

The Impact of Immovable Property Tax on the Macro Economy

Young Sik JEONG Senior Research Fellow, International Finance Team, Int'l Macroeconomics and Finance Dept. (ysjeong@kiep.go.kr)

Eunjung KANG Senior Researcher, International Finance Team, Int'l Macroeconomics and Finance Dept. (ejkang@kiep.go.kr)

Jinhee LEE Economist, Macroeconomic Analysis Division, Economic Analysis Dept., Nat'l Assembly Budget Office (jinhee@assembly.go.kr)

Kyunghun KIM Assistant Professor, School of Economics, Hongik University (khkim@hongik.ac.kr)

Jeehye KIM Head of Team, Real Estate Market Research Center, Korea Research Institute for Human Settlements (kjh@krihs.re.kr)

I. Introduction

Since the 2008 global financial crisis, and especially after the recent COVID-19 outbreak, housing prices and inequality have been increasing worldwide. In the case of housing prices, as of the fourth quarter of 2021, the average nominal house price index of OECD countries rose 71.5% compared to the second quarter of 2012. In the case of inequality, wealth (asset) inequality is worse than income inequality. And Korea is no exception. The World Inequality Report 2022 shows that the richest 10% of the global population own 52% of global income and 76% of all wealth. Similarly, in Korea, the top 10% account for 47% of income and 59% of all wealth. This deepening of inequality is more worrisome in that it leads to inequality of opportunity while suppressing movement between classes, which in turn deepens inequality, creating a vicious cycle of inequality. This is a bigger problem than

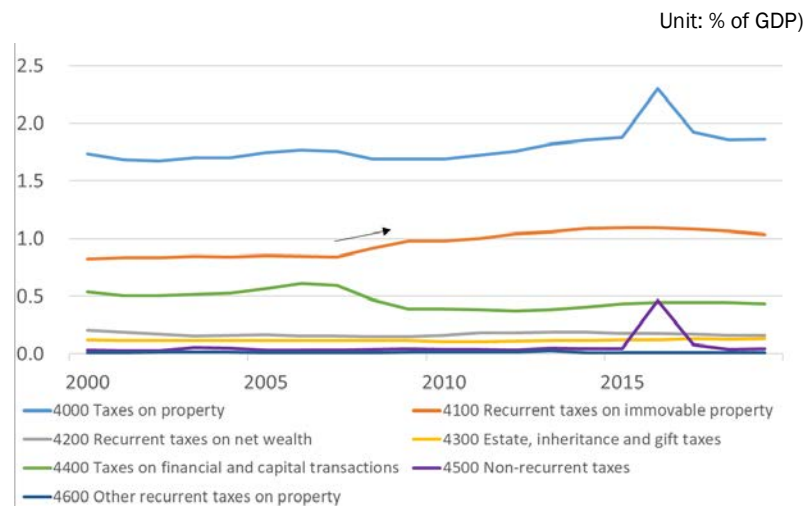
the inequality itself. Therefore, the international community, represented by organizations such as the OECD, World Bank, and IMF, is calling for stronger property taxes, including recurrent taxes on immovable property, as part of mitigating inequality and promoting inclusive growth. In Korea, there is heated discussion on property taxes imposed mainly for stabilizing the housing market, such as recurrent taxes on immovable property, including the comprehensive real estate tax. Upon this backdrop, we first examine international comparisons of immovable property tax burdens using OECD data. Next, this study analyzes the effect of immovable property tax on housing prices, inequality, and economic growth. Finally, we suggest policy implications for Korea based on these findings.

II. International Comparisons of Immovable Property Tax Burdens

First, in terms of time series for OECD countries, the average immovable property tax ratio

(to GDP or total tax) has risen since the 2008 financial crisis. The ratio of financial and capital transaction taxes¹ showed a relatively large drop, and inheritance and gift taxes ratio showed a sideways trend (Figure 1).

Figure 1. Property Taxes as a Percentage of GDP (OECD Average)



Note: Arithmetic mean (simple average)
Source: OECD Revenue Statistics.

In Korea, the immovable property tax ratio is also showing a modest increase. The ratio of transaction taxes, including real estate acquisition and registration tax, generally flattened during fluctuations, while that of inheritance and gift tax showed a steady rise (Figure 2).

Next, in terms of cross-sectional comparison, Korea's immovable property tax ratio was lower than the OECD average level. As of the immovable property tax to GDP ratio, Korea showed 0.93%, while the average of 37 OECD countries recorded 1.06% in 2019 (Figure 3).

And based on the effective immovable property tax ratio (immovable property tax revenues to total private real estate asset value), which is an indicator of the actual tax burden on immovable property, the average of 15 OECD countries was 0.30%, while Korea recorded 0.17% in 2019 (Figure 4). This seems to be due to the relatively high level of real estate prices, low tax base realization rate, and low nominal immovable property tax rate in Korea. In 2019, Korea's private real estate market capitalization to GDP ratio was 554%, the highest among comparable countries, far exce-

¹ The OECD Revenue Statistics only provides data on financial and capital transaction taxes that include both real estate and financial assets. Therefore, we use the

financial and capital transaction taxes as a proxy for the real estate transaction tax due to limitations of the data.

eding the average of 15 OECD countries (375%).

Meanwhile, in the case of financial and capital transaction taxes, inheritance and gift taxes, Korea recorded 1.75% and 0.43% of GDP, re-

spectively, higher than the OECD average of 0.44% and 0.12%. In terms of total property taxes to GDP ratio, Korea recorded 3.12%, which is higher than the OECD average of 1.85% (Figure 5).

Figure 2. Property Taxes as a Percentage of GDP (South Korea)

(Unit: % of GDP)

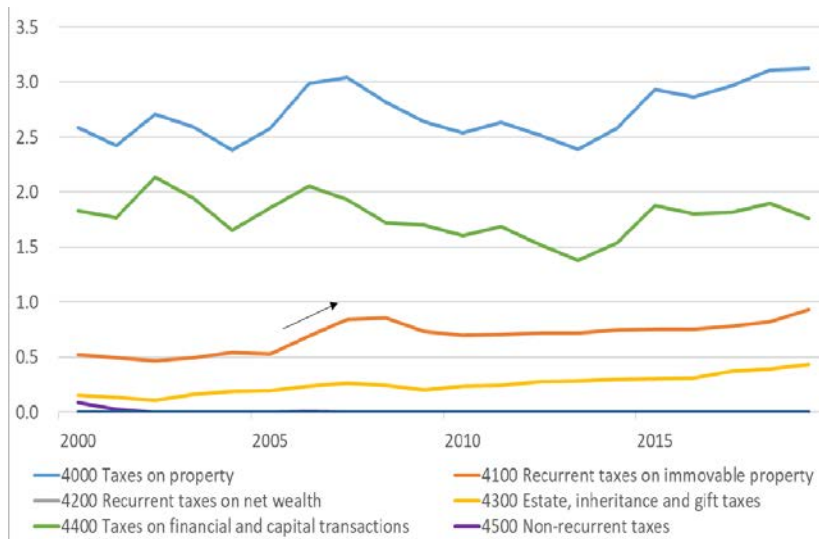
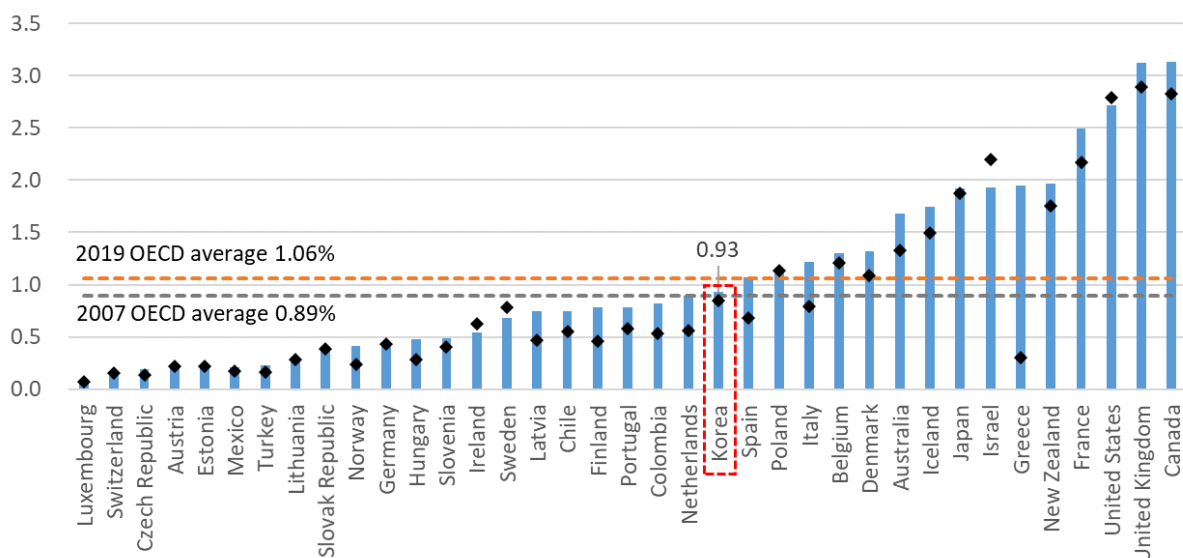


Figure 3. Recurrent Taxes on Immovable Property (OECD, 2019)

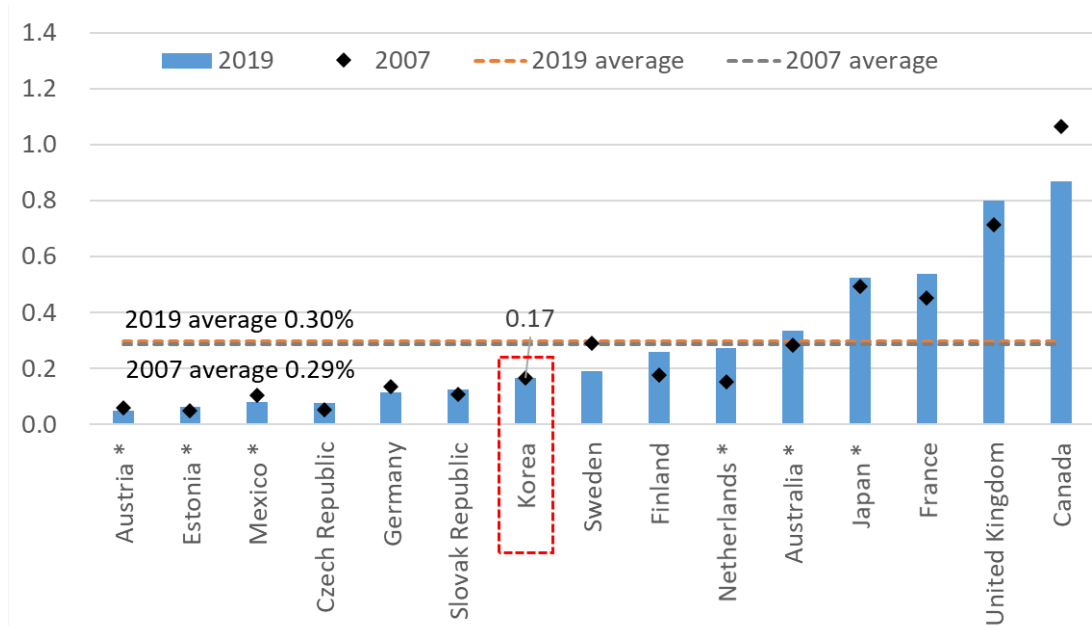
(Unit: % of GDP)



Notes: Australia, Mexico are as of 2018, ◆ denotes 2007 data
Source: OECD Revenue Statistics.

Figure 4. Effective Immovable Property Tax Rate (2019)

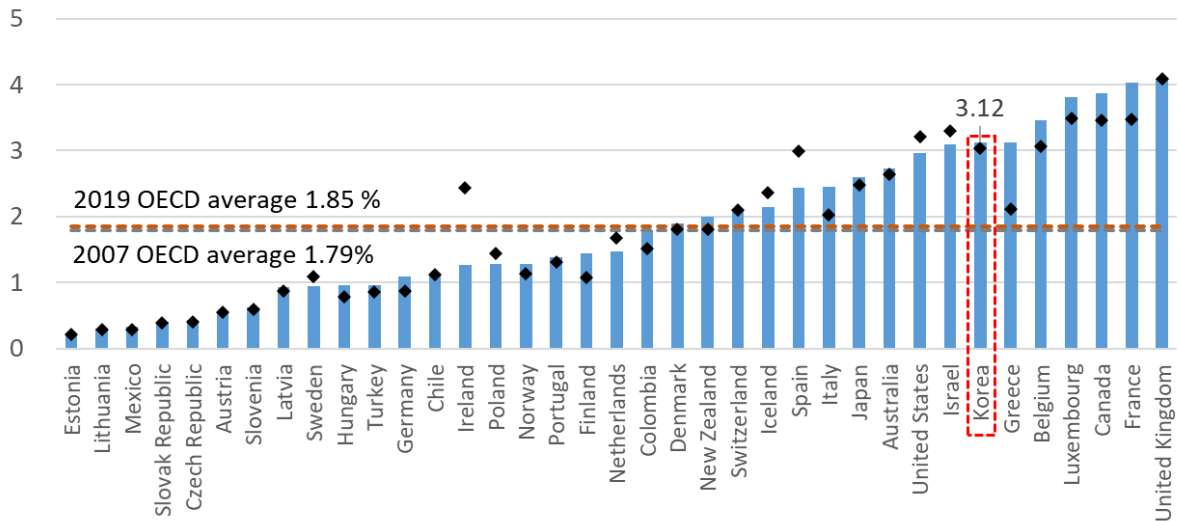
(Unit: % of market value of property)



Note: * denotes 2018 data
Source: OECD Revenue Statistics.

Figure 5. Property Taxes as a Percentage of GDP

(Unit: % of GDP)



Notes: Australia, Mexico are as of 2018, ◆ denotes 2007 data.
Source: OECD Revenue Statistics.

III. Impact of Immovable Property Tax on Housing Prices

We analyze the effect of immovable property tax on housing prices in OECD countries using the dynamic panel model. According to the results of the analysis, an increase in the immovable property tax has a negative impact on the real housing price change rate, price to income ratio (PIR), and price to rent ratio (PRR). A 1%p increase in the ratio of the immovable property tax to GDP and total tax has a significant impact on the decline in real housing price growth by 1.151%p and 0.414%p, respectively (Table 1). This seems to be because imposing higher tax on immovable property raises the cost of owning a house, which increases pressure to sell houses or weakens the demand to purchase houses. In particular, the fact that the strengthening of immovable property tax has the effect of lowering not only real housing price but also PIR and PRR has great significance in that it lowers the risk of a bubble in the real estate market. On the other hand, an increase in financial and capital transaction taxes has a positive impact on the real housing price increase rate, PIR, and PRR. A 1%p increase in the ratio of financial and capital transaction taxes to GDP and total tax has a significant impact on the increase in real housing price growth by 3.393%p and 0.772%p, respectively (Table 1). This seems to be because increasing the transaction tax has a greater effect on deterring housing sales than on weakening housing purchases.

IV. Impact of Immovable Property Tax on Inequality and Economic Growth

We investigate how the increase in property tax affects income inequality and economic growth in OECD countries. The analysis is conducted using a country and year fixed effect model, two-stage least squares, generalized method of moments, and three-stage least squares. According to the empirical results, an increase in immovable property tax is closely associated with decrease in income inequality, and at the same time, an increase in immovable property tax can have a negative impact on short-term economic growth. According to the analysis results using the three-stage least-squares model, a 1%p increase in the ratio of property taxes to GDP significantly affects the decrease of the Gini coefficient by 0.135% and the decrease of the GDP per capita by 0.487% (Table 2). We also find that the increase in income inequality does not lead to an increase in immovable property tax. This decision-making behavior seems to be related to the OECD's policy recommendation to use the immovable property tax as a means to improve income inequality.

On the other hand, our study shows that an increase in financial and capital transaction taxes does not significantly affect income inequality and economic growth. And we find that the increase in income inequality has a negative effect on economic growth, in line with the results of previous studies.

V. Policy Implications

We present policy implications for Korea. First, in terms of the purpose of real estate policy, the Korean policy authorities need to shift toward a more fundamental and broader perspective, such as to promote inclusive growth and sustainable growth, as is being emphasized in the international community, rather than the Korean government's current focus on stabilizing the real estate market. This change in perception of real estate policy is very important in that it lays the foundation for more fundamental, continuous, and systematic real estate policy.

Second, in terms of the real estate tax system, the policy direction and mix of gradually raising the immovable property tax and lowering transaction tax at the same time should be consistently pursued in order to achieve stability in the real estate market, inclusive growth, and sustainable growth.

Finally, when improving the property tax system in the future, Korea's unique characteristics – such as a very high real estate price level, the *jeonse* system, and a low ratio of self-owned houses compared to major countries – should be taken into consideration. **KIEP**

Table 1. Regression Results (Growth Rate of Real Housing Price as Dependent Variable)

Independent variables	(1)	(2)	(3)	(4)	(5)	(6)
Growth rate of real housing price _{t-1}	0.436*** (0.077)	0.509*** (0.093)	0.436*** (0.078)	0.428*** (0.079)	0.447*** (0.095)	0.448*** (0.095)
Growth rate of real housing price _{t-2}	-0.119*** (0.040)	-0.185*** (0.057)	-0.128*** (0.040)	-0.119*** (0.041)	-0.100** (0.040)	-0.096** (0.041)
Effective immovable property tax rate		1.143 (1.398)				
Immovable property tax /GDP			-1.151* (0.691)			
Immovable property tax /Total Tax Revenue				-0.414** (0.172)		
Taxes on financial and capital transactions /GDP					3.393*** (1.249)	
Taxes on financial and capital transactions /Total Tax Revenue						0.772** (0.364)
Real GDP growth rate	0.566*** (0.202)	0.920*** (0.303)	0.570*** (0.213)	0.605*** (0.221)	0.388** (0.165)	0.367** (0.165)
log(GDP per capita)	2.080 (1.655)	2.887 (2.077)	1.809 (1.434)	2.471 (1.549)	4.028** (1.682)	3.981** (1.686)
Growth rate of real household disposable income	0.271* (0.150)	0.464*** (0.173)	0.256* (0.147)	0.238 (0.151)	0.306** (0.141)	0.322** (0.146)
Inflation rate	-1.153*** (0.294)	-0.315 (0.437)	-1.115*** (0.307)	-1.180*** (0.290)	-1.057*** (0.370)	-1.091*** (0.378)
Real short-term interest rate	-0.697*** (0.258)	0.012 (0.453)	-0.654** (0.273)	-0.676** (0.271)	-0.510* (0.277)	-0.563** (0.271)
Growth rate of real stock market index	0.019 (0.021)	-0.003 (0.040)	0.021 (0.020)	0.020 (0.021)	0.013 (0.023)	0.011 (0.023)
Household debt /disposable income	-0.020* (0.012)	-0.011 (0.013)	-0.014 (0.010)	-0.018* (0.011)	-0.030** (0.012)	-0.030** (0.012)
Growth rate of Population	1.380** (0.644)	0.898 (0.825)	1.127* (0.631)	1.321** (0.618)	0.161 (0.727)	0.401 (0.737)
Population density	-0.011 (0.007)	0.003 (0.003)	-0.009 (0.006)	-0.011* (0.006)	-0.010* (0.006)	-0.011* (0.006)
No. of Obs.	546	238	546	546	521	521
No. of countries	31	16	31	31	29	29
AR(1)	0.000	0.003	0.000	0.000	0.000	0.000
AR(2)	0.724	0.547	0.827	0.749	0.136	0.123

Notes: 1) Robust standard errors in parentheses

2) *** p<0.01, ** p<0.05, * p<0.1

3) including country and time fixed effects

Source: authors

Table 2. Regression Results Using Three-stage least Squares (3SLS)

	(1) $GINI_{i,t}$	(2) $GDP_{i,t}$	(3) $PROP_{i,t}$	(4) $TRANS_{i,t}$	
Endogenous Variables	$GINI_{i,t}$		-1.801*** (0.227)	0.743* (0.433)	
	$GDP_{i,t}$	1.700*** (0.105)		-1.326*** (0.117)	
	$GDP_{i,t}^2$	-0.188*** (0.0205)			
	$GDP_{i,t}^3$	0.00590*** (0.00104)			
	$PROP_{i,t}$	-0.135*** (0.0234)	-0.487*** (0.0448)		-0.514*** (0.0842)
	$TRANS_{i,t}$	0.0474 (0.0327)	0.121 (0.0876)	-1.210*** (0.133)	
$X_{i,t}, \Pi_{i,t}$ common	Trade openness/GDP	0.000589** (0.000242)	0.00267*** (0.000589)		
	Financial market openness	0.0635*** (0.0142)	0.159*** (0.0334)		
	Private credit/GDP	0.000200*** (6.58e-05)	0.000433*** (0.000133)		
	Secondary school enrollment	-9.62e-05 (0.000183)	-0.000149 (0.000368)		
$X_{i,t}$	Average length of education	0.00145 (0.00186)			
	R&D expenditure/GDP	0.0214*** (0.00448)			
	Employment in agriculture /Total employment	0.00530*** (0.00133)			
	Employment in manufacturing /Total employment	-0.000355 (0.000912)			
Exogenous variables	Exchange rate flexibility		0.00733 (0.00466)		
	Government consumption expenditure/GDP		0.00131 (0.00201)		
	$\Pi_{i,t}$ Price instability index		-0.176 (0.128)		
	Currency crisis		0.0202 (0.0388)		
	Banking system crisis		-0.00435 (0.0103)		
$\theta_{i,t}, \Omega_{i,t}$	Fiscal balance/GDP		0.00607** (0.00238)	0.00391* (0.00214)	
	Housing price index		0.00361*** (0.000611)	0.00291*** (0.000451)	
	Expenditure transfers /Total government expenditure		0.00612*** (0.00169)	0.00584*** (0.00174)	
	Governance indicator		0.0783 (0.0748)	-0.0409 (0.0801)	
	No. of Obs.	477	477	477	477
R ²	0.974	0.981	0.951	0.913	

Notes: 1) Robust standard errors in parentheses

2) *** p<0.01, ** p<0.05, * p<0.1

3) including country and time fixed effects

Source: authors