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# House Price Drivers in Selected OECD Countries; The Role of Macroeconomic, Demographic and Institutional Factors in a Demand – Supply Model

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ABSTRACT

**Purpose**:
This paper aims to investigate the drivers of real house prices in an extended set of selected OECD countries.

**Design/methodology/approach:**
The paper uses a data set over the period 2000-2020, employing a panel data analysis based on key macroeconomic, demographic, and institutional factors. The analysis, based on the way demand and supply factors interact in the housing market, sheds light on these factors' simultaneous but opposing effects.

**Findings:**
The analysis confirms that high unemployment rates affect house prices adversely, while population growth and raising construction costs push equilibrium prices up. Based on a demand - supply theoretical model, the existence of mortgage interest tax relief regulation is found to be positively associated with equilibrium house prices.

**Research limitations/implications:**
While the aim of the paper is to capture as many house price drivers as possible, the list of explanatory variables is not an exhaustive one. Moreover, special conditions in specific countries, such as tax-benefit programs, may need to be examined at an individual country level. Monitoring the trend of the macroeconomic, demographic, and institutional factors, which have been found to affect house prices, could provide an insight for future shifts in house prices. Understanding the way these specific factors affect housing supply and demand could improve government reactions in house price fluctuations.

**Originality/value:**
The study enriches the empirical literature on the role of urbanization and deposit rates on house prices, offering, for the first time, alternative explanations of their contribution by analyzing their potentially opposing effects on housing demand and/or supply.



## 1. Introduction

Housing market is widely regarded as being very important for the economy. It is indicative that countries with sharp declines in residential investment, in the aftermath of the global financial crisis, generally needed more time to recover from the crisis and regain the pre-crisis level of real gross domestic product (GDP) (Cournède et al., 2019). Activity in the housing market might be regarded as a potential indicator of economic performance, given that the behavior of house prices influences business cycle dynamics and the performance of the financial system (Tripathi, 2020).

Much economic research and economic policy have evolved around the role of housing prices on economic growth, through different channels. Rising housing prices encourage consumer spending and lead to higher economic growth (Tripathi, 2020). Also, housing market is highly related to the loan portfolios of banks which finance the construction, development, and sale of houses (ESRB, 2015). On the other hand, housing market might be regarded as a source of financial crises and vulnerabilities in the banking sector, given that a large fraction of the global growth in bank balance sheets over the past decades has been attributed to increased mortgage lending (Dell'Ariccia, 2008).

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In recent decades, there has been an uptrend regarding house prices in most advanced OECD economies. Several countries (e.g., Austria, Luxemburg, Norway, and Germany) have experienced uninterrupted house price booms despite the global financial crisis (GFC). On the other hand, house prices in countries such as Denmark, Netherlands and the United Kingdom have been affected by the GFC but managed to recover to some extent, following an uptrend since 2012-2013. Lastly, there are countries, e.g., Greece, Italy, Spain, and Ireland, which experienced a dramatic fall and a very slow recovery in house prices from the very beginning of the GFC up to recent years. Figures 1-3 illustrate the variations in prices in 18 OECD countries selected in this study, over the period 2000-2020. Since the end of 2020, real estate markets, among other markets, globally experienced unique conditions due to the Covid-19 pandemic.

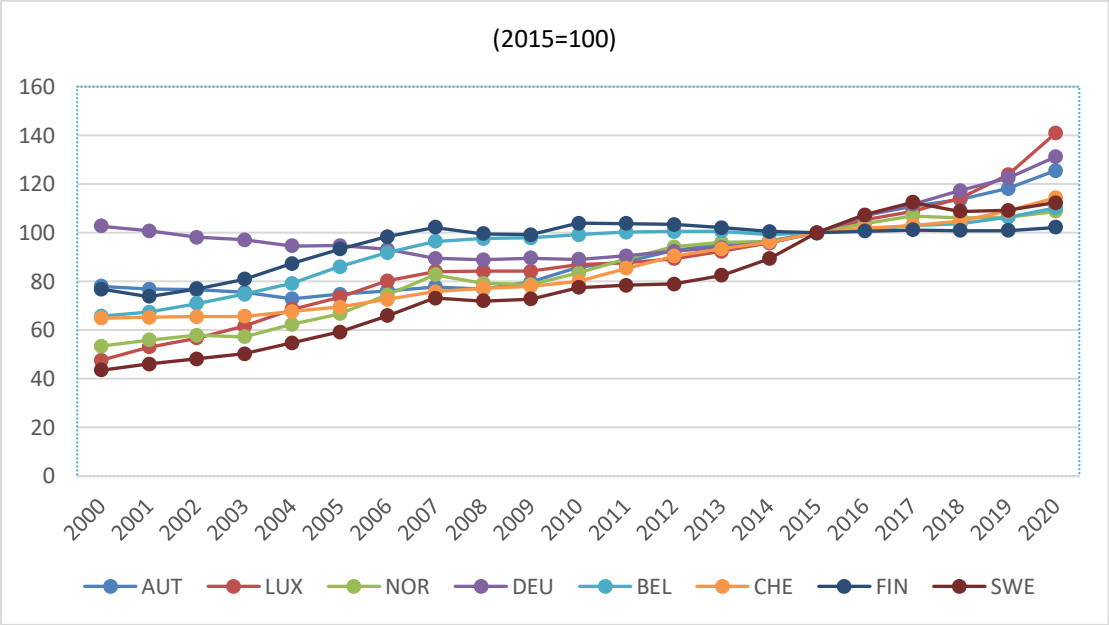


**Figure 1 Real house prices, 2000-2020. Group I: Countries having experienced uninterrupted house price booms despite the GFC**
Source: OECD data, authors' compilation

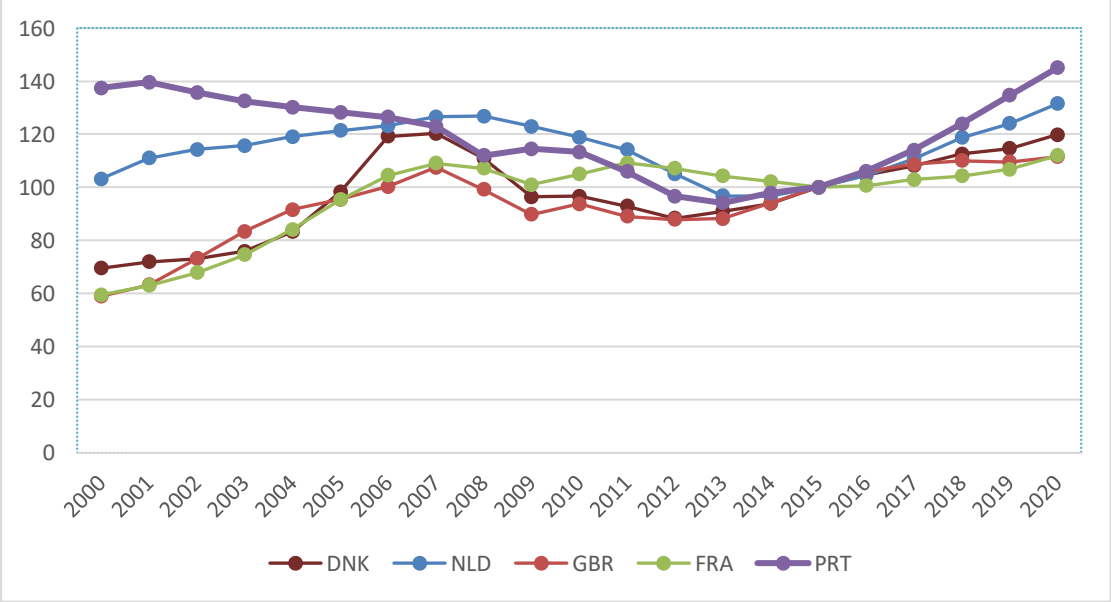


**Figure 2 Real house prices, 2000-2020. Group II: Countries having experienced recovery of house prices after the GFC**
Source: OECD data, authors' compilation


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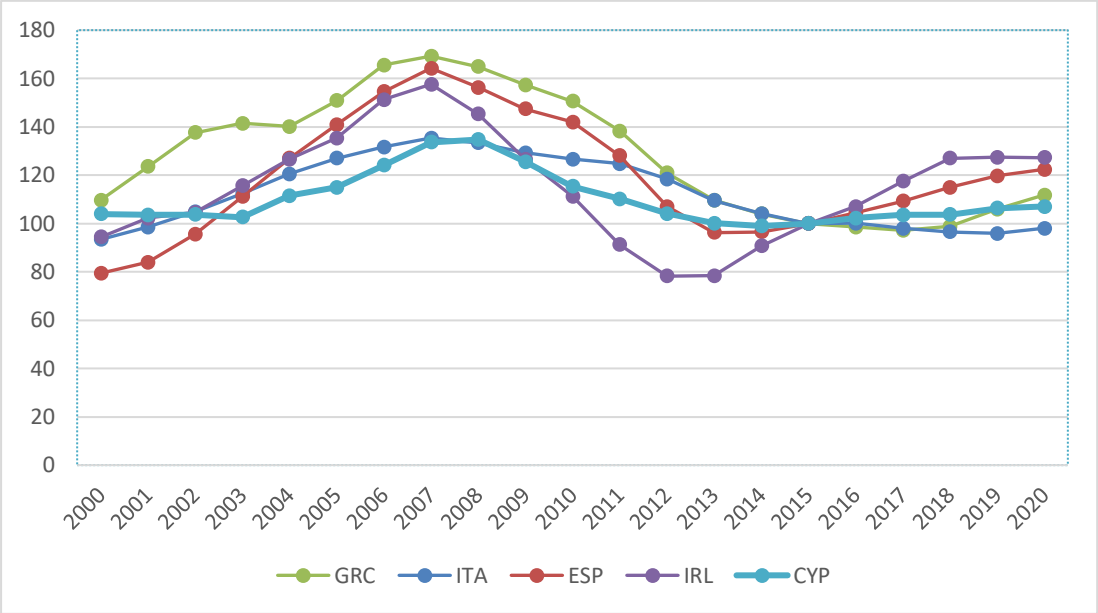


**Figure 3 Real house prices, 2000-2020. Group III: Countries having experienced very slow recovery of house prices after the GFC**
Source: OECD data, authors' compilation

Given the importance of housing markets described above and the cyclical variations in prices that many countries have experienced, the drivers of house prices have been a topic of research of great interest. There are several factors affecting house prices, though this study focuses on the role of specific demographic and institutional factors on real house prices, along with standard macroeconomic factors. In the above context, the main contribution of the study is the employment of two specific variables, capturing institutional and demographic conditions, respectively. First, the study utilizes data on mortgage interest tax relief (MITR), as a potential determinant of housing demand and therefore of house prices. To the best of our knowledge, this is the first time the role of the MITR on house prices is examined. Second, the urbanization rate is used to explain shifts in demand and supply of housing. Limited studies dealing with the role of urbanization on house prices have focused mainly on China, whereas respective studies on OECD countries do not cover developments of the last decade. The present study examines a sample of 18 OECD countries (OECD countries without available data on the variables regarding specialized institutional factors related to the housing market were excluded), covering a wide time span of 21 years (2000 – 2020). The starting point was set based on the availability of the data. The ending date reflects the unprecedented conditions that the economies under examination experienced because of the covid-19 pandemic. Housing demand and supply were affected, changing dramatically the dynamics of the housing market (pause of construction activity, need for work from home etc.). Furthermore, the study enriches the existing literature on housing supply providing alternative explanations over the findings regarding urbanization and deposit rates in the countries under examination, as well as over the findings regarding construction cost effects.

Our panel data analysis confirms the already known finding that unemployment affects real house prices adversely. For example, Andrews (2010) finds that declines in unemployment rates are strongly related to declines in house prices in OECD countries, for the period from 1980 to 2005. As far as the demand channel is concerned, our findings suggest that population growth and institutional regulations favoring borrowers, such as the existence of MITR, tend to put an upward pressure on equilibrium real house prices. Regarding the supply channel, we consider construction cost to be the main factor affecting house prices adversely, examining at the same time its potential impact on housing demand as well. Based on the results regarding the deposit interest rate's shifts and the urbanization growth, the study offers a comprehensive analysis over the potentially opposing effects that each one of the two above factors might have on real house prices (through the demand and/or the supply channel), leading to the elimination of its significance level.

The rest of the paper is organized as follows: Section 2 provides an overview of the relevant empirical literature, while section 3 presents the theoretical model. Data utilized along with key descriptive statistics and methodological notes are presented in section 4. Econometric analysis and the empirical findings of the study are discussed in section 5. Section 6 concludes.

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## 2. Review of Literature

Empirical literature on housing market suggests that improvements on macroeconomic conditions, such as increases in growth rates and disposable income (Andrews, 2010; Turk, 2015; Geng, 2018; Lourenço and Rodrigues, 2014; Nobili and Zollino, 2012; White and Papastamos, 2018; Michail and Thucydides, 2019) or declines in unemployment rates (Andrews, 2010; Panagiotis and Printzis, 2016), can affect house prices positively through their influence on housing demand. All variables mentioned above capture, to an extent, the prosperity of households. Given that prosperity increases households' capability to consume more, including affording a house or even servicing a mortgage, improved macroeconomic conditions are responsible for augmented housing demand and consequently for house price rises. Alternatively, high unemployment rates affect house prices adversely by curbing housing demand, because the loss of employment causes a reduction in income.

Inflation seems to have a negative impact on house prices (Apergis and Rezitis, 2003; Turk, 2015; Panagiotidis and Printzis, 2016). Inflationary pressures tend to decrease the purchasing power of potential house buyers, leading to lower demand for houses, which in turn leads to lower equilibrium house prices.

Due to the tight relationship between house and mortgage markets (given that a substantial part of house purchases is financed through mortgage loans), interest rates could not be excluded from the list of explanatory variables in the literature on house prices. More specifically, long term interest rates (Andrews, 2010; Turk, 2015; Geng, 2018), mortgages' growth rate (Panagiotidis and Printzis, 2015), money supply growth rate (Baffoe-Bonnie,1998; Apergis and Rezitis, 2003; Panagiotidis and Printzis, 2015) or, alternatively, bank credit (Tsatsaronis and Zhu, 2004), have been found to affect house prices significantly. Declining interest rates, for example, deescalate the cost of borrowing, encouraging potential home buyers and causing, consequently, a rise in housing demand. Kapopoulos et al. (2020) confirmed the leading role of mortgage financing for the Greek residential property market. Their findings revealed an one-way casual relationship, with mortgage lending driving residential real estate prices. Note, however, that when dealing with interest rates, most studies examine the lending rates, while little attention has been paid to the role of deposit rates.

Certain demographic characteristics can influence house prices, by boosting demand for houses. Studies have shown that the growth of population and migration inflows have a strong positive impact on house prices (Baffoe-Bonnie, 1998; Turk, 2015; Geng, 2018). In a recent study, Luo et al. (2020) underlined the role of immigrant flows on the augmented demand for houses, and suggested that the Golden Visa - tax benefits program may enhance demand in the housing market[1].

In the same context, the rate of urbanization has also been found to affect real house prices positively (Wang et al., 2017; Yingchao et al., 2018; Churchill et al., 2020). An increase in urbanization levels has a long-term positive effect on the price of houses, while the rise in house prices may slow down urbanization growth (Nassereddine et al., 2020). The relevant empirical literature demonstrates that urbanization influences housing demand positively, leading to rising house prices. Urbanization may offset to some extend the negative effects of population ageing (Wang et al., 2015) as the proportional rise of elderly people is supposed to decrease housing demand. On the other hand, urbanization might be responsible for undesirable neighborhood characteristics such as crime, which could put a downward pressure on real house prices (Tita et al., 2006; Lynch and Rasmussen, 2001; Cao and Maume, 1993). Churchill et al. (2020) and Glaeser and Gyourko (2005) find that decline in rural house prices may offset the increase in urban house rises following urbanization.

In Eurozone, most governments used to encourage housing investments mainly through tax deductions (ECB, 2009; Andrews, 2010). Favorable taxation policy for homeowners is considered to influence housing demand. Taxation incentives, e.g., tax relief through mortgage interest deductibility, may encourage house purchases and contribute to high and rising house prices (Geng, 2018).

Lastly, regarding housing supply, empirical literature indicates construction cost (labor and material costs) as the main driver of prices (Gounopoulos et al., 2010; Turk, 2015; Geng, 2018). Such higher costs discourage construction of new houses leading to a decrease of the housing supply and hence increasing house prices. Alternatively, from the byers' aspect, high construction costs make houses more expensive and thus less affordable.

## 3. Theoretical Framework

Regarding the models employed to study house price dynamics, a common practice is to capture shifts in the demand and supply of housing (Egert and Dubravko, 2007). On this basis, we employ variables that are expected to influence housing demand and supply and examine the responsiveness of the House Price Index (HPI) of our sample countries to the shifts of these variables, over the period 2000-2020.

Housing demand is captured by a) macroeconomic conditions (M), proxied by the unemployment rate and the disposable income[2], b) demographic factors (D), such as population and urbanization rate, and c) institutional factors (I), such as the existence of MITR. Improved macroeconomic conditions are considered to stimulate housing demand.

[1] The golden Visa system enables individuals to obtain residency for 10 years to increase competitiveness and create an attractive environment for business and growth. The main precondition is an investment in the real estate market of the recipient country, with the minimum value varying from €200,000 to €500,000, depending on each country's policy.

[2] Alternatively, income was proxied by the level of education in the countries under examination (as captured by the Index offered by the Education Statistics of the World Bank).



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Also, population and urbanization growth are expected to stimulate housing demand, whereas the institutional factor considered is also expected to be positively related to housing demand.

Given the above, housing demand is given by the following equation:

$$D^H = f(M, D, I) \quad (1)$$

Respectively, supply of houses is mainly taken to depend negatively on real costs of construction (C). We also examine the role of a demographic factor (D), namely urbanization, and of a financial one, namely the deposit interest rate (F) on housing supply, with an expected positive relationship.

$$S^H = f(C, D, F) \quad (2)$$

Assuming demand for houses meets respective supply at all times (house market is in equilibrium), the following reduced-form equation captures house prices:

$$P^H = f(M, D, I, C, F) \quad (3)$$

In the above framework, demand and supply factors interact to determine an equilibrium level for real house prices. Nevertheless, house prices are not necessarily stable. On the contrary, it has been observed that house prices are more volatile than the main determinants of demand and supply alone (Egert and Dubravko, 2007).

## 4. Data and methodology

### 4.1 Data

The empirical analysis is based on a panel dataset of annual observations of selected variables in 18 OECD countries for the period from 2000 to 2020. Data are compiled from various sources, depending on the availability for each variable for the whole sample period. Data on House Price Index (HPI) are given by the ratio of nominal house price index to the consumers' expenditure deflator in each country, from the OECD national accounts, while data on unemployment rates (UNEMPL) and disposable income (DISP_INC) are taken from the World Bank. Data on demographics are taken from the World Bank; population (POP) refers to midyear estimates of the de facto definition of population, while urbanization measures the percentage of urban population, as defined by national statistical offices, out of total population. MITR is a dummy capturing the existence ("Y") or not ("N") of a regulation permitting landlords to deduct their mortgage interest costs from their taxable profits; these data are taken from the European Commission database. Cost (COST) refers to the total construction cost, including both material and labor cost for residential buildings, and data are taken from Eurostat. Deposit interest rates (DEP_RATE) are taken from the European Central Bank and refer to annualized agreed rate for deposits for over 2 years original maturity, denominated in euro. Table 1 presents the summary statistics of the variables employed.

**Table 1: Summary Statistics**

| Variable | Obs. | Mean | Std. Dev. | Skewness | Kurtosis | Min | Max |
|---|---|---|---|---|---|---|---|
| Lhpi | 378 | 1.523 | .052 | -0.838 | 4.254 | 1.328 | 1.635 |
| lDISP_INC | 378 | 2.299 | .021 | -0.102 | 2.567 | 2.247 | 2.348 |
| MITR | 378 | .537 | .499 | -0.149 | 1.022 | 0 | 1 |
| lPOP | 378 | 2.781 | .085 | -0.568 | 3.142 | 2.564 | 2.903 |
| URBAN | 378 | .772 | .105 | -0.195 | 2.459 | .544 | .981 |
| lCOST | 378 | 1.502 | .032 | -0.827 | 3.013 | 1.395 | 1.556 |
| lUNEMPL | 378 | 1.907 | .487 | 0.431 | 3.197 | .593 | 3.313 |
| DEP_RATE | 377 | 2.27 | 1.184 | -0.104 | 2.528 | -.38 | 5.98 |
| lEDU | 378 | 3.227 | .347 | -1.215 | 4.157 | 1.982 | 3.786 |

### 4.2 Methodology

To investigate the drivers of real house prices in OECD countries, we implement a panel data regression approach. We consider several macroeconomic, demographic, and institutional factors as potential determinants of house prices. We estimate a series of panel regression models, utilizing HPI as dependent variable. More specifically, we estimate the following baseline specification:

$$HPI_{i,t} = \alpha + \beta X_{i,t} + \gamma Y_{i,t} + \delta Z_{i,t} + \eta_i + \mu_t + \varepsilon_{i,t} \quad (4)$$

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where HPI_(i,t) is the House Price Index of country i at year t,and X_(i,t), Y_(i,t), Z_(i,t) are the vectors of macroeconomic, demographic, and institutional explanatory variables, respectively. The intercept coefficient is a, while $\beta$, $\gamma$, and $\delta$ are the coefficients of the explanatory variables. The $\eta$_( i) and $\mu$_t coefficients denote the country-specific effects and the time effects, respectively, while $\varepsilon$_(i,t) is the error term.

We employ panel data estimations using both fixed and random individual country effects. To determine the proper estimation method between fixed-effects (FE) and random effects (RE), we perform the Hausman test (Hausman, 1978). To increase the robustness of our results we: (a) measure the severity of multicollinearity using the correlation matrix of all the explanatory variables (Table 2); (b) use heteroskedasticity robust standard errors.

## 5. Empirical Analysis

In this section, we present the results of our empirical analysis. Table 2 reports the correlation matrix of all the independent variables. The pairwise correlation coefficients are generally low, implying that explanatory variables are not strongly correlated with each other.

Table 3 presents the estimates of several model specifications that account for the effect of supply and demand side factors on house price index of OECD countries. Model 2 represents our baseline panel regression model using individual country fixed effects, as indicated by the Hausman test[3]. We use heteroskedasticity robust standard errors, as the modified Wald test indicates the presence of heteroskedasticity. In Model 4, we control for both individual country and time fixed effects. An F-test, employed to test the joint significance of time effects, confirms the usefulness of including them in panel estimation.

Regarding the demand side factors described in the theoretical model in section 3, and in line with Andrews (2010) and Panagiotis and Printzis (2016), we find that UNEMPL exhibits a negative relationship with house prices. Given that unemployment causes either lower wealth or income loss, an increase in unemployment rates leads to a decrease in the housing demand; less people can afford a house and even those, who were able to afford one before, might be discouraged now by the growing unemployment rates, due to uncertainty for the future of the economy. The positive sign of the variable DISP_INC indicates that higher levels of disposable income are positively related to house prices, due to the rise in housing demand. This finding is in line with previous empirical evidence (Andrews, 2010; Turk, 2015; Geng, 2018; Lourenço and Rodrigues, 2014; Nobili and Zollino, 2012; White and Papastamos, 2018; Michail and Thucydides, 2019z). Nevertheless, the effect of DISP_INC on house prices is statistically significant only in specification 1.

**Table 2: Pairwise Correlations**

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| (1) lDISP_INC | 1.000 | | | | | | | |
| (2) MITR | -0.140* | 1.000 | | | | | | |
| | (0.006) | | | | | | | |
| (3) lPOP | -0.105* | -0.175* | 1.000 | | | | | |
| | (0.042) | (0.001) | | | | | | |
| (4) URBAN | 0.340* | 0.352* | -0.026 | 1.000 | | | | |
| | (0.000) | (0.000) | (0.614) | | | | | |
| (5) lCOST | 0.387* | -0.004 | 0.042 | 0.113* | 1.000 | | | |
| | (0.000) | (0.936) | (0.420) | (0.028) | | | | |
| (6) lUNEMPL | -0.416* | 0.077 | 0.285* | -0.047 | 0.309* | 1.000 | | |
| | (0.000) | (0.133) | (0.000) | (0.358) | (0.000) | | | |
| (7) DEP_RATE | -0.220* | 0.098 | 0.175* | 0.047 | -0.439* | -0.049 | 1.000 | |
| | (0.000) | (0.058) | (0.001) | (0.361) | (0.000) | (0.346) | | |
| (8) lEDU | 0.379* | -0.201* | -0.258* | 0.371* | 0.276* | -0.197* | -0.352* | 1.000 |

[3] The results of Hausman and modified Wald tests are available by the authors upon request.



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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |

The figures in parentheses represent the *p*-values.

**Table 3: Determinants of Real House Prices – Panel Date Regression Results**

| | *(1)* | *(2) (i, Year)* | *(3) (robust)* | *(4) (cluster country, i, Year)* |
|---|---|---|---|---|
| **Dependent variable: lHPI** | | | | |
| lDISP_INC | 0.396* (0.068) | 0.132 (0.571) | 0.396 (0.398) | 0.132 (0.809) |
| lPOP | 6.171*** (0.000) | 6.715*** (0.000) | 6.171*** (0.000) | 6.715*** (0.000) |
| URBAN | -0.129 (0.139) | -0.030 (0.731) | -0.129 (0.607) | -0.030 (0.912) |
| lUNEMPL | -0.053*** (0.000) | -0.056*** (0.000) | -0.053*** (0.000) | -0.056*** (0.000) |
| MITR | 0.032*** (0.000) | 0.027*** (0.000) | 0.032*** (0.002) | 0.027** (0.043) |
| DEP_RATE | 0.005** (0.031) | 0.002 (0.402) | 0.005 (0.204) | 0.002 (0.541) |
| lEDU | -0.017 (0.201) | 0.002 (0.871) | -0.017 (0.465) | 0.002 (0.931) |
| lCOST | 0.604*** (0.000) | 0.833*** (0.000) | 0.604** (0.034) | 0.833* (0.057) |
| Constant | -17.232*** (0.000) | -18.595*** (0.000) | -17.232*** (0.000) | -18.595*** (0.000) |
| Number of Obs. | 377 | 377 | 377 | 377 |
| R-squared | 0.701 | 0.760 | 0,7012 | 0.760 |
| FE country | Yes | Yes | Yes | Yes |
| FE time | No | Yes | No | Yes |

*, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. The figures in parentheses represent the *p*-values.

POP and MITR have a positive sign, indicating the significant role of demographic and institutional factors on house price formation. Considering the supply side, the variable COST has been found to be positively related to house

prices. An economic interpretation of the results regarding the variables mentioned above is given below whereas the role of the variables URBAN and DEP_RATE is also discussed on an attempt to explain their statistical insignificance.

Specifically, the more the population grows, the more the potential buyers, leading to augmented housing demand, pushing therefore house prices up. This finding is consistent with previous studies showing that population growth positively affects house prices (Baffoe-Bonnie, 1998; Turk, 2015; Geng, 2018). Regarding the alternative demographic factor employed, namely urbanization, the negative sign of the variable URBAN indicates that the growth of urban centers, in the countries under examination, affects house prices adversely. The negative relationship found could be explained through both demand and supply channels. Urbanization growth could lead to an increase in housing supply, given that the population moving to urban centers needs to be accommodated and provides an incentive for new constructions. The increased housing supply could lead to a decrease in house prices. On the other hand, the negative relationship between urbanization and house prices might be driven by the way urbanization influences housing demand. The relevant literature (Tita et al., 2006; Lynch and Rasmussen, 2001; Cao and Maume, 1993) offers potential explanation that may apply in the case of the countries under examination, related to undesirable neighborhood characteristics, caused by urbanization that could lead to a decrease in housing demand. Further, the negative sign might imply that the decline in rural house prices in the OECD countries under examination, may more than offset the respective increase in urban house prices following urbanization[4]. The above implications are probably against common sense, which suggests a positive relation between urbanization and house prices through the increase on housing demand in urban areas. One could claim that there exist two opposing effects on house prices, probably offsetting each other. That offsetting effect might explain the statistical insignificance of the variable URBAN[5].

Regarding institutional factors, the positive sign of the variable MITR indicates that favorable regulatory conditions related to mortgages, and more specifically the deduction of mortgage interest costs, reinforce housing demand by encouraging potential house buyers to get mortgage loans. Taxation incentives—such as mortgage

[4] Among the OECD countries under examination, Belgium is the country with the highest urbanization rate (around 98%), while the lowest rates are observed in Austria (around 59%).

[5] The use of population density as an alternative demographic variable appeared also insignificant, deteriorating the overall econometric consistency of the model.

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interest deductibility—may encourage house purchases and contribute to high and rising house prices (Geng, 2018). Such incentives have been adopted by most of the countries under examination, while the specific tax relief measure examined in this study (MITR) has been adopted by and is still in force in many countries (among others, Belgium, Denmark, Finland, Sweden, and Netherlands). On the other hand, countries such as Greece, Portugal, Spain, and Ireland have phased out the measurement of MITR since 2013.

Apart from the tax relief programs, many countries have adopted, during the last decade, tax-benefit programs as well, such as the Golden Visa program. Given that buying a house in the country of interest is a precondition for the above program, we considered Golden Visa as a potential driver of house prices[6]. This, however, was not supported by the econometric analysis, probably due to data limitations relevant to the small number of countries in the sample having adopted the specific program.

We also consider whether deposit rates have an impact on housing supply. High deposit rates might be regarded as an attractive investment, crowding out alternative investments including construction of new houses. Further, increasing deposit rates imply, to an extent, increasing loan rates, making the financing of construction more expensive. In both cases, increasing deposit rates seem to discourage construction activity, leading to decreased house supply which, in turn, leads to an increase in real house prices. On the other hand, high deposit rates imply high mortgage rates which could discourage potential house buyers. In that case, the subsequent decrease in the demand for housing could lead to a drop in house prices. That negative effect of the deposit rates on house prices may offset the respective positive effects on house prices discussed above, giving a potential explanation for the insignificance of the variable DEP_RATE.

Lastly, construction cost has been found to be positively associated with house prices. An increase in labor and material costs, embodied in the final construction cost, seems to be capitalized into real house prices. Such increased costs tend to discourage housing construction activity, putting an upward pressure on the housing supply. Construction cost appears in most of the literature to be the main driver of housing supply. However, increasing construction costs could affect housing demand as well, given that houses offered for sale (by not discouraged constructors) become even more expensive. In that case, the decrease in housing demand would lead to lower house prices. Therefore, the finding that higher construction costs have a positive impact on real house prices may be attributed to the opposite pressures of demand and supply effects, with the demand side effects prevailing over the supply side effects, leading to increased house prices.

**6. Conclusions**

Developments in house markets are of great importance, being related to economic resilience; housing-related shocks, such as shifts in real house prices, might be transmitted to the real economy, while house prices-related macroprudential policies might mitigate or amplify such shocks.

Given that, theoretically, real house prices are formed by macroeconomic, structural and policy factors, this paper adds to the empirical analysis over the factors influencing house prices in selected OECD economies during the pre-covid19 period, covering a time spam of over two decades.

This paper has employed an extensive data set, including in the analysis framework variables such as the mortgage interest tax relief, the urbanization, and the deposit interest rate. To the best of our knowledge, while some studies may have examined similar groups of countries, the inclusion of comparable variables remains uncommon. Another contribution of the paper is alternative explanations of coefficients regarding the opposing effects that specific factors might have on real house prices, depending on the channel (demand and/or supply) they work through. Interestingly, the opposing effects may offset each other, eliminating the statistical significance of specific variables as far as the specific sample is concerned.

According to the findings of the paper, in the OECD economies under examination, house prices have been positively affected by the population growth, while the growth of unemployment rates in these economies seem to have put downward pressure in house prices. The econometric results provide supportive evidence of the significant role of the MITR program on house price escalation. OECD countries which have adopted a tax relief program, housing demand has been stimulated, pushing house prices upwards.

Considering the housing - supply channel, the construction cost has been found to be positively related to house prices. Increases in material and labor costs might discourage and slow down construction activity.

Regarding the rest of the variables of the econometric model, the simultaneous opposing effects of urbanization on housing demand might be responsible for the variable's statistical insignificance. Opposing effects on housing supply and demand might also explain the insignificance of the variable capturing shifts in deposit rates.

Our findings could contribute to policy making, on a potential attempt to improve stability in the housing market. Monitoring the trend of the macroeconomic, demographic, and institutional factors, which have been found to affect

[6] The minimum amount invested varies among countries (e.g., in the case of Greece, which adopted the program in 2013, the amount cannot be less than € 250,000).



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house prices, could provide an insight for future shifts in house prices. Understanding the way these specific factors affect housing supply and demand could improve government reactions in house price fluctuations.

The findings provide a fruitful field for further study and should be interpreted cautiously. While the aim of the paper is to capture as many house price drivers as possible, the list of explanatory variables is not an exhaustive one. Moreover, special conditions in specific countries, such as tax-benefit programs, may need to be examined at an individual country level.

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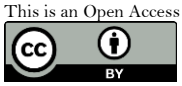



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