

ERNESTS ROMANOVS
JĀNIS STRAZDIŅŠ

ESTIMATING UNDER-REPORTED REAL ESTATE TRANSACTION VALUE: EVIDENCE FROM LATVIA

DISCUSSION PAPER

1 / 2026



This source is to be indicated when reproduced.

© Latvijas Banka, 2026

Latvijas Banka
K. Valdemāra iela 2A, Rīga, LV-1050
Tel.: +371 67022300 info@bank.lv
<http://www.bank.lv> <https://www.macroeconomics.lv>

Estimating Under-Reported Real Estate Transaction Value: Evidence from Latvia

Ernests Romanovs*, Jānis Strazdiņš

October 13, 2026

Abstract

Compared to other EU countries, the informal economy constitutes a relatively large share of economic activity in Latvia, inherently leading to weaker formal financing. Within the mortgage market, this negative impact operates through two primary mechanisms: first, under-reported income lowers borrowing capacity by inflating debt service-to-income ratios; second, under-reported real estate transaction values distort market data, hindering accurate collateral valuation. This study focuses on the latter mechanism, quantifying the transaction value distortion within the residential apartment sector by comparing the gap between listed and reported values for mortgaged versus non-mortgaged transactions. Combining data from the Real Estate Transactions database, the Bank of Latvia's Credit Registry, and web-scraped real estate listings between 2021 and 2025, this study reveals that for non-mortgaged apartment transactions, the gap between the last listed price and the reported transaction value is approximately 11 percentage points larger than for otherwise comparable mortgaged transactions, which are assumed not to exhibit under-reporting of transaction values due to differences in tax incentives and bank oversight. Furthermore, this discrepancy expands by an additional 4 percentage points when the seller has owned the property for 60 months or less, a threshold below which transactions fail to be eligible for the ownership-period-based capital gains tax exemption.

Keywords: Real Estate; Tax Evasion, Housing Market

JEL Codes: R32, H26

*Monetary Policy Department, Latvijas Banka, K. Valdemāra iela 2a, Rīga, LV-1050, Latvija; e-mail: Ernests.Romanovs@bank.lv

This study has greatly benefited from comments received from the Latvian Ministry of Finance and internal seminars at the Bank of Latvia. Special thanks to Kārlis Vilerts for providing feedback and guidance throughout the research process, and Valdis Grudulis for valuable comments.

Disclaimer: The views expressed herein are solely those of the authors and do not necessarily reflect the views of Latvijas Banka.

1 Introduction

In Latvia, the prevalence of the informal economy and its broader economic implications remains a central topic for policymakers and economists alike. Restricting the informal economy has been listed as one of the government’s priorities and several designated plans to reduce it have been put in place ([The Ministry of Finance of Latvia 2020](#)). Nevertheless, the prevalence of the informal economy remains relatively high as evident by the latest results of the Shadow Economy Index for the Baltic Countries, which estimate Latvia’s informal economy at 21.8 % of GDP in 2025 ([Sauka and Putniņš 2026](#))¹.

Lost tax revenues are not the only issue, since the prevalence of the informal economy not only erodes the fiscal base but also distorts markets, diminishes institutional credibility, and deters investors from committing capital ([FICIL 2025](#)). Similarly, the prevalence of the informal economy deters banks from issuing mortgage loans in parts of the country where the informal economy is more pronounced ([Bank of Latvia 2024](#)). The negative effect of the informal economy on mortgage financing comes from two main mechanisms: 1) the under-reported income decreases the maximum loan amount one can obtain due to regulatory limits in the debt service-to-income ratio; 2) a high prevalence of under-reported real estate transaction values hinders the ability to accurately assess the value of real estate and, hence, the value of collateral. This study focuses on the latter, assessing the distortion size in the residential apartment sector. More specifically, this study takes advantage of the availability of granular transaction level data and the incentive structure of Latvia’s tax system to identify the under-reported transaction value in the real estate market.

Transactions with residential real estate in Latvia are subject to a number of tax-related costs. Costs which are calculated in relation to the reported transaction value are capital gains tax and stamp duty. Capital gains tax is calculated by applying the tax rate to the reported sale value net of the reported acquisition value and any capital investments made during the holding period ([Likumi.lv, 2024](#), Article 11.9). Since 2025, the rate applied to this difference is 25.5 %² ([Likumi.lv, 2024](#), Article 15). However, there are multiple exemptions, most notably if a person has owned the real estate being sold for more than 60 months and has reported that real estate as their primary

¹Other estimates of the size of Latvia’s informal economy vary considerably: [Schneider and Asllani \(2022\)](#), using a Multiple Indicators and Multiple Causes approach, put it at 19.9 % of GDP in 2022, while [EY \(2025\)](#), using a Currency Demand Approach, report a comparatively low 9.3 % in 2023. This variation stems from differences in methodology rather than the year of estimation, as it persists across overlapping periods.

²In the period between 2018 and 2024 the rate was 20 % ([Likumi.lv, 2018](#), Article 15). In the period starting 2010, when the capital gains tax on real estate transactions was introduced, up until 2017 the rate was 15 % ([Likumi.lv, 2010](#), Article 15).

residence for at least 12 consecutive months in that period. In this case, the transaction is exempt from the capital gains tax (see the full list of exemptions in [Likumi.lv 2023](#), Article 9).

The second important cost for the parties involved in transacting the real estate is the stamp duty, which is calculated by applying the stamp duty rate to the reported transaction value or the fiscal cadastral value, whichever is larger ([Likumi.lv, 2009](#), Paragraph 8). The rate applied to this base is 1.5 % for natural persons since mid-2021 ([Likumi.lv, 2021](#), Paragraph 5), prior to this, the rate had been 2 % ([Likumi.lv, 2009](#), Paragraph 5)³. There are exemptions and reductions to this fee, most notably, since the end of 2015 residential real estate purchased with mortgage loans and subject to specific government guarantees have their stamp duty reduced to 0.5 % ([Likumi.lv, 2015](#), Paragraph 7)⁴.

Together, these two provisions of the tax code provide a variation that can be used to identify under-reported transaction values in the residential real estate market. First, sellers have an incentive to under-report the sale value of properties that do not qualify for the capital gains tax exemption because they have been owned for less than 60 months. Accordingly, the gap between the actual price and the reported transaction value should be larger for such properties than for otherwise comparable properties held by the seller for more than 60 months. Second, only mortgage-financed purchases are eligible for the state guarantee and the associated reduction in stamp duty. The incentive to under-report the transaction value should therefore be weaker for mortgage-financed purchases than for transactions conducted without bank intermediation. Moreover, banks issuing these mortgages have incentives to validate the transaction to ensure that the reported price is credible, since any gap between the reported and the actual price paid may be financed by undisclosed borrowing, which would raise the borrower's true leverage and the bank's default risk. This paper tests both of these hypotheses.

The existing literature provides some evidence on under-reporting transaction values in real estate markets and highlights the role of tax incentives in shaping such behavior. A study utilizing a dataset containing both the price reported to the housing authority, and the price denoted in

³There have been caps on stamp duty which changed over time; however, those played a role only for transactions valued in millions, which are rare in Latvia.

⁴Since mid-2017, the stamp duty reduction has applied only to the first €100,000 of the transaction value, with any amount above this threshold subject to the standard rate ([Likumi.lv, 2016](#), Paragraph 7). Initially, government support was available only to families with children ([Likumi.lv, 2017](#), Paragraph 4). Since 2023, soldiers of the National Armed Forces have also had the ability to receive it ([Altum 2023b](#)). Additionally, since 2018, this government support programme has also been available for individuals under the age of 36 who have acquired higher or vocational secondary education ([Altum 2018](#)). However, individuals entering the programme through this channel are not eligible for the stamp duty reduction ([Likumi.lv, 2022](#), Point 7.2).

brokerage company records in China, shows that stricter capital gains tax policy led to a 23 % increase in the difference between these values (Agarwal et al. 2020). A US study analyzed the effect of discontinuous taxes on the real estate market, finding significant tax-threshold distortions unrelated to tax evasion, which is proxied for by the difference between listed prices and reported transaction values (Kopczuk and Munroe 2015). A study from Israel finds that 8 % of transactions are under-reported, with an average under-report amounting to 30 % (Ben-Shahar et al. 2020). In a European context, Montalvo et al. (2020), using data on the value reported to the tax authorities and transaction value found in the records of the intermediary facilitating this transaction, showed that conditional on evading the average difference between reported and actual price amounted to 15 %⁵.

This study contributes to this literature by providing a novel method how to identify the under-reported transaction value using administrative datasets and finds that for non-mortgaged apartment transactions the difference between the last listed price and the reported transaction value is approximately 11 percentage points larger than for otherwise similar mortgaged apartment transactions, which have an additional party involved in the transaction and often qualify for a stamp duty reduction. This difference grows by an additional 4 percentage points in cases where the seller of the apartment has owned it for 5 years or less, and hence does not qualify for the 5-year capital gains tax exemption rule. These estimates vary by region.

The study is structured as follows. The next section describes the data sources used and how they were combined. Section 3 explains the methodology used to estimate the size of the under-reported real estate transaction value. This is followed by the results in section 4. Section 5 concludes.

2 Data and stylized facts

2.1 Real estate transaction data

Real estate transaction data is published monthly by the State Land Service of Latvia. The dataset covers sales of land, buildings, and apartments from 2012 onward. The majority of transactions within the residential sector are apartments (69 %), followed by houses (20 %), and finally land (11 %)⁶. On a regional basis, the transaction volume is dominated by the capital city Riga, and the

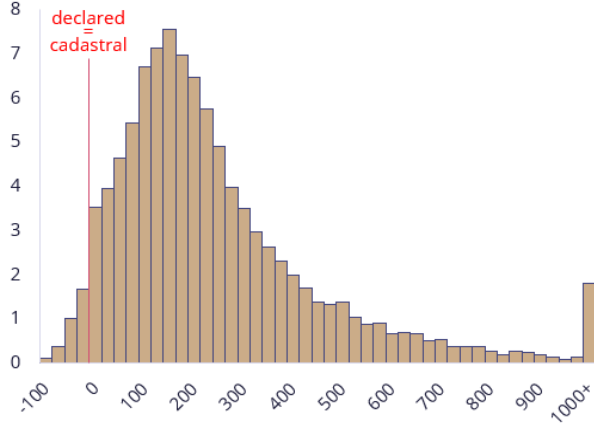
⁵The unconditional average difference between the reported and actual price amounted to 7.64 %.

⁶Shares are calculated using data from 2025. Residential land is defined by NĪLM codes '0601' and '0600', residential houses are defined as single and two-unit homes, apartments are defined as three or more unit homes.

surrounding region, which together represented more than half of total residential market activity in 2025.

Figure 1: Transaction behavior with respect to tax thresholds

(a) Difference between fiscal cadastral and reported apartment value (%)



(b) Number of days the seller has owned the apartment (%)



Source: [State Land Service \(2026b\)](#); [State Land Service \(2026a\)](#).

Notes: Approximately two thirds of transactions do not have a prior transaction date, so do not appear in the right-hand-side graph.

Reported transaction values show some clustering immediately around the thresholds relevant for real estate transaction taxes. For example, reported transaction values are rarely below the fiscal cadastral value (see Figure 1a), which acts as a floor for the base of stamp duty and hence is the lowest value for the purpose of reducing the stamp duty payment. Another interesting fact is the bunching in the number of transactions directly above the 5-year ownership mark (see Figure 1b), which is the threshold for one of the capital gains tax exemption requirements (see paragraph 4 and 5 of section 1 for more details on capital gains tax exemption and stamp duty reduction).

2.2 Real estate listings data

Real estate transaction data were merged with real estate listings data obtained from ss.lv. The online classified portal ss.lv is the largest such platform in the Latvian market. It holds more than 60 % market share, as established in a Competition Council decision concerning ss.lv's abuse of a dominant position in the online listings platform market ([Likumi.lv, 2026](#), Paragraph 61). Specific to real estate, a survey has found that 87 % of real estate listings users use ss.lv ([Competition Council 2022](#)).

Listings data were collected by web-scraping the real estate section of ss.lv daily, from the

beginning of 2021 through the end of 2025, using a Python script based on the `requests` package. Listings appeared on the scraped page at inception, whenever they were altered (for instance, through a change in price or description) and whenever their term was renewed. For each listing, the following attributes were recorded: asking price, date, address, floor area, number of rooms, property type, transaction type, and listing ID, the last of which enables listings to be linked across time when they reappeared on subsequent update pages. Because the scraper drew from a rolling window covering the preceding two to five days (a design intended to limit data loss from technical interruptions) it generated duplicate observations, which were removed during processing. In 2025, this procedure yielded approximately 17,000 raw apartment-sale observations per month on average, of which around 14,000 were duplicates consistent with the rolling-window design. Approximately five observations per month were excluded under a floor-area outlier criterion (below 10 square meters), and approximately 50 were excluded for listing properties located outside Latvia.

The scraper covered listings for apartments, houses, land plots, commercial properties, and agricultural real estate, spanning both sale and rental markets. Of the 102,000 listings scraped in 2025, 61 % were sale listings. Apartments accounted for the majority of the sale listings, at 55 %, followed by houses and land plots at 21 % each, with the remainder split between offices and agricultural real estate. Spatially, as with the transaction data, Riga and its surrounding region accounted for more than half of all sale listings in 2025. Two patterns in the listings data are worth noting. First, asking prices in new listings on *ss.lv* were, on aggregate, higher than the transaction values reported to the State Land Service for nearly all real estate categories (Figure 2a). Second, most apartment listings do not update their asking price over the course of the listing (Figure 2b), suggesting that most price adjustments resulting from price discovery or the bargaining process occurs off the platform rather than through visible listing revisions.

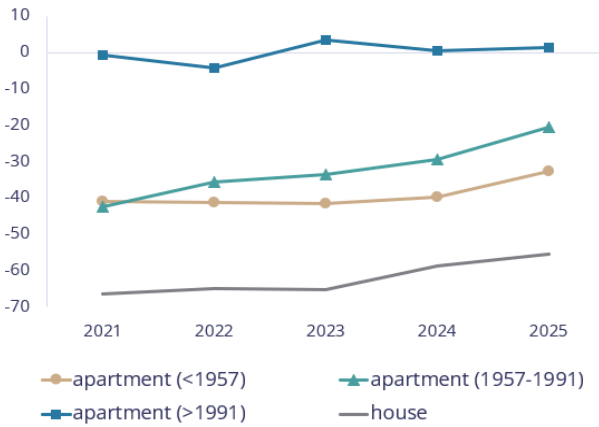
2.3 Credit registry data

Mortgage loan information was obtained from the Credit Registry of Latvia, which contains all loans issued by Latvia based credit institutions, commercial companies closely related to these credit institutions, credit unions, insurers, financial development institutions, and the treasury, totaling 73 institutions ([Latvijas Banka 2026](#)). During the period of interest for this study, 2021 to 2025, these institutions issued approximately 50,000 mortgage loans.

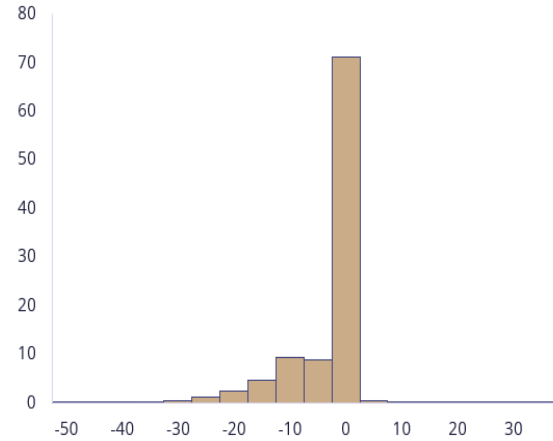
The prevalence of mortgage loans across Latvian regions exhibits significant variation. In 2025,

Figure 2: Stylized facts about real estate listings

(a) The difference between the median reported and listed price by the building construction period (%)



(b) Difference between the last and first listed apartment price (%)



Source: [State Land Service \(2026b\)](#); ss.lv.

Notes: Apartment groups are defined by construction years in the [State Land Service \(2026b\)](#), in ss.lv they are defined by apartments in the following building types: 'Čehu pr.', 'LT proj.', 'Hrušč.', '119.', '103.', 'M. ģim.', '602.', '104.', '467.', 'Specpr.' correspond to '1957-1991'; 'P. kara', 'Stalīna' correspond to '<1957'; 'Jaun.' correspond to '>1991'.

the Pierīga region recorded the highest share of transactions financed by a mortgage loan, at 54 %, followed closely by the capital, Riga, at 49 %. In contrast, the regions of Vidzeme, Kurzeme, and Zemgale displayed considerably lower rates. Latgale registered the lowest share of transactions financed by a mortgage loan in the country, at just 8 %⁷. Notably, this low rate coincided with Latgale leading Latvian regions in informal economic activity relative to GDP in 2025, as documented by [Sauka and Putniņš \(2026\)](#).

Altum, the Latvian development finance institution, has a guarantee programme for mortgage loans available to three groups of people. Individuals under 36 with higher or vocational secondary education, National Armed Forces soldiers, and families with children. The programme is widely used. Between 2021 and 2025, it covered 38 % of the total number of mortgage loans issued. This programme was designed to help with acquiring a mortgage loan by decreasing the down payment requirement from the standard 15 % to as little as 5 % in some cases. In addition, this programme reduces the stamp duty to 0.5 % for families with children and National Armed Forces soldiers. The reduction in stamp duty is applied only to the transactions that are financed via mortgage loans (see paragraph 5 of section 1 for more details)⁸.

⁷Share of transactions financed by a mortgage loan is calculated by aggregating, to the regional level, the total number of mortgage loans found in the Credit Registry of Latvia and dividing that by the total number of transactions with residential apartments, houses, and land within those regions found in the [State Land Service \(2026b\)](#).

⁸Individuals entering the programme through the Young Specialists category (individuals under 36 years of age with higher or vocational secondary education) are not eligible for the stamp duty reduction. However, until December

2.4 Mapping

Data from the three sources used in this study were mapped mainly by address information. State Land Service data were mapped to the Credit Registry of Latvia dataset by buildings' cadastral numbers, which are available in both sources. The listings website ss.lv does not require people post the cadastral numbers, so the mapping from this source was completed through address text, which was harmonized across sources using regular expressions (regex) and Google Gemini⁹.

The analysis was restricted to apartment transactions for two reasons. First, apartments are a comparatively standardized asset, making individual units more directly comparable once the construction period, floor, and renovation status are accounted for. Second, houses and land differ enough from apartments in their price-determining characteristics that pooling all three into a single regression risks conflating market segments, while the number of house and land transactions (20 % and 11 % of residential transactions in 2025, respectively) is too limited to support separate regressions for each.

Once the sources were linked, filters were applied to minimize the possibility of erroneous matches. The number of rooms in the transactions database and listings database must match exactly, and the maximum allowed mismatch in an apartment's area was set to 5 % of the listed area. The listing inception must take place before the transaction, and the maximum number of days between the last day in the web-scraped listings database and the transactions database was set to 90 days. The same threshold was set for the maximum difference between the transaction date and the loan inception date, in addition to which the maximum difference between the collateral and transaction value was set at 50 %. Lastly, the closest matches were chosen based on the difference between the last date in the web-scraped listings database and the transaction date in the State Land Service data and between the transaction date in the State Land Service data and the loan inception date in the Credit Registry of Latvia. Additionally, the reported transaction values were restricted to a range between 5,000 and 300,000 euros, to ensure that results are not driven by a few extreme observations.

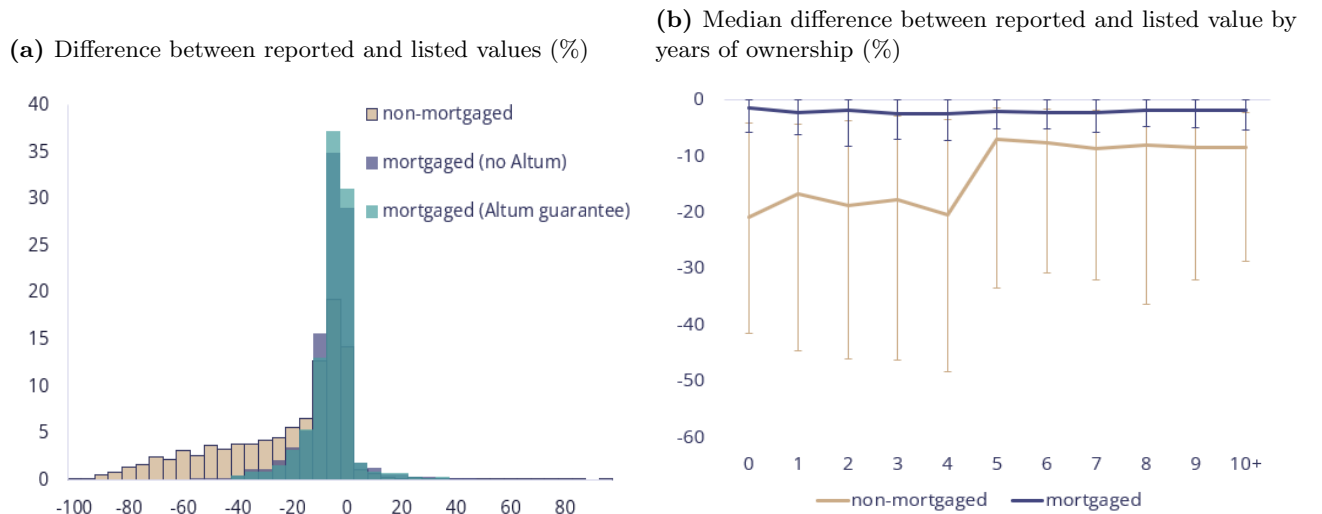
2023, this group had accounted for only 17 % of programme participants (Altum 2023a).

⁹Address harmonization within Riga was performed using regular expressions, as street names exhibited only a single systematic variation between the listings and transaction databases. Outside Riga, however, user-entered addresses often contained inconsistent spellings, abbreviations, and language variations, necessitating the use of Google Gemini to standardize address strings. The validity of the LLM-based harmonization was assessed by comparing its results with the regex-based mappings for Riga, where the latter can be considered a reliable benchmark.

2.5 Combined data

The mapped dataset shrank the number of observations from 168,000 listings in the web-scraped dataset and 91,000 transactions in the State Land Service dataset to 26,000 observations¹⁰, 9,000 of which have a mortgage loan, of which 4,000 have an Altum guarantee. In this combined dataset, the difference between the last listed price and the reported transaction value can be observed on a micro level. This difference may be driven by at least two factors: one is genuine repricing which happens during the bargaining process, the second is the under-reporting of the actual transaction value.

Figure 3: Listed to reported transaction value for mortgaged vs. non-mortgaged properties



Source: Credit Registry of Latvia; [State Land Service \(2026b\)](#); ss.lv.
Notes: Whiskers encapsulate 25th to 75th percentile.

Comparing the difference between listings and reported values for mortgaged transactions against non-mortgaged ones, it is clear that for mortgaged transactions large differences are much less common. In addition, mortgaged transactions with an Altum guarantee do not exhibit differing behavior to mortgaged transactions without the guarantee (see Figure 3a). The difference also sharply decreases right at the 5 year ownership mark for non-mortgaged transactions, while mortgaged transactions do not exhibit such a shift (see Figure 3b). This difference remains noticeable after controlling for a number of variables (see Figure A1). These three observations provide support for the argument stating that mortgage loans are a reasonable proxy for transactions without under-

¹⁰Half of the difference between the number of transactions and the number of mapped transactions exists due to the filters applied, the other half may be explained by faulty address information posted in the listing, or by transactions with apartments which were not listed on ss.lv.

reporting, as 1) they have much fewer observations with a suspiciously high difference between the listed and reported transaction value; 2) for mortgaged transactions the difference is unaffected by the decrease in the stamp duty; 3) for mortgaged transactions the difference is unaffected by the capital gains tax exemption.

3 Methodology

The methodology is based on the assumption that the existence of a mortgage loan substantially limits the ability of the buyer and seller to under-report the true transaction value to the authorities in an attempt to lower the tax burden. This is due to the presence of an additional party, the bank, which must evaluate the value of the collateral as well as investigate the individuals involved and the origin of their funds ([Financial Intelligence Unit of Latvia 2024](#)).

Operating under this assumption, we arrived at the under-reported portion of the transaction value by comparing the difference between the last listed and reported values for non-mortgaged transactions against mortgaged ones. Using this difference is useful as the last listed price provides a transaction-specific benchmark that partially captures apartment characteristics as assessed by the seller. Then, the difference may be explained by the under-reporting of the transaction value and genuine repricing, which happens during the bargaining process. This can be observed in both mortgaged and non-mortgaged transactions. To control for other possible differences across 2 types of transactions, we add 11 additional control variables (see Equation 1).

$$\frac{y_i^d - y_i^l}{y_i^l} = \beta_0 + \theta m_i + \sum_{j=1}^{11} \beta_j X_{j,i} + \epsilon_i \quad (1)$$

where y_d represents the reported transaction value *EUR*, and y_l represents the last listed price in *EUR*, making the left-hand side of the equation the relative change in price from the initial ask. The coefficient of interest is θ , which tells us how much larger the discount is for non-mortgaged transactions ($m = 1$) compared to mortgaged ones ($m = 0$), all else being equal. The model incorporates 11 control variables $X_{j,i}$ employed to reduce the possibility of a biased θ estimate. They are the natural logarithm of the number of days between the listing inception and the transaction which captures the liquidity of the asset; the neighborhood of the apartment controlled by the postal code dummy variables; transaction year and quarter as dummy variables; the natural logarithm of the listed price *EUR*/ m^2 and apartment size m^2 ; number of rooms in the apartment, floor on which

the apartment is located as dummy variables; number of floors in the apartment building, building construction period split into three groups < 1957 , $1957 - 1991$, > 1991 , and renovation status of the apartment building, all as dummy variables rather than continuous variables, as their effects can be non-linear. i indexes the transaction.

In addition to the general share of the transaction value which is under-reported, we estimate how this share differs depending on whether the reported transaction value is only subject to the stamp duty or if the capital gains tax potentially plays a role as well. This is done by introducing an interaction term between the non-mortgaged dummy, which proxies for the ability to under-report the transaction value more easily, and the ownership under 5 years dummy, which proxies for the additional motivation to under-report the transaction value in an attempt to decrease the capital gains tax payment. The regression of this specification can be seen in Equation 2.

$$\frac{y_i^d - y_i^l}{y_i^l} = \beta_0 + \theta_1 m_i + \theta_2 m_i \times o_i + \theta_3 o_i + \sum_{j=1}^{11} \beta_j X_{j,i} + \epsilon_i \quad (2)$$

where o is equal to 1 if the seller of the apartment has owned it for 5 years or less, and 0 otherwise.

Regional heterogeneity in relation to the prevalence of under-reporting is looked at to compare results against the size of the general informal economy in regions found in [Sauka and Putniņš \(2026\)](#). This is done by interacting the regional dummy variables with the treatment variables previously identified (see Equation 3).

$$\frac{y_i^d - y_i^l}{y_i^l} = \beta_0 + \sum_{z=1}^6 (\theta_{1,z} m_i \times region_{z,i} + \theta_{2,z} m_i \times o_i \times region_{z,i}) + \theta_3 o_i + \sum_{j=1}^{11} \beta_j X_{j,i} + \epsilon_i \quad (3)$$

where the region is a vector of 6 regional dummy variables: Riga, Riga region, Vidzeme, Kurzeme, Zemgale, and Latgale. Riga region excludes Riga itself, and Vidzeme also excludes Riga and Riga region. z indexes the respective region.

To ensure that the results are not driven by differences in control and treatment groups, we employ an additional specification utilizing propensity score matching to effectively filter out observations from the control group, mortgaged transactions, which do not have a similar observation in the treatment group, and vice versa, in terms of probability to be mortgaged. This is done using the nearest neighbor propensity score matching without replacement, discarding both treatment and control group observations which fell outside 0.02 caliper, estimated using logistic regression

(see Equation 4). After which the matched sample is fed into the same OLS specifications shown in Equations 1, 2 and 3, with heteroskedasticity-robust standard error adjustment.

$$P(Y_i = 1|X_i) = \frac{1}{1 + e^{-(\beta_0 + \sum_{j=1}^9 \beta_j X_{j,i})}} \quad (4)$$

where $P(Y_i = 1|X_i)$ represents the conditional probability that the transaction i is not financed with a mortgage loan, given the vector of 9 independent variables X_i . The 9 independent variables are: neighborhood of the apartment controlled by postal code dummy variables; transaction year, and quarter as dummy variables; number of rooms in the apartment, apartment floor as dummy variables; number of floors in the apartment building, building construction period split into three groups < 1957 , $1957 - 1991$, > 1991 , and renovation status of the apartment building, and natural logarithm of apartment size m^2 .

4 Results

The main regression results are summarized in Table 1. The difference between the listed price and the reported transaction value is 12 percentage points larger for non-mortgaged apartments than for mortgaged ones, all else being equal (column 1); the statistically significant negative coefficient indicates that the reported value relative to the listed price is lower for non-mortgaged transactions. Introducing an interaction between the non-mortgaged dummy and the 5-year-or-less ownership dummy increases this difference by a further 4 percentage points, while the effect of the non-mortgaged dummy itself remains unchanged. The 5-year-or-less ownership dummy is positive on its own, indicating that among mortgaged transactions, those with a shorter ownership duration exhibit a slightly smaller gap between the listed and reported value, rather than a larger one. This supports the assumption that the control group (mortgaged transactions) is not itself contaminated by capital-gains-related under-reporting (column 2). When both the non-mortgaged dummy and its interaction with the 5-year-or-less ownership dummy are further interacted with the regional dummy variables, the non-mortgaged effect varies substantially across regions, ranging from -10 percentage points in Riga to -25 percentage points in Latgale (column 3). The additional effect of the 5-year-or-less ownership interaction is far more stable across regions, ranging only from -4 to -7 percentage points.

Throughout all specifications, the non-mortgaged dummy effect, which is the proxy used for

the under-reporting of the transaction value to decrease the stamp duty payment, dominates. The interaction between the non-mortgaged dummy and the 5-year-or-less ownership dummy, which is the proxy used for the additional motivation to under-report the transaction value to decrease the capital gains tax payment, shows approximately one-third the effect. All coefficient signs are as expected. For the group which is able to under-report the true transaction value more easily to decrease the stamp duty payment, a steeper drop from the initial ask can be observed, this drop becomes even larger once additional motivation to avoid the capital gains tax comes into play.

Estimates of an under-reported transaction value in the residential apartment market with propensity score matching can be seen in Table 2. These results are very similar to the baseline results without propensity score matching found in Table 1. The most notable differences lie in the interactions between the non-mortgaged dummy, the 5-year-or-less ownership dummy, and the regional dummy variables, which are stronger for Riga region and Vidzeme, while for Latgale and Kurzeme they are rendered insignificant, most likely due to the limited sample size. The interactions between the non-mortgaged dummy and regional dummy variables alone show smaller differences: estimates obtained after propensity score matching are one percentage point smaller for Riga, Riga region, Vidzeme, and Zemgale, with Latgale an outlier, where the effect increases by 3 percentage points.

Using estimates from column 3 of Table 2, we can approximate the direct impact under-reporting the residential real estate transaction value has on the fiscal revenue. This can be done by scaling up the reported transaction values by the respective coefficients, which depend on the location and whether or not the property has been owned for more than 5 years, then applying the stamp duty rate and the capital gains tax rate in case ownership did not exceed 5 years to the difference between the reported and the scaled-up values. Using this methodology, in 2025, the estimated amount of the under-reported residential apartment transaction value not subject to the capital gains tax (apartment owned for more than 5 years) amounted to 65 million euros, while the amount subject to both the stamp duty and capital gains tax to 18 million euros. Applying the 25.5 % capital gains tax and the 1.5 % stamp duty rate on the respective estimated under-reported transaction values, the lost tax revenues in the residential apartment sector amount to 5.9 million euros (0.01 % of GDP).

Table 1: Estimates before propensity score matching

	(1)	(2)	(3)
Non-mortgaged	-0.12*** (0.003)	-0.12*** (0.003)	
Non-mortgaged $\times$ owned $\leq 5y$		-0.04*** (0.006)	
owned $\leq 5y$		0.01** (0.005)	0.01** (0.005)
Non-mortgaged $\times$ Riga			-0.10*** (0.003)
Non-mortgaged $\times$ owned $\leq 5y \times$ Riga			-0.04*** (0.007)
Non-mortgaged $\times$ Riga region			-0.11*** (0.012)
Non-mortgaged $\times$ owned $\leq 5y \times$ Riga region			-0.04** (0.017)
Non-mortgaged $\times$ Vidzeme			-0.13*** (0.013)
Non-mortgaged $\times$ owned $\leq 5y \times$ Vidzeme			-0.04** (0.017)
Non-mortgaged $\times$ Kurzeme			-0.17*** (0.009)
Non-mortgaged $\times$ owned $\leq 5y \times$ Kurzeme			-0.05*** (0.012)
Non-mortgaged $\times$ Zemgale			-0.17*** (0.010)
Non-mortgaged $\times$ owned $\leq 5y \times$ Zemgale			-0.07*** (0.013)
Non-mortgaged $\times$ Latgale			-0.25*** (0.012)
Non-mortgaged $\times$ owned $\leq 5y \times$ Latgale			-0.05*** (0.012)
Observations	26,295	26,295	26,295
R-squared	0.18	0.19	0.20

*** p<0.01, ** p<0.05, * p<0.1

Source: Credit Registry of Latvia; [State Land Service \(2026b\)](#); ss.lv.

Table 2: Estimates after propensity score matching

	(1)	(2)	(3)
Non-mortgaged	-0.12*** (0.003)	-0.11*** (0.003)	
Non-mortgaged $\times$ owned $\leq 5y$		-0.04*** (0.007)	
owned $\leq 5y$		0.01*** (0.004)	0.01*** (0.004)
Non-mortgaged $\times$ Riga			-0.09*** (0.003)
Non-mortgaged $\times$ owned $\leq 5y \times$ Riga			-0.03*** (0.008)
Non-mortgaged $\times$ Riga region			-0.10*** (0.012)
Non-mortgaged $\times$ owned $\leq 5y \times$ Riga region			-0.06* (0.034)
Non-mortgaged $\times$ Vidzeme			-0.12*** (0.014)
Non-mortgaged $\times$ owned $\leq 5y \times$ Vidzeme			-0.09*** (0.032)
Non-mortgaged $\times$ Kurzeme			-0.17*** (0.011)
Non-mortgaged $\times$ owned $\leq 5y \times$ Kurzeme			-0.03 (0.024)
Non-mortgaged $\times$ Zemgale			-0.16*** (0.012)
Non-mortgaged $\times$ owned $\leq 5y \times$ Zemgale			-0.07** (0.028)
Non-mortgaged $\times$ Latgale			-0.28*** (0.017)
Non-mortgaged $\times$ owned $\leq 5y \times$ Latgale			-0.06 (0.040)
Observations	15,592	15,592	15,592
R-squared	0.17	0.17	0.19

*** p<0.01, ** p<0.05, * p<0.1

Notes: Heteroskedasticity-robust errors are reported
Source: Credit Registry of Latvia; [State Land Service \(2026b\)](#); ss.lv.

5 Conclusion

The results of this analysis suggest that for non-mortgaged apartment transactions, the gap between the last listed price and the reported transaction value is approximately 11 percentage points larger than for otherwise comparable mortgaged transactions, which benefit from the oversight of an additional party and, frequently, a stamp duty reduction. This finding implies that those who have the ability to under-report apartment value more easily to decrease the stamp duty payment do so at 11 % on average. Furthermore, this discrepancy expands by an additional 4 percentage points when the seller has owned the property for 60 months or less, a threshold below which transactions fail to qualify for the 5-year ownership capital gains tax exemption rule. This implies that those who have the ability to under-report the apartment value more easily and may have stronger incentives to do so due to capital gains tax under-report transaction values at a rate of 15 % on average. These estimates exhibit regional variation: Riga displaying the lowest estimated under-reporting of transaction value overall Latgale the highest, reinforcing the link between weaker economic conditions and the size of the informal economy. Beyond these findings, this study offers a replicable approach for the estimation of the under-reported portion of the real estate value, which can be translated into approximate fiscal revenue loss by combining transactions, listings, and credit registry data.

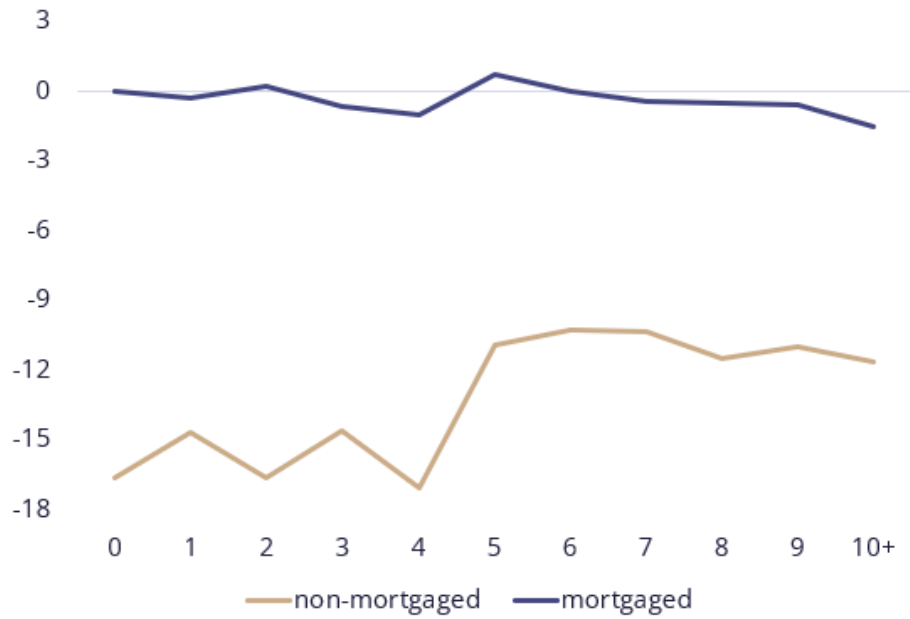
References

- Agarwal, S., K. Li, Y. Qin, J. Wu, and J. Yan (2020). Tax evasion, capital gains taxes, and the housing market. *Journal of Public Economics*.
- Altum (2018). State guarantees for the purchase of housing will now also be available to young specialists. Accessed: 2026-07-01.
- Altum (2023a). Increased support for purchasing housing for young professionals and families with a child with a disability. Accessed: 2026-04-01.
- Altum (2023b). Naf soldiers will be able to receive support from altum for purchasing housing. Accessed: 2026-07-01.
- Bank of Latvia (2024). Financing of the economy. Accessed: 2026-07-01.
- Ben-Shahar, D., R. Golan, and E. Sulganik (2020). Tax evasion in the housing market: Identification and exploration. *Journal of Real Estate Research*.
- Competition Council (2022). The public market monitoring report on online platforms. Paragraph 98.
- EY (2025). Shadow economy exposed. Accessed: 2026-07-01.
- FICIL (2025). Position paper on economic development of latvia for all. Accessed: 2026-07-01.
- Financial Intelligence Unit of Latvia (2024). Money laundering risk assessment in real estate and construction sectors. Accessed: 2026-04-01.
- Kopczuk, W. and D. Munroe (2015). Mansion tax: The effect of transfer taxes on the residential real estate market. *American Economic Journal: Economic Policy*.
- Latvijas Banka (2026). Credit register participant. Accessed: 2026-08-06.
- Likumi.lv (2009). Regulations Regarding the State Fee for the Strengthening of Property Rights and Pledge Rights in the Land Register.
- Likumi.lv (2010). On personal income tax.
- Likumi.lv (2015). Regulations Regarding the State Fee for the Strengthening of Property Rights and Pledge Rights in the Land Register.
- Likumi.lv (2016). Regulations Regarding the State Fee for the Strengthening of Property Rights and Pledge Rights in the Land Register.
- Likumi.lv (2017). Regulations on State aid for the purchase or construction of residential premises.
- Likumi.lv (2018). On personal income tax.
- Likumi.lv (2021). Regulations Regarding the State Fee for the Strengthening of Property Rights and Pledge Rights in the Land Register.
- Likumi.lv (2022). Regulations Regarding the State Fee for the Strengthening of Property Rights and Pledge Rights in the Land Register.
- Likumi.lv (2023). On personal income tax.
- Likumi.lv (2024). On personal income tax.

- Likumi.lv (2026). About the dominant abuse of the position of online advertisements in the platform market.
- Montalvo, J. G., A. Piolatto, and J. Raya (2020). Transaction-tax evasion in the housing market. *Regional Science and Urban Economics*.
- Sauka, A. and T. Putniņš (2026). Shadow economy index for the baltic countries 2009–2025. Accessed: 2026-07-01.
- Schneider, F. and A. Asllani (2022). Taxation of the informal economy in the eu. Accessed: 2026-07-01.
- State Land Service (2026a). Fiscal and universal cadastral values. Accessed: 2026-04-01.
- State Land Service (2026b). Open data of the real estate market database. Accessed: 2026-04-01.
- The Ministry of Finance of Latvia (2020). Shadow economy. Accessed: 2026-07-01.

A Appendix

Figure A1: Conditional average difference between reported and listed value by years of ownership (%)



Source: Credit Registry of Latvia; [State Land Service \(2026b\)](#); ss.lv.

Notes: Conditional values are obtained using specification shown in equation 2, with the exception of 5 year ownership dummy, which is replaced by a vector of 10 dummies ranging from 1 to 10+ years of ownership. Values shown are with reference to mortgaged transactions with 0 years of ownership.