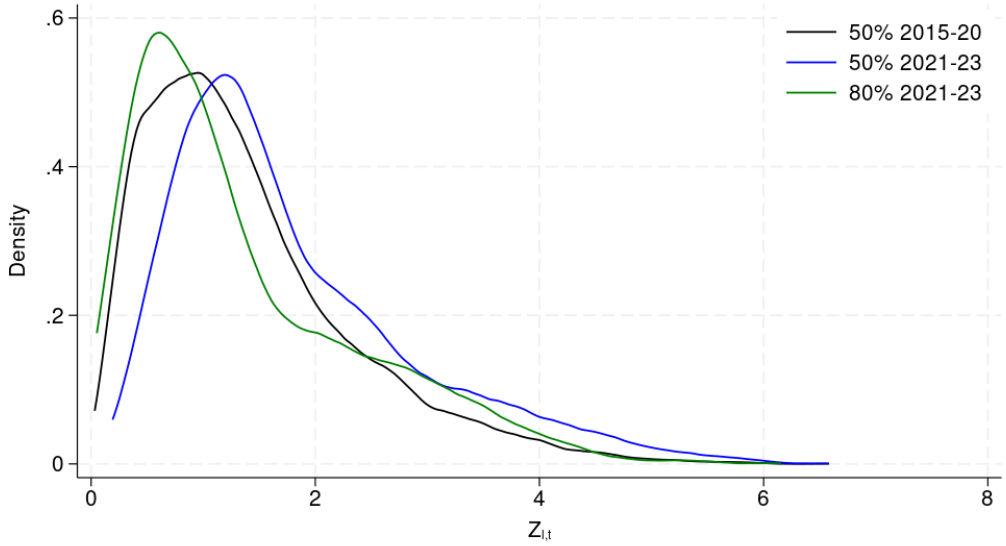


Figure D.2: Test of pre-treatment parallel trend

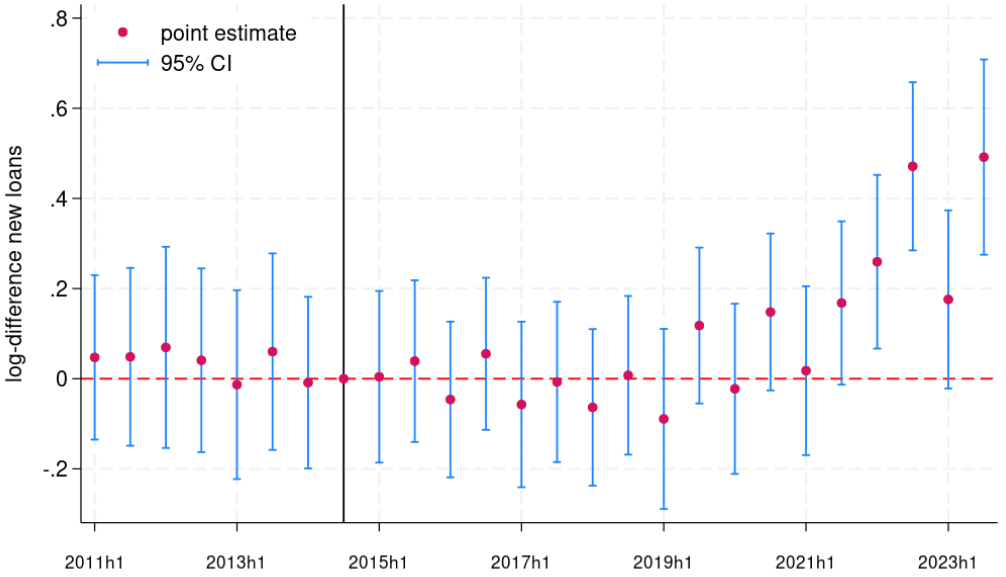


Table D.1: Regression of mortgage flows with 80% guarantee

	Coefficient
Employment	0.005
	(0.001)
Activity rate	-0.023
	(0.005)
Population under 36	-4.9×10^{-6}
	(1.6×10^{-6})
House price (€/sqm)	-1.8×10^{-4}
	(9.5×10^{-5})
Average income	1.97×10^{-5}
	(5.00×10^{-5})
Constant	1.670
	(0.300)
Observations	942,461
Adjusted R^2	0.31
Fixed effects	Bank × time, LMA

Notes: Robust standard errors in parentheses. Estimated using `reghdfe`. Bank-time fixed effects are used to construct the treatment intensity index.

Table D.2: Economic characteristics by cluster

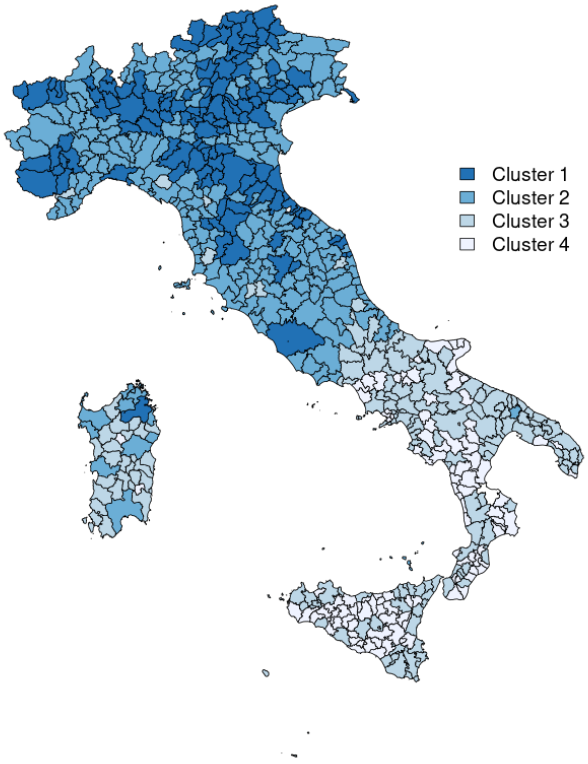
	Income (€)			Activity rate (%)			Employment rate (%)			
	p25	median	p75	p25	median	p75	p25	median	p75	No. of LMAs
Cluster 1	2,886	3,288	3,693	50	52	53	53	55	56	130
Cluster 2	2,274	2,612	2,914	44	46	48	48	49	51	215
Cluster 3	1,389	1,645	1,876	34	36	38	39	41	43	158
Cluster 4	1,063	1,202	1,349	29	30	32	34	35	37	106

Table D.3: Distribution of average house prices per square meter by cluster (€)

	1st tertile	2nd tertile	3rd tertile	Mean	Max
Cluster 1	1,062	1,471	2,663	1,734	6,203
Cluster 2	894	1,155	2,112	1,382	8,334
Cluster 3	663	893	1,444	965	3,769
Cluster 4	524	616	873	671	1,970

Notes: Prices are averages at LMA level.

Figure D.3: Economic clusters by activity rate, employment, and mean income (1), 2010–2011.



Source: Based on Istat and MEF data.

(1) Higher cluster had worse economic performance.

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